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## Foreword

Dear Guests,

Welcome to the 5<sup>th</sup> International Conference of New Horizons in Education-2014 in Paris, France. "The International Conference of New Horizons in Education (INTE)" is an international educational activity for academics, teachers and educators. It promotes development and dissemination of theoretical knowledge, conceptual research, and professional knowledge through conference activities, workshops, discussions and conference proceeding book. The International Conference of New Horizons in Education-2014 aims to diffuse knowledge and research findings among academicians and lead to professional development and scholarly practices in educational sciences.

For this conference, we have gathered in Paris to share and construct knowledge, to promote dialogue across academic differences, to further and deepen connections within our scholarly community, and to be in fellowship with friends and colleagues old and new. This year, INTE-2014 has received about 1300 applications. The Conference Organizing Committee has accepted approximately 900 abstracts and the conference features over 750 presentations, including 620 oral, 86 poster, and 42 video presentations in 8 conference halls and with more than 165 sessions, representing the breadth and depth of education research today.

This year we have participants from more 60 different countries representing five continents, with different races, gender, ethnic backgrounds and cultures.

We would like to wish you a pleasant stay in Paris and a successful conference. We hope that we will meet again at the International Conference of New Horizons in Education, 2015 in Barcelona, Spain next year.

Thank you for your contribution for the success of International Conference on New Horizons in Education 2014.

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***Gazeteyoluyla Tarih Eđitimine Bir Örnek: 1950 Türkiye Basınında Geçmiş Aktarımı***

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***Two Important Types Governess Of The Servet-İ Fünûn Novel's: Matmazel De Courton And Miss Morgan***

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İNTE 2014

# The relationship between locus of control and perfectionism perception of the primary school administrators<sup>1</sup>

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## Abstract

In this research, it's aimed to investigate the relationship between locus of control and perfectionism perception of the public primary school administrators in central districts of Ankara. The target population of the study is composed of public primary school administrators working in Ankara in 2010-2011 academic year. The study group constitutes 391 (selected by stratified sampling method) public primary schools administrators. To gather the required data; "personal information form", "multidimensional perfectionism" and "multidimensional locus of control scales" were used. The structural validity of the multidimensional perfectionism and locus of control scales were tested by exploratory and confirmatory factor analysis (EFA-CFA). Whether school administrators' perfectionism and locus of control perceptions differ or not based on their gender and educational levels was analyzed by t test. Whether school administrators' perfectionism and locus of control perceptions differ or not according to their assignment, age and experience was analyzed by one-way analysis of variance (ANOVA) and LSD test was used to determine the source of this difference. Whether locus of control predicts perfectionism perceptions or not multiple regression analysis was used. The significance level was .05 .

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*Keywords:* Perfectionism; school administrators; locus of control

## Introduction

People are always in search of getting the best for themselves. The search of the best is the result of perfectionism. Most of the people want to achieve the best but unfortunately it is not always possible to be perfect. This is because perfectionism doesn't have limitations. There is always better than the best and the perfectionist is always in search of how to reach this. The search of perfectionism both improves the person himself/herself and his/her organization in one way and it may impede the progress of the person and the organization in another way. Because of this, to investigate the perfectionism perception of administrators is important for themselves, their workers and the organizations. The aim of this research is to investigate the relationship between perfectionism perception and the locus of control of the primary school administrators. School administrators will be informed about their perfectionism and its effects. In school administrators' perfectionism, putting forward the role of the locus of control contributes to give suggestions about the subject. Besides, school administrators' perfectionism is discussed in the area of educational administration.

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## 2.Literature

Perfectionism is one of the important characteristics of human behavior which can change person to person. Through their life, humans see themselves as perfect because of different reasons or they tried to be perfect or they are looking forward to see it in others. In one respect trying to be perfect creates unsatisfied people and it puts them in negative situations, in another respect it can be a way of progress of the person. Naturally, this situation results in the exposure of different point of views.

Some of the people see perfectionism from a positive point of view while, some of the people may not. Actually, perfectionism is a characteristic of personality which involves both the negative and positive sides. While adaptive effects of perfectionism has positive effects in people's lives (such as; to reach the personal goals, to increase life standards, order, self sufficiency, self respect, etc.) the maladaptive effects of perfectionism has negative effects in human life (such as; anxiety, concern, procrastination, pressure, aggressiveness, anger etc.) As a matter of fact in many studies (Beck, 1976; Chang, 1998; Accordino, Accordino & Slaney, 2000; Flett, Besser, Davis & Hewitt, 2003; Stoeber & Rambow, 2006; Stoeber & Rennert, 2008; Özer & Altun, 2011; Dunkley, Blankstein & Berg, 2011 vb. gibi) the adaptive and maladaptive results have been put forward. Perfectionism is a concept which involves completeness, flawlessness, efficiency (Stoeber, Kobori & Tanno, 2010). To achieve these values a person has to study for them constantly. According to the perfectionism perception, there is always better than the best achieved. Seeking for the best may improve one person but it may result in over challenging himself. As a result of this s/he may exposed to physical or mental health problems.

Although the first studies related to perfectionism have been started on the second half of the twentieth century by Adler, 1956; Ellis, 1962; Missildine, 1963; Horney, 1970 the leading studies have been done especially by Burns, 1980; Frost, Marten, Lahart & Rosenblate, 1990; Hewitt & Flett, 1991 on the last quarter of the twentieth century. According to traditional point of view perfectionism is accepted as negative and unidimensional (Burns, 1980; Pacht, 1984). This view investigates the perfectionism patalogically. As a matter of fact, unidimensional view focuses on self oriented consciousness of person (Broday, 1988; Halgin & Leahy, 1989; Blatt, 1995). Even though, previous studies related to perfectionism handled it unidimensionally, the recent studies (Frost, Marten, Lahart & Rosenblate, 1990; Hewitt & Flett, 1991; Slaney, Mobley, Trippi, Ashby & Johnson, 2001; Hill, Huelsman, Furr, Kibler, Vicente & Kennedy, 2004; Stöber, Otto & Stoll, 2004 vb. gibi) handled perfectionism multidimensionally and multifaceted. Frost & the others (1990) put forward six dimensions; (1) perfectionistic personal standards, (2) concern over mistakes, (3) doubts about action, (4) parental expectations, (5) parental criticism and (6) order which they find important to understand perfectionism. Stoeber (1998), suggested that Frost & the others (1990)'s multimentional scale can be handled with four dimensions; and these dimensions are; (1) concern over mistakes and doubt about action, (2) parental expectation and criticism, (3) perfectionistic personal standards, and (4) order. Though Purton, Antony & Swinson (1999) claimed that multidimensional scale can be as the following; (1) concern over mistakes, (2) perceived parental pressure, (3) achieving goals. Hewitt & Flett (1991) developed a different multidimensional facet of perfectionism scale. In their scale perfectionism is examined under three dimensions; (1) self- oriented, (2) others oriented, and (3) socially prescribed perfectionism. Slaney, Mobley, Trippi, Asby & Johnson (1996) analysed perfectionism under three dimensions; (1) perfectionistic standards, (2) order, and (3) inconsistency. On the other hand Hamachek (1978) examined perfectionism under two dimensions; neurotic and the normal. Slade & Owens (1998) analyzed as a two processed model such as positive and negative dimensions.

As it is explained above perfectionism has been handled by different researchers with different approaches. However, the scales (such as Frost & the others, 1990; Hewitt & Flett, 1991; Slaney & the others, 1996; Hill & the others, 2004; Slaney, Rice, Mobley, Trippi & Ashby, 2001) which accessed by the researcher perfectionism can be handled by two dimensions. These are positive and negative or adaptive and maladaptive perfectionism. Hence Terry-Short, Owens, Slade ve Dewey (1995) examined perfectionism as positive and negative, Hill & the others (1997) with Beiling & the others (2004) examined as affirmative and negative, Cox & the others (2002) examined as adaptive and maladaptive. Perfectionism's positive, normal, healthy or adaptive dimensions involve perfectionistic strivings, self oriented perfectionism, high personal standards, and others oriented perfectionism etc. relate to positive characteristics and procedures and consequences. Perfectionisms' negative, neurotic, unhealthy and maladaptive dimensions involve concern over mistakes, doubts about action, socially prescribed perfectionism, and perceived pressure to be perfect, the different emotions between high expectations and results, negative reaction to imperfection etc, are related to negative characteristics and procedures and consequences.

It is obvious that there is a difference between adaptive and maladaptive perfectionism. However, the main difference might be the evaluation of their outcome of their efforts. According to Adler (1956); adaptive perfectionists are the ones who profit the perfect but maladaptive perfectionists are the one who strive to show their own characteristics. Hamachek (1978) described adaptive perfectionists as people who are striving for high

standards and receiving satisfying results whereas he described neurotic perfectionist as someone who can not control the results of their actions. To Ellis (1962) maladaptive perfectionist is a person who has irrational beliefs. For Halgin & Leahy (1989) maladaptive perfectionists' has unhealthy high perfectionism because of their inadequate ability of evaluating the consequences. The conceptual difference between adaptive and maladaptive perfectionism recalls the concept of locus of control (Perisamy & Ashby, 2002).

As a personality characteristic; locus of control has the tendency to perceive that an individual believes the results are the outcomes of his behavior or controlled by external forces such as fate, luck, chance or the others. Those with an internal locus of control perceive the outcome of events to be contingent on their own actions, whereas those with an external locus of control perceive the outcome of events to be contingent with external factors (Rotter, 1966). If a person puts the responsibility of his actions to other powers it is called an external control. If a person takes the responsibility of himself/herself it is called internal control (Levenson, 1974). Hence, the people with an internal control have more to say about their own lives than the ones with external control. One persons' locus of control affects his/her perfectionism. In fact, the person has the tendency to be perfect naturally innate. However this perfectionism tendency can arise and descend by the effect of environment or the person himself.

Because of this reason, it is important to reveal one persons' internal or external locus of controls' effect on his perfectionism. Despite the clear conceptual link between locus of control and perfectionism (Perisamy ve Ashby, 2002) the researcher of this study could identify no studies about the administrators. This study was designed to investigate the relationship between locus of control and perfectionism. School administrators' multidimensional perfectionism behaviours and attitude can increase or decrease their efficiency. To reach the defined aims of the schools depends on the school administrators' effective management. Although school administrators' aim to manage in schools effectively or try to be perfect or he is expected to be perform perfective, he may encounter some hinderances such as politics, executives, personal characteristics, teachers, students, parents, non-governmental organizations, chance, luck, other powers etc. For this reason, a persons' having internal or external locus of control is important for himself/herself and his/her organization. Hence, some of the researchers (Flett, Hewitt, Blankstein & Dynin, 1994; Hill, McIntire & Bcharach, 1997; Perisamy & Ashby, 2002; Ganske & Ashby, 2005) investigated the personal factors related to perfectionism to reveal the factors and differences which affects the perfectionism.

Among the sources that the researcher reached there weren't any studies about the relationship between perfectionism and locus of control of school administrators. It is important for the researcher that there is no study in such an important area. Since there is no research on school administrators which is an important factor in the school efficiency and the concept of perfectionism in management which is desired, observed and expected by the people, the researcher decided to study in this area. Therefore, the investigator intends to reveal the perfectionism of administrators, raise awareness among them and review their perception of perfectionism with this study.

### 3.Methods

The study which is a descriptive survey was carried out with causal comperative and correlarional, in quantitative method which aimed to reveal the relationship between school administrators' perceptiional perfectionism and locus of control (Borg & Gall, 1989; Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2008; Balcı, 2009). In this research perception of perfectionism of public primary school administrators and the relationship between perception of perfectionism and locus of control were aimed to be defined with the Multidimensional Perfectionism Scale (Hewitt ve Flett, 1991) and Multidimensional Locus of Control Scale (Levenson, 1974). Validity and reliability studies of the scales which were translated into Turkish were done by the researcher. Kaiser – Meyer-Olkin (KMO) and Barlett's test of sphericity were used to determine whether factor analysis was suitable for the independent variables. The KMO were found to be .88 for the Multidimensional Perfectionism Scale and .77 for Multidimensional Locus of Control Scale, which suggests that the correlation matrixs were appropriated for factor analysis. Barlett's test of sphericity also indicated that the factor models were appropriated for each scales.

The structural validity of the multidimensional perfectionism and multidimensional locus of control scales were tested by exploratory and confirmatory factor analysis (EFA-CFA). Principal component factor analysis indicated that each scale had three subdimensions as their original forms. In the factor analysis; the eigenvalues of factors were found higher than 1 for each subscale. Factor loadings of items that settled at each subscale of MPS with three factors varied between .32 and .81. [(Self oriented perfectionism, 13 items, factor loading between .32 - .81), (others oriented perfectionism, 6 items, factor loading between .53 - .70) and (socially prescribed perfectionism, 5 items, factor loading between .64- .79)]. Factor loadings of items that settled at each subscale of MLOCS with three factors varied between .42 and .78. ; (internal locus of control, 8 items, factor

loading between .42 - .78), (others based locus of control, 6 items, factor loading between .46 - .71) and (chance based locus of control, 5 items, factor loading between .48- .77)]. Each of the subdimensions of perfectionism scale explained over the 40 % of total variance and each of the subdimensions of locus of control scale explained over the 30 % of total variance. The indices calculated for the fit of MPS' three factor structures to the data are as follows:  $X^2$  (df=249) =470,32;  $X^2$ /df=1,88; CFI=0.96; SMSR=0.077; RMSEA= 0.068. When CFA results were evaluated according to these criteria, they indicated that the model is good. The Cronbach's alpha coefficients were calculated to determine the reliability of the MPS (Multidimensional Perfectionism Scale). The calculated alpha coefficient is .86 for Self Oriented Perfectionism, .69 for Others Oriented Perfectionism, .78 for Socially Prescribed Perfectionism and, .90 for whole scale. The indices calculated for the fit of MLOCS' three factor structures to the data are as follows:  $X^2$ (df=149) =241,04;  $X^2$ /df= 1,62; CFI=0.92; SMSR=0.078; RMSEA= 0.057. When CFA results were evaluated according to these criteria, they indicated that the model is good. The Cronbach's alpha coefficients were calculated to determine the reliability of the MLOCS (Multidimensional Locus of Control Scale). The calculated alpha coefficient is .77 for internal locus of control; .60 for others based locus of control and, .62 for chance based locus of control and, .78 for whole scale.

The target population was composed of public primary school administrators (from 584 primary school, 1682 administrators) working in Ankara in 2010-2011 educational year. The sample was selected by stratified sampling method and the samples of schools were chosen by random sample technique (Karasar, 1982). Scales were given to 391 administrators in 226 primary schools and all the scales were received by the researcher. Unfortunately, during the analysis some of the questionnaires were found invalid because of missing answers and improper filling. As a result five questionnaires weren't included to the research. Finally the sample included a total of 386 administrators. The sample of the administrators were consist of 17 % female (n: 66), 83 % male (n: 320). When the age of participants considered; 13 % of administrators were 35 and less (n: 49); 17 % of the administrators were from 36 to 40 (n: 64); 18 % of the administrators were from 41 to 45 (n: 70); 17 % of administrators were from 46 to 50 (n: 64); 36 % of the administrators were 51 and above (n: 139). 14 % of the administrators were graduates (n: 53); 83 % of the administrators were undergraduates (n: 233). 28 % of the administrators had 5 and less years of management experience (n: 106); 20 % of the administrators had 6-10 years of management experience (n: 77); 15 % of the administrators had 11-15 years of management experience (n: 57); 18 % of the administrators had 16-20 years of management experience (n: 69); 20 % of the administrators are 21 and above (n: 77).

## 4. Findings and discussion

### 4.1. Findings and discussions on primary school administrators perception of perfectionism

Among the statements showing primary school administrators self oriented perfectionism; the statement which showed the highest self oriented perfectionism of school principal was 'when I am working on an assignment I will not be content until the work is flawless' ( $\bar{X}$ =6,15) and the statement which showed the lowest self oriented perfectionism of school principal was 'I don't have to be flawless in each work that I have done' ( $\bar{X}$ =3,88). Among the statements that showed primary school administrators others oriented perfectionism; the statement which showed the highest perfectionism perception was 'I want the other people do their job in the best way' ( $\bar{X}$ =5,90) and the statement which showed the lowest perfectionism was 'I can't stand seeing the other people around me making mistakes' ( $\bar{X}$ =4,36). Among the statements that showed primary school administrators socially prescribed perfectionism; the statement which showed the highest perfectionism perception was 'I am always expected to be successful in every work I have done by the people around me' ( $\bar{X}$ =5,30) and the statement which showed the lowest perfectionism in 'Even if they don't show me, when I make mistakes the other people around me are embarrassed for me' ( $\bar{X}$ =4,40). When the perception of perfectionism examined under the headings of dimensions; the highest one was self oriented perfectionism ( $\bar{X}$  =5,44); the second one was others oriented perfectionism ( $\bar{X}$  =5,08); and the third one was socially prescribed perfectionism ( $\bar{X}$  = 4,94).

There was a significant relationship between the gender and the self oriented perfectionism of primary school administrators [ $t_{(384)} = 2,59$ ;  $p < .05$ ]. Women's ( $\bar{X}$ =73,97); self oriented perfectionism was relatively higher than men's ( $\bar{X}$ =70,01). There was not any significant difference between others oriented [ $t_{(384)} = 1.92$ ;  $p > .05$ ] and socially prescribed perfectionism [ $t_{(384)} = .50$ ;  $p > .05$ ] in respect of gender. There was no significant differences among the assignment of administrators in the dimension of self oriented [ $F_{(2-383)} = 0,423$ ;  $p > .05$ ] and the other oriented perfectionism [ $F_{(2-383)} = 1,175$ ;  $p > .05$ ] whereas socially oriented [ $F_{(2-383)} = 4,387$ ;  $p < .05$ ] perfectionism had a meaningful difference. LSD test was used to determine the source of this difference. Vice principal's ( $\bar{X}$ =26, 61) socially prescribed perfectionism was relatively higher than assistant principal's ( $\bar{X}$ =24,06) but there was no significant difference among the principle ( $\bar{X}$ =25,14). According to this finding vice principle's socially prescribed perfectionism was relatively higher than assistant principal. Primary school administrators education,

age and experience level didn't make any significant difference in their self oriented; others oriented or socially prescribed perception perfectionism.

#### 4.2. Findings and discussions related to the locus of control of the primary school administrators

While the statement '*As a result of my hard work I get what I want.*' showed school administrators high level internal locus of control; the statement; ( $\bar{X}=4,79$ ) '*Whether I get involved in a car accident or not mostly depends on how good a driver I am.*' showed the lowest level internal locus of control ( $\bar{X}=3,37$ ). The expression; '*In order to have my plans work, I make sure that they fit in with the desires of people who have power over me*' ( $\bar{X}=3,88$ ) showed highest level of others based locus of control on school principals; the expression '*If important people were to decide they didn't like me I probably wouldn't make many friends*' ( $\bar{X}=1,82$ ) showed the lowest level of others based locus of control. Among the statements that showed school administrators chance based locus of control; the statement '*I have often found that what is going to happen will happen*' ( $\bar{X}=3,34$ ) shows highest level and the statement '*When I get what I want it's usually because I'm lucky*' ( $\bar{X}=1,45$ ) showed the lowest level of chance based locus of control. Primary school principals perceived internal locus of control ( $\bar{X} = 4,22$ ) at highest level; others based locus of control ( $\bar{X} = 2,82$ ) at secondary level and chance based locus of control ( $\bar{X} = 2,27$ ) at the lowest level. Primary school administrators' gender, education, assignment, age and experience didn't make any significant difference in their internal locus of control, others and chance based locus of control.

#### 4.3. Findings and discussions related to the relationship between the primary school administrators' perfectionism and locus of control

The correlations of the relationship between the locus of control and perfectionism test results are presented in the Table 1.

Table1. The relationship between primary school administrators' perfectionism and the locus of control correlations results

Variables	SOP	OOP	SPP	ILOC	OBLOC	CBLOC
SOP	-					
OOP	,713 **	-				
SPP	,571 **	,616 **	-			
ILOC	,497 **	,403 **	,402 **	-		
OBLOC	,127 *	,246 **	,302 **	,223 **	-	
CBLOC	,057	,187 **	,257 **	,112 *	,634 **	-

SOP: Self Oriented Perfectionism; OOP: Others Oriented Perfectionism; SPP: Socially Prescribed Perfectionism; ILOC: Internal Locus of Control; OBLOC: Others Based Locus of Control; CBLOC: Chance Based Locus of Control; p value .01\*\* & .05\*

When the Table 1 inspected a positive and higher level significant correlation between the self oriented perfectionism and others oriented perfectionism ( $r = .71$ ;  $p < .01$ ), a positive and medium level significant correlation of socially prescribed perfectionism ( $r = .57$ ;  $p < .01$ ), a positive and medium level significant correlation of internal locus of control ( $r = .50$ ;  $p < .01$ ), a positive and lower level significant correlation of others based locus of control ( $r = .13$ ;  $p < .05$ ). There was a positive and medium level significant correlation between the others oriented perfectionism and socially prescribed perfectionism ( $r = .62$ ;  $p < .01$ ), a positive and medium level significant correlation of internal locus of control ( $r = .40$ ;  $p < .01$ ), a positive and lower level significant correlation of others based locus of control ( $r = .25$ ;  $p < .01$ ), a positive and lower level significant correlation of chance based locus of control ( $r = .19$ ;  $p < .01$ ). There was a positive and medium level significant correlation between social prescribed perfectionism and the internal locus of control ( $r = .40$ ;  $p < .01$ ), a positive and medium level significant correlation of others based locus of control ( $r = .30$ ;  $p < .01$ ), a positive and lower level significant correlation of chance based locus of control ( $r = .26$ ;  $p < .01$ ). There was positive and lower level significant correlation between internal locus of control and others based locus of control ( $r = .22$ ;  $p < .01$ ), a positive and lower level significant correlation of chance based locus of control ( $r = .11$ ;  $p < .05$ ). Finally there was a positive and medium level significant correlation between others based locus of control and chance based locus of control ( $r = .63$ ;  $p < .01$ ).

According to the findings it was found that there were meaningful positive relationships among the dimensions of perfectionism and these were relatively related to positive/healthy dimensions such as self oriented and others oriented perfectionism. Among the locus of control dimensions there were positive and significant relationships, relatively the most powerful relationship was between perceived and chance based



locus of controls which were classified as external locus of control. When the relationship between the dimensions of the locus of control and perfectionism examined we can say that relatively the most powerful relationship was between self oriented perfectionism and internal locus of control. In terms of the findings it can be said that when the administrators' self oriented perfectionism increases their internal locus of control increases as well. It means that school administrators self oriented perfectionism is strongly controlled by their perfectionism.

The findings of this research supported the previous research findings. As a matter of fact researchers such as Hewitt & Flett, (1991); Frost & the others, (1993); Wyatt & Gilbert, (1998); Flett, Besser, Davis & Hewitt, (2003); Akkaya, (2007); Mızrak, (2006) ve Flett, Panico & Hewitt, (2011) suggested the positive significant relations among perfectionism dimensions; the positive significant relations among the locus of control dimensions was suggested by Levenson (1974, 1981) and the relationship between the locus of control and perfectionism was suggested by Flett, Hewitt, Blankstein & OBrien, (1991); Flett, Hewitt, Blankstein & Masher, (1995) ve Perisamy & Asbhy, (2002). They claimed that there was a high positive and significant relationship between the internal locus of control and self oriented perfectionism. Flett, Hewitt, Blankstein & Pickering (1998) were also claimed that there can be a relationship between internal locus of control and self oriented perfectionism.

#### 4.4. Findings and discussions about the results of multiple regressions between Primary School Administrators perfectionism and the locus of control

Self oriented perfectionism and locus of control scale were calculated through the multivariate linear regression analysis, and the results were presented in Table 2.

Self Oriented Perfectionism	B	SH <sub>B</sub>	$\beta$	t	p
Constant	3,452	,194	-	17,759	,000
Internal Locus of Control (ILOC)	,461	,043	,493	10,81	,000
Others Based Locus of Control (OBLOC)	,023	,051	,027	,459	,646
Chance Based Locus of Control (CBLOC)	-,012	,045	-,015	,260	,795
R= ,497; R <sup>2</sup> =,247					
F <sub>(3-382)</sub> =41,823; p=,000					

As evidenced in Table 2, multivariate regression analysis results for determining the prediction of the linear combination of internal, others and chance based locus of control regarding the self oriented perfectionism were statistically significant [R<sup>2</sup>=,25; F<sub>(3-382)</sub> = 41,823; p<0.01]. It was found that sub-dimensions of the locus of control (internal locus of control, others and chance based locus of control) altogether explained 25 % of the changes in self oriented perfectionism. However, when t test related to regression coefficient examined it was found that only internal locus of control dimension ( $\beta$ =,493, t<sub>(385)</sub> =10, 81 p<.01) significantly predicted the self oriented perfectionism; others based ( $\beta$ =,027; t<sub>(385)</sub> = ,459 p>.01); and chance based ( $\beta$ =-,015, t<sub>(385)</sub> =,260 p>.01) locus of control didn't predict the self oriented perfectionism significantly. In addition to this, according to standardized regression coefficient ( $\beta$ ) the order of significance of the self oriented perfectionism predictor variable were respectively: internal locus of control, others and chance based locus of control. This result can be interpreted as 75 % of the changes in the self oriented perfectionism score can be explained by the other variables.

The findings have shown that, school administrators' self oriented perfectionism effort depends on them. The relationship between self oriented perfectionism and internal locus of control can be perceived healthy. It can be said that, school administrators' self oriented perfectionism isn't restrained by dogmatic beliefs such as chance, luck or fate when they achieve their self oriented perfectionism in their own right or with their own efforts. The administrators who believe that reaching both organizational and personal aims are under their control can be more successful. By using high level of perfectionism efforts and showing low level concern of perfectionism administrators can achieve their own and organisational goals conveniently.

Others oriented perfectionism and locus of control scale were calculated through the multivariate linear regression analysis, and the results are presented in Table 3.

Others Oriented Perfectionism	B	SH <sub>B</sub>	$\beta$	t	p
Constant	2,967	,227	-	13,068	,000
Internal Locus of Control (ILOC)	,389	,050	,369	7,808	,000

Others Based Locus of Control (OBLOC)	,117	,059	,119	1,969	,049
Chance Based Locus of Control (CBLOC)	,062	,053	,070	1,172	,242
R= ,437; R <sup>2</sup> =,191					
F <sub>(3-382)</sub> =30,089; p=,000					

As shown in Table 3; multivariate regression analysis results for determining the prediction of the linear combination of internal, others and chance based locus of control regarding the others oriented perfectionism were statistically significant [ $R^2=.19$ ;  $F_{(3-382)} = 30,089$ ;  $p<0.01$ ]. It explained that independent variables of the locus of control (internal locus of control, others and chance based locus of control) altogether explained 19 % of the changes in others oriented perfectionism. However, when t test related to regression coefficient examined it was found that both internal locus of control ( $\beta=.369$ ,  $t_{(385)}=7,808$   $p<.01$ ) and the others based locus of control ( $\beta=.119$ ;  $t_{(385)} = 1,969$   $p<.05$ ) significantly predicted the others oriented perfectionism; but chance based ( $\beta=.070$ ,  $t_{(385)} = 1,172$   $p>.01$ ) locus of control didn't predict the others oriented perfectionism. In addition to this, according to standardized regression coefficient ( $\beta$ ) the order of significance of the others oriented perfectionism predictor variables were respectively: internal locus of control, others and chance based locus of control. This result can be interpreted as 81 % of the changes in the others oriented perfectionism score can be explained by the other variables.

According to the findings; it can be said that school administrators' self oriented perfectionism effort depends on them as well as the other powerful sources which are possibly control (district and provincial director of education, supervisors and parents etc.)

Socially prescribed perfectionism and locus of control scale were calculated through the multivariate linear regression analysis, and the results were presented in Table 4.

Table 4. Multivariate Regression Matrix between socially prescribed perfectionism and the locus of control sub-dimensions

Socially Prescribed Perfectionism	B	SH <sub>B</sub>	$\beta$	t	p
Constant	2,428	,251	-	9,687	,000
Internal Locus of Control (ILOC)	,422	,055	,356	7,669	,000
Others Based Locus of Control (OBLOC)	,157	,066	,143	2,398	,017
Chance Based Locus of Control (CBLOC)	,125	,058	,126	2,153	,032
R= ,468; R <sup>2</sup> =,219					
F <sub>(3-382)</sub> =35,625; p=,000					

As indicated in Table 4; multivariate regression analysis results for determining the prediction of the linear combination of internal, others and chance based locus of control regarding the socially prescribed perfectionism were statistically significant [ $R^2=.22$ ;  $F_{(3-382)} = 35,625$ ;  $p<0.01$ ]. It was found that independent variables of the locus of control (internal locus of control, others and chance based locus of control) altogether explained 22 % of the changes in socially prescribed perfectionism. When t test related to regression coefficient examined it was found that all the dimensions; internal ( $\beta=.356$ ;  $t_{(385)}=7,669$ ;  $p<.01$ ), others ( $\beta=.143$ ;  $t_{(385)} = 2,398$ ;  $p<.01$ ) and chance based ( $\beta=.126$ ;  $t_{(385)} =2,153$ ;  $p<.01$ ) locus of control significantly predicted the socially prescribed perfectionism. According to standardized regression coefficient ( $\beta$ ) the order of significance of the socially prescribed perfectionism predictor variables were respectively: internal locus of control, others and chance based locus of control. This result can be interpreted as 78 % of the changes in the socially prescribed perfectionism score can be explained by the other variables.

It can be said according to the findings, school administrators' socially prescribed perfectionism effort depends on them; the other powerful sources which are possibly control (district and provincial director of education, supervisors and parents etc.) and also dogmatic beliefs such as chance, luck or fate which are considered as ineffective. If the administrators' socially prescribed perfectionism makes them reach positive conclusions it can be attributed to them; if they reach negative conclusions it can be attributed to others; if no one is in charge it can be attributed to dogmatic factors such as luck, chance and fate etc.

## 5.Conclusion

At the end of the research, it was observed that school administrators' perfectionism perceptions was above the average and their self oriented perfectionism was relatively higher than other perfectionism dimensions (others oriented and socially prescribed perfectionism) and their internal locus of control was relatively higher than the others locus of control dimensions (others and chance based locus of control). When the effects of demographic variables on school administrators' perfectionism and locus of control perceptions were investigated, it was found out that women's self oriented perfectionism perceptions was higher than men's; vice principals' socially

prescribed perfectionism perceptions was significantly higher than assistant principals'. It was observed that between school administrators' perfectionism and locus of control positive significant relations existed and relatively the highest relation was between self oriented perfectionism and internal locus of control. It was also observed that the only predictor of self oriented perfectionism was internal locus of control; others oriented perfectionism predictors are internal and others based locus of control; on the other side socially prescribed perfectionism predictors were all dimensions of locus of control.

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# The relationship with the personal qualities of ability about conflict resolution of physical education and sport teacher candidates

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## Abstract

The goal of the research analyses the relationship with the personal qualities of ability about conflict resolution of physical education and sport teacher candidates. The sample of the research forms 301 student who studying in the Erciyes and Selcuk University physical education and sport academy, physical education and sport teaching in 1., 2., 3., and 4. Classes. Avarage of the student's age is (age=21.482.10). In the research, "Eysenck Personality Quesrionnaire" were used which occurs from 24 article translated into Turkish by Karancı (2007) and was developed by "Conflict Resolution Scale" and Francis and his friends (1992) occurs from 55 article which was developed to define university student's conflict resolution ability by Akbalık (2001) as the data collection tool. Pearson Correlation parameter calculated in order to comment the relationship with participant's personality qualities between ability of conflict. According to the results of the analyse, there was found a positive way relation with the ability of conflict resolution; neuroticism personality quality ( $r=.244$ ,  $p=.000$ ) and between psychoticism personal quality ( $r=.509$ ,  $p=.000$ ). There was found a negative meaningful relationships ( $p<.001$ ) between the ability of conflict resolution; extraversion personality quality ( $r=-.413$ ,  $p=.000$ ) and lie personality quality ( $r=-.475$ ,  $p=.000$ ).

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*Keywords:* Conflict ability of conflict resolution; personality; pyhsical education and sport teacher candidate

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## 1. Introduction

Although the concept of personality interested as a part of human social life for centuries, in the 1930s, its scientific development began with the emergence of personality psychology as a scientific discipline distinct from other social sciences (Mc Adams, 1997). The personality is the image of the unique factors that affect a man's perception, thinking and behavior form. Constantly the personality which under the influence of internal and external stimuli, includes all behavior of the individual's biological and psychological, genetic and acquired all the skills, motives, feelings, desires and habits. Briefly, in the formation of personality, it is possible to see both impact of the environment where man placed and man's innate characteristics together. From here, by taking notice of the effect of the environment not only the unique characteristic of the personality but also the community of people living in a certain extent can be concluded a certain extent also reflects some features common to all humans. (Tinar, 1999)

Eysenck's personality traits defined separator was found to be associated with certain feelings and behaviors Neuroticism, was found to be associated with a tendency towards anxiety, fear, depression, low self-esteem, emotional and irrational behavior. Extraversion to be social, to go to parties, joke to him, to have many friends, impulsivity, uncontrolled emotions and sometimes has been associated with showing unreliable personality traits. Finally it has been associated with psychoticism aggression, distance treatment, antisocial behavior and insensitivity towards other people (Eysenck and Eysenck 1975). Eysnck, specified that this separation characteristic of personality is independent dimensions from each other. Lie personality represents those who are in the effort to give the false appearance. (Eysenck and Eysenck 1964, 1968)

Interpersonal communication is a requirement in the human's social existence. Natural and inevitable part of social life in the communication process with the producing information/ symbol transmission format

detection and interpretation of messages in each of the stages can be experienced interpersonal conflicts. Human have different needs, requests, preferences, goals, perceptions and values. They are in contact with different types of individuals in any environment these differences are a natural consequence of the resulting conflicts

Conflicts are emerging when one or more than one person fails to reach agreement on any issue, their needs, desires, preferences, goals, and values do not overlap the perceptions and it is inevitable. Therefore, the conflict is a natural and an inevitable part of life. (Türnüklü, 2005). It is difficult to make a precise definition of the conflict although there are dictionary definition of conflict, confrontation and war. In general, the conflict is struggling in competition destroying the boundaries between rivals. (Ataman, 2002) Walton has been identified the conflict as consisting hostility within the group, decreased communication, distrust, sabotage, poor use of words such as printing processes that occur in various forms. (Kelly, 2006) Failure to meet people's basic psychological needs, to be of limited resources and different value of judgements has led to the conflicts. (Crawford and Bodine, 1996) The conflict occurs if a person's actions and breakthroughs to achieve their goals, another person whose action and breakthrough prevents to achieve the objectives. (Johnson and Johnson, 1995) Conflict also can be defined as two or more parties request with each other mismatches resulting dispute, a party trying to reach the objectives of another party to interfere, scarce resources and incompatible with each other purposes at least between the two sides struggle. (Hocker and Wilmot, 2001)

Analyzing personal factors that lead to the conflict, one of the most important factors are communication skills that a person possesses. The communication is the process that verbal or nonverbal messages submission and receipt between at least two people. In the communication process, parties are trying to communicate with the opposite side with their thoughts, feelings or information with the words, tone of voice, physiological appearance, movement and posture. Due to the problems that arise in the communication process, conflicts can be live when they couldn't communicate. (Kestner, P., Ray, P. 2002) The correct using of language communication skills as listening, empathy, feedback, proper use of non-verbal communication, I used while preventing the emergence of conflicts existing, causes of conflicts to be managed in an effective manner. (De Dreu.ve ark 2004)

However conflicts arise when parties present a belief that they will not attain their goal or they detect a difference of interests or goals or their actions in cases of disagreement with the other parties. The idea of being aware of the dispute or efforts the thought of breaking the other party to achieve something constitutes the most important part of the definition of the conflict. (Lulofs ve Cahn, 2000)

Hence the purpose of this study is to uncover what is going on the personality characteristics that influence conflict resolution skills. With this approach in the light of findings in the literature physical education and sport academy of physical education and sports teacher department of the students, people and conflict resolution skills, examine the relationship between personality traits and responses were sought to the following research questions:

- 1: "Conflict lived attempt to understand people" skills and is there a relationship between personality traits? "Conflict lived attempt to understand people" skills, which are predicted by personality traits?
- 2: Is there a relationship between the "Listening" ability and the personality traits? Which personal traits predict "Listening" ability?
- 3: Is there a relationship between personality traits and "Requirements to focus on" skills? Which personal traits predict "Requirement to focus on" skills?
- 4: Is there a relationship between personality traits and "Social harmony" ability? Which personal traits predict "Social cohesion" ability?
- 5: Is there a relationship between personality traits and "Anger management" skills? Which personal traits predict "Anger management" skills?

## **2. Material Method**

### *Sample*

The aim of the research analyses the relationship with the personal qualities of ability about conflict resolution of physical education and sport teacher candidates. The sample of the research forms 301 student who studying in the Erciyes and Selcuk University physical education and sport academy, physical education and



sport teaching in 1., 2., 3., and 4. classes. The average of the student's ages are ( $\bar{X}_{age}=21.48\pm2.10$ ). Personal information about students is given in Table 1.

Table 1: Personal information about students

		n	%
<b>Sex</b>	Female	134	44.5
	Male	167	55.5
<b>University</b>	Erciyes Uni	187	62.1
	Selcuk Uni.	114	37.9
<b>Class</b>	1.class	86	28.6
	2.class	81	26.9
	3.class	69	22.9
	4.class	65	21.6

### 2.1. Data Collection Tools

Eysenck Personality Questionnaire as a means of data collection and Resolving Conflict Scale were used in the research.

### 2.2. Eysenck Personality Questionnaire

"Eysenck Personality Questionnaire (revised abbreviated form) has been applied to students who participated in the study to measure personality traits developed by Francis and friends (1992) and adapted to Turkish Karancı and friends (2007). Eysenck Personality Questionnaire (EKA-GGK), consist of 24 matters and 4 subscales. These are neuroticism, extraversion, psychoticism and lie scales. . (Francis and friends 1992)

According to (Eysenck and Eysenck 1975);

**Psychoticism;** represents distant, cold, aggressive, insecure, insensitive, bizarre and inability to empathize such as guilt and insensitivity towards other people a very unusual personality traits.

**Extraversion;** when representing sociability and impulsivity, people who score high on this dimension, like to communicate with people, sociable and people who prefer to be alone rather than being defined as one.

**Neuroticism;** indicates emotional instability or excessive reactivity, and these dimensions of a person's highest rated anxious, depressed, nervous, shy, low self-confidence can be mushy and it has been suggested.

**A lie;** that has been identified as types in effort to give the false appearance.

The internal consistency were found coefficient extraversion, neuroticism, psychoticism, and to size lie, respectively .78, .65, .42, .64, and test-retest reliability sırasıyla.84, again, .82, .69 and .69. (Karancı and friends 2007) Each factor is evaluated with matter 6 in this survey participants is requested to answer the 24 questions Yes (1) No (0) format. The scores for each personality trait varies between 0 and 6.

### 2.3. Resolving Conflict Scale

Resolving Conflict Scale has been developed by Akbalık (2001) to determine the conflict resolution skills of university students. It is consisting of 55 items, with 4 grade (1,2,3,4-shaped scored) Likert-type scale. Scales have five subscales which are try to understand the conflict experienced people, listening skills, focus on the needs of both party, social cohesion and including anger management. Cronbach's alpha reliability coefficient of the scale was 0.91. Scale values of the correlation are between 0:57 and 0:27. The scale is divided into five subgroups, trying to understand the people whom the students live conflict with, listening skills, focus on the needs on the both side social cohesion and anger management. The lowest score that can be obtained from the scale 55, the highest score is 220. Scale subscale scores from him and to have higher are considered positive.

Akbalık in the results of the factor analysis in the study shows that empathic skills, listening skills, needing to focus on social cohesion, conflict resolution and anger management related behaviors determine the trend. Starting from the size of forming the scale, they are defined as who has empathic skills, respects to the others and listens, trying to understand requirements of people experienced conflict with as well as they have their requirements, social, extrovert and anger can control power to individuals who have conflict resolution skills with individuals. ( Akbalık, 2007) .

### 2.4. Data Analysis

As for the question of the research; Pearson correlation analysis was performed to primarily interpersonal conflict resolution approaches in order to determine the relationship between personality traits. Then by considering separately each conflict resolution skills, these skills which are personality traits that predict whether and how much of CONFLICT RESOLUTION SKILL's in order to establish whether personality traits described by the regression analysis was performed.

## 3. Findings

As for the question of the research; primarily interpersonal conflict resolution approaches in order to determine the relationship between personality traits and correlation analysis results are presented in Table 2.

Table 2: Correlations Between Variables (N = 301)

	1	2	3	4	5	6	7	8	9
<b>1.Understanding</b>	1								
<b>2.Listening</b>	.708**	1							
<b>3.Focusing</b>	-.022	-.59	1						
<b>4.Harmony</b>	.613**	.560**	.294**	1					
<b>5.Anger Control</b>	.160**	.166**	.337**	.315**	1				
<b>6.C.S.P.Total</b>	.823**	.814**	.343**	.838**	.449**	1			
<b>7. Neuroticism</b>	.058	.158**	.239**	.197**	.304**	.244**	1		
<b>8.Extroversion</b>	-.325**	-.499**	.051	-.390**	-.031	-.413**	.022	1	
<b>9.Psychoticism</b>	.357**	.398**	.153**	.493**	.330**	.509**	.014	-.253**	1
<b>10.Lie</b>	-.408**	-.335**	-.149**	-.429**	-.275**	-.200**	-.200**	.069	-.306**

\*\*p<.01

Analyzing Table 2, with the personality trait neuroticism; listening ( $r = .158$ ,  $p = .006$ ), focusing on the requirements ( $r = .239$ ,  $p = .000$ ), were found positive correlation between social cohesion ( $r = .197$ ,  $p = .001$ ), and anger control ( $r = .304$ ,  $p = .000$ ). With the personality trait extraversion; try to understand ( $r = -.325$ ,  $p = .000$ ), listening ( $r = -.499$ ,  $p = .000$ ) and social cohesion ( $r = -.390$ ,  $p = .013$ ) were found between negative and significant relationship. With psychoticism personality trait; try to understand ( $r = .357$ ,  $p = .000$ ), listening ( $r = .398$ ,  $p = .000$ ) were found positive correlation between social cohesion ( $r = -.497$ ,  $p = .000$ ), and anger control ( $r = .330$ ,  $p = .013$ ). If lie with the personality trait; try to understand ( $r = -.408$ ,  $p = .000$ ), listening ( $r = -.335$ ,  $p = .000$ ), focusing on the requirements ( $r = -.149$ ,  $p = .009$ ) were found negative correlation between social cohesion ( $r = -.429$ ,  $p = .000$ ), and anger control ( $r = -.275$ ,  $p = .000$ ). Conflict resolution skills, personality traits that predict what happens regression analysis was conducted for are presented in Chart 2.

Table 3: Personal Traits that Predict Conflict Solving Skills

CRS		$\beta$	t	p	R	R <sup>2</sup>	F	p
Trying understand	<b>Personality Traits</b>				.535	.287	29.726	.000
	Neuroticizm	-.006	-1.127	.899				
	Extroversion	-.253	-4.989	.000				
	Psychoticism	.191	3.597	.000				
	Lie	-.334	-6.332	.000				
Listening ability	<b>Personality Traits</b>				.629	.395	48.168	.000
	Neuroticizm	.121	2.606	.010				
	Extroversion	-.431	-9.219	.000				
	Psychoticism	.224	4.574	.000				
	Lie	-.214	-4.415	.000				

Focusing	<b>Personality Traits</b>				.301	.091	7.380	.000
	Neuroticizm	.222	3.918	.000				
	Extroversion	.090	1.563	.119				
	Psychoticism	.153	2.544	.011				
	Lie	-.065	-1.085	.279				
Social cohesion	<b>Personality Traits</b>				.652	.425	54.611	.000
	Neuroticizm	.143	3.180	.002				
	Extroversion	-.289	-6.349	.000				
	Psychoticism	.332	6.955	.000				
	Lie	-.279	-5.894	.000				
Anger control	<b>Personality Traits</b>				.465	.216	20.360	.000
	Neuroticizm	.272	5.163	.000				
	Extroversion	.047	.883	.378				
	Psychoticism	.297	5.326	.000				
	Lie	-.133	-2.416	.016				
CRS	<b>Personality Traits</b>				.702	.493	71.683	.000
	Neuroticizm	.182	4.295	.000				
	Extroversion	-.312	-7.295	.000				
	Psychoticism	.333	7.414	.000				
	Lie	-.317	-7.132	.000				

When analyzing chart 3, characteristics of the personality provide a meaningful relationship with students understand the person's ability to work across scores. ( $R=.535$ ,  $R^2=.287$ ;  $p<.01$ ). When examining the results of t-test which is about regarding the significance of regression; was observed "Extraversion" ( $t = -4.989$ ,  $p = .000$ ), "psychoticism" ( $t = 3.597$ ,  $p = .000$ ), "lie" ( $t = -6.332$ ,  $p = .000$ ) try to figure out the personality traits of people across the skills predictors explained 29% of the total variance. ( $F_{2,296} = 29.796$ ,  $p < .001$ ).

Analyzing Table 3, personality traits give the meaningful relationship points of listening skills. ( $R = .629$  Balance a  $t$   $R^2 = .395$ ,  $p < .01$ ). Regarding the significance of regression coefficients, t-test examination results; neuroticizm is ( $t = 2.606$ ,  $p = .010$ ), "Extraversion" ( $t = -9.219$ ,  $p = .000$ ), "psychoticism" ( $t = 4.574$ ,  $p = .000$ ), "lie" ( $t = -4.415$ ,  $p = .000$ ) and personality traits that predict listening skills showed that 40% of the total variance explained. ( $F_{2, 296} = 48.168$ ,  $p < .001$ )

Analyzing Table 3, personality traits give the meaningful relationship with the points of the ability to focus on requirements. Regarding the significance of regression coefficients, about t-test examination results; predicted to focus on the skills needs of the personality traits was observed to be explained 9% of the total variance.

Analyzing Table 3, personality traits provides a meaningful relationship with skill points of the social cohesion. ( $R=.652$ ,  $R^2=.425$ ;  $p<.01$ ). Regarding the significance of regression coefficients, about the t-test examination results; neuroticizm ( $t = 3.180$ ,  $p = .002$ ), "Extraversion" ( $t = -6.349$ ,  $p = .000$ ), "psychoticism" ( $t = 6.955$ ,  $p = .000$ ), "lie" ( $t = -5.894$ ,  $p = .000$ ) social cohesion skills of personality traits were predicted and seen to explain 43% of the total variance. ( $F_{2,296} = 54.611$ ,  $p < .001$ ).

Analyzing Table 3, personality traits give the meaningful relationship with the anger control points. ( $R=.465$ ,  $R^2=.216$ ;  $p<.01$ ). Regarding the significance of regression coefficients, t-test examination results; neuroticizm ( $t = 5.163$ ,  $p = .000$ ), "psychoticism" ( $t = 5.326$ ,  $p = .000$ ), "lie" ( $t = -2.416$ ,  $p = .016$ ) social cohesion skills of the personality traits were predicted and has been seen to be explained %22 of the total variance. ( $F_{2,296} = 20.360$ ,  $p < .000$ ).

Analyzing Table 3, personality characteristics provide a meaningful relationship with total scores of the conflict resolution skills. ( $R=.702$ ,  $R^2=.493$ ;  $p<.01$ ). Regarding the significance of regression coefficients about the t-test examination results; neuroticizm ( $t = 4.295$ ,  $p = .000$ ), "extraversion" ( $t = -7.295$ ,  $p = .000$ ), "psychoticism" ( $t = 7.414$ ,  $p = .000$ ), "lie" ( $t = -7.132$ ,  $p = .000$ ) the listening skills of the personality traits were predicted and were seen to be explained 49% of the total variance. ( $F_{2,296} = 71.683$ ,  $p < .001$ ) .

#### 4. Conclusion

The college students that will give direction to the society's future, particularly healthy and fit to create a society that works for physical education and sports teacher candidates' personality traits and conflict resolution skills, the relationship between the study aims to study were reached the following conclusions:

In this study, while were being found positive relationship between physical education and sports teacher candidates' neuroticism personality trait and listening, focusing on the requirements, social cohesion and anger control, it was found negative relationships between the extraversion personality characteristics and trying to understand, listening, social cohesion. Trying to understand with the personality trait, a positive correlation has been found between psychoticism, listening, social cohesion and anger control. Lie personality characterization; were found negative relationship between trying to understand, listening, focusing on the requirements, social coherent and anger control. According to the results, physical education and sport teachers candidates were determined the meaningful relationship between the personality traits and the conflict resolution skills.

In this study, extraversion, psychoticism, and the characteristic of the lie predict to the skill of trying to understand the other person and explained %29 of the total variance. Neurotism, extraversion, psychoticism, and the lie personal characteristic predicted to the skill of the listening and were observed to be explained 40% of the total variance. Neurotism and psychoticism personality traits predicted to the skill of the focusing of the needs were explained the 9% of the total variance. Neurotism, extraversion, psychoticism, and lie personality characteristics predicted to the skills of the social coherent and have been shown to explain 43% of the total variance. Neurotism, psychoticism, and lie personality characteristics predicted the skills of the anger control and have been shown to explain 22% of the total variance. Neurotism, extraversion, psychoticism, and lie personality characteristics predicted to the conflict resolution skills and has been shown to explain 49% of the total variance, Basim and friends (2009) on university students with the five-factor personality traits and conflict resolution approaches in his study; they had identified more that personality structure as openness, extroverted and high levels of compatibility, people with low levels of self-discipline, conflict resolution processes have opened themselves.

As a result, the adaptation of the conflict resolution skills of individuals reveals that personality traits play an important role in this study. However, in the study the relationship between conflict resolution skills and personality traits that uncovers these findings pose the limitations of the sample frame. Therefore, different samples and different forms of conflict (with peers, with partners, colleagues, etc...) to be considered together with the data obtained, it can be generalized is important in terms of achieving results.

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# The returns of the education in the context of micro-macro analysis

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## Abstract

The actual conditions require the information society and the information age. These developments increase the importance of the human capital. At this point, the role of the education is able to overcome information society because the knowledge and the education have been considered as the most effective tool for the economic system of a country. In this respect, the increase of human capital plays an important role to integrate all economic sector's capital.

The aim of this article is to describe the returns of education which are based on both individual and social returns in accordance with interactions in the world economy at micro-macro level and to present the results of these interactions. The individual returns of the education are described at micro level and its social views are explained at macro level. While the education is the most important factor of the human capital specifying the economic development and the growth at the macro level, the education effects on the individual's wage at micro level. Furthermore, we handle the theoretical basis of the returns of education.

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**Key Words:** returns to education, human capital, micro-macro analysis, information society, education investment.

## 1. Introduction

An important paradigmatic change is socially experienced by globalization. As a result of this fact, some structural changes appear in the conditions of production. These changes form a new form of community as reflected on every field of community. This new form of community, which information and technology constitute basically, is called as “Information Society.” (Dikkaya and Ozyakırsır, 2006)

Information society can be defined as a rise period which informational sector, informational production, informational capital, and the factor of qualified person are significant by new technologies are developed, the continuity of education is emphasized, and society is carried from industrial community to an advanced situation economically, culturally, and politically within new developments like communication technologies, information highways, and electronic commerce. (<http://www.canaktan.org/egitim/universite-reform/bilgi-toplum.htm>) The main characteristic of modern societies, in this process when we called as “information society,” is the dominance of scientific knowledge on all operations and phases of society. (<http://www.egitim.aku.edu.tr/bilimfelsefesi.pdf>) Additionally, the need for informational transfer increases in our times with a bigger density than ever before. (Emiroglu, 2007)

It is a known reality that the countries where are able to produce and use information efficiently will have a voice across the world and the countries where are unable to do it will play second fiddle. That's why, all countries increase their investments day by day on their education systems. The most important wealth of countries now appears as capability of producing information and qualified human resources they have, neither quantity of money nor natural resources. (Berberoğlu, 2010)

In information societies, it appears that human capital gains importance as an economic factor in the recent years. This is a brand-new fact to realize the concept of “human capital”, which was expressed by Schumpeter in the beginnings of the twentieth century as “*constructive entrepreneurship*” and by Arrow in 1960 as “*learning by doing*,” and in modeling it in the theories of growth by internalizing it in a macro scale. (Eser and Gokmen, 2009)

Information society, which is usually achieved by the developed countries, refers to an important process to the development of the developing countries and the integration of countries into the globalization process. (Emiroglu, 2007) As emphasized before, this is possible only with education. In this context, highlighting the importance of education by the study, it is to assess its advantages within a micro and macro analysis. Because

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globalization, information society, and the process related to it take part in an important place in our life.

A considerable sign of how determinative information and information society are in our life is the global meetings, which focus on some agendas like global security, human rights, economy, ecology etc., to be organized on information and information society anymore. The first of them was organized in the Canton Genf of Switzerland in 2003 with the participation of 176 countries, and the second was held in Tunis in 2006. (Cukurcayır and Celebi, 2009)

## 2. Education and Human Capital

The age that when we are present is the one when social, cultural, economical and technological activities speedily change and communities are deeply affected from these changes. These changes experienced had better appear as developments providing for communities to live in welfare and high living standards. In this context, the regular development of communities is possible only with their qualified individuals. This situation boosts the importance of education more, besides. (Genc, 2000)

When we define “education”, it means a *long-termed process* that plays a role for developments of individual and community, supports economic development, and preserves and improves cultural values. (Hesapcioglu, 1992) The close, far, and general goals of education provide different benefits for society. While education helps forming a strong community socially, it leads to be a powerful country in economy with its productive force that consists of the educated people. (Tas and Yenilmez, 2009)

Education is expected to perform three basic functions: the first is to socialize, the second is to get someone adopt knowledge, skill, attitude, behavior, and habit, and the third is to incline toward the profession, bringing one in some professional capabilities. The success in the education is tied to whether these functions are realized or not. We can measure the realization situations of these functions in the education system by the emergence situations of their individual and social returns that are expected from the education. (Caliskan, 2007)

The concept of human capital is defined as the accumulation of investments in such fields as education, health, on-the job-training and migration that enhance person’s productivity in the labor market and also in non-market activities. (Sharpe, 2001) According to another definition, information and skills in an economy indicate the qualified labor force. (Simsek and Kadilar, 2010) That is the unity of the elements increasing the quality, efficiency, and fertility of labor. (Tiryakioglu, 2008) This concept was brought in the literature of economy by the studies of Smith, Marshall, and Mill and its existent meaning was developed by such economists as Denison (1962), Schultz (1968), and Becker (1964). (Eser and Gokmen, 2009) Human capital is person’s productive capability, knowledge, and skill and this capital is measured by the value of goods and services that are produced. Also, the value of person’s human capital is the same with the consumption value of goods and services that he produces. (Thurow, 1970, cited from Hobikoglu)

This constitutes the framework of Economist Theodore W. Schultz’s concept of human capital. (Dogan and Sanli, 2003) With regards to Schultz (1968), “Useful capabilities that person owns” are the element of human capital. (Schultz, 1968)

If a goods or service has a benefit only for a period, we see it is defined as “consumer goods”. However, if having a benefit for future, it is investment goods. There are some goods and services that, they gain favor for both periods. Education including in a third definition, it is described as both investment and consumer goods. (Ozsoy, 2008) Education is consumption when gaining a temporary favor, but it is investment when determining the capacities of individuals in the future production and acquisition. (Gülpek, 2012) Educational expenditures are the basis of investing on human. (Savas, 1979) These investments include the following characteristics in micro economically: 1. It is a continuous investment. Income acquired differs from educational term. 2. Individuals have high chances to get more incomes in every new educational grade. 3. It is in question that educational investments are indivisibility. 4. Investments on education can differ during human’s life. (Ozsoy, 2008)

Countries take steps in transferring their structural changes in the education system and so the education on the global arena by global policies. That’s why, the countries investing on education to achieve the standards in the information society assess it as a strategy of development. The countries in this effort attach importance to human capital in this manner. (Dikkaya and Ozyakısır, 2006) We see the relationship of education and human capital in the context of developing individuals. (Colak, 2010)

It is very important to develop human capital and use it effectively especially for the less developed and the developing countries. In order to develop human capital, it needs a well-educated and healthy society to develop human capital. (Eser and Gökmen, 2009)

The most important feature of education is to invest on the future of individuals, firms, and communities. Education plays an important role for transforming the economic and social life, namely, raising the level of welfare and the quality of life. Education is in the center of such political areas as participation, income distribution, poverty, social harmony, and preservation of environment in social, and growth, force of competition, and increment of productivity in economic. (TUSIAD, 2005) Additionally, knowledge and



education are seen as the most effective tools of development, improvement, and respectability. (Aydin, 2003) Moreover, the development of country is linked with people there to receive a suitable and continuous education and contribute to economic growth with knowledge and capability that they obtain in this manner. Individuals in the center of development should be raised awareness and equipped with the desires of researching, working, learning, and thinking. Therefore, the most important propulsive force of socio-economic development and the most significant element of productivity increment are the educational level of society and labor force. (Cakmak, 2008)

### 3. Returns to Education

Education explains a kind of long-termed investment. There are significant uncertainties on the time and quantity of educational returns due to its nature. (Bakis, 2012) In order to put the returns of education forwards in quantitative, the basic characteristics of person's education should be expressed quantitatively. (Caliskan, 2007)

There are three important methods about the returns of education investment. The first, developed by Mincer (1974). Mincer's method involves econometrically estimating an earnings function where log earnings is regressed on years of study and age/experience in the labour market. Under this description, the estimated coefficient on the years of study variable represents the rate of return to an additional year of education. More general specifications include dummy variables that distinguish between years of education or the last level of education obtained. A second approach covers computing the ratio of discounted net benefits to total costs. This method does not measure the internal rate of return to education as it depends on an assumed value of the discount rate used in the calculations. And a third method involves the calculation of the internal rate of return associated with an investment in education in much the same way as one would compute the profitability of a financial asset. Specifically, this method computes the rate of return as the internal rate of return that equates the net lifetime discounted benefit from pursuing the educational investment with zero. (Stark, 2007)

In human investment that may be realized in micro and macro levels, it is explained the investment that a person makes for himself in micro level and a firm performs with human factor. Human investment in macro level includes the human investment made by the state. (Tunc, 1998) In the analysis of this paper, the return of education is going to be explained in a theoretical manner with some examples under the light of the studies done.

#### 3.1. Evidence at The Micro Level

The micro return of education is inclined towards the calculation of individual and social returns of definite educational levels and occupations. (Ozsoy and Surmeli, 2012) We can analyze the economic returns to education with Figure 1. Michaelowa (2000), has stated expected returns of education.

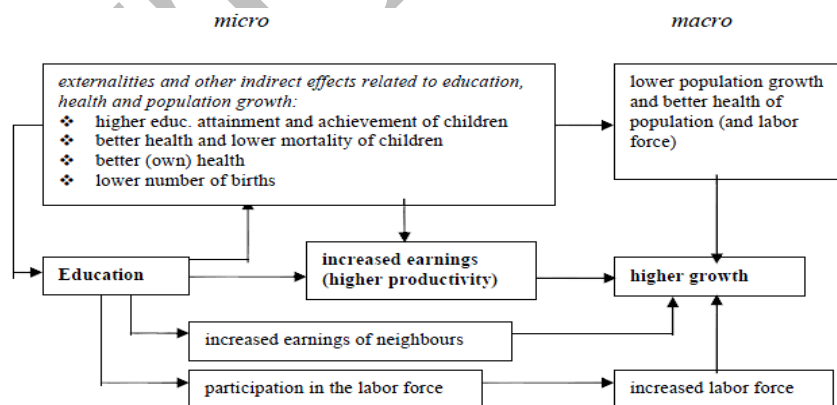


Fig. 1. The Returns of Education, Michaelowa, 2000 p.2.

Figure 1 shows that at the micro level, the direct link between education and individual earnings will be at the center of this figure. At the micro level, education earnings and earnings of neighbours increases. Moreover, this level leads to participation in the labour force. At the macro level, lower population growth and better health of population results in higher growth.

#### 3.1.1. Private Returns to Education

“Individual return” means the appraisal of education under the light of costs that directly fall to a person's share and in its benefits. (Stark, 2007) Individuals educate themselves for wide range of reasons. One is personnel

satisfaction: Education as a consumption good. At the same time, since Schultz (1961) and Becker (1964) indicated the concept of human capital in the 1960s, education has mainly been seen as an investment. (Venniker, 2001)

#### 3.1.1.1. The Relationship of Education and Income

Despite A. Smith, A. Marshall, and M. Friedman were interested in education, the studies about the effects of education and labor force on economic development could not show integrity until 1950's. (Becker, 1992) Education was accepted as the most important component of the theory of "human capital" that appeared in 1950's. Additionally, the link between education and income attracted the researcher's interests considerably. The theory of human capital expressed that education is the most significant determinative of capital difference or income difference among individuals. (Caliskan, 2007)

By the theoretical developments in the educational economy, it was developed an empiric field that makes quantitative inferences. The causal relationship between education and profit was started by Mincer's studies in 1970 and 1974. Mincer sets a causal relationship among a person's study period, experience, and profit. This relationship contains gender, sector, and other observable variables. "Mincer's output" or "educational return" is the coefficient that shows the effect of study period on profit via econometric methods. This output is important for education to introduce social data in influencing on a person's life. Furthermore, despite the educational return is not directly calculated by this method of Mincer and it cannot explain the profit situation of person in some cases, the results obtained in similar to this equation can be named as "*educational return*." (Egitim Izleme Raporu, 2011)

Mincer says that; educated workers enjoy at least three main advantages over less educated workers in the labor market: Higher wages, greater upward mobility in income and occupation. (Mincer, 1991)

One of the most important micro-economic characteristics of human capital investments is a person to get an opportunity for more income generations by human investment. This opportunity appears especially in educational investment. It can be lived an income increase as long as arriving at an upper educational level from a lower level. This situation can be defined as a difference in educational returns, and the educational return can be different according to countries to be a developed or less developed country and such policies as the attributes of market, income distributions, and costs of education of these countries. (Tunc, 1998)

While the effect of education on income is analyzed within micro-economic analyses, the year when a person spends in the school is generally paid attention. The most significant advantage of these analyses is easily to reach this type of data particularly in the developed countries. Nevertheless, this data does not contain information about type and quality of education or curriculum. (Caliskan, 2007) *E.g.*, people's incomes who receive a university education in such member countries of OECD as Denmark and New Zealand are determined 25% more than those who finish a secondary education. Even this difference in some countries is more attractive, because it may reach 120%. (Bal, 2011)

Psacharapoulous expresses the rate of variables, which explain the income differences, may change according to the level of education and it is accepted as 0.77 averagely. Based on these studies, he developed the concept of "*gain function*." This function is fallow as: (Woodhall, 1987)

$Y = (S, A, F, \text{age} \dots)$

S: Study Period, A: Capability (IQ), F: Father's Job

#### 3.1.1.2. The Relationship of Education and Labor Force Participation

Education explains the process of training human resources. It should be established a planned formal and non-formal education for a person to be able to gain strength by physical and internal activities and in showing a change of behavior. Education is a *sine quo non* precondition to provide employment and quality of production in this context. Human resources appear as a variable dependent on factor of education. In order to fix the development levels of countries at present days, this variable plays an important role. The number of well-educated and qualified human force, the professional education provided for young people, the contribution to science, and other similar opportunities are among these indexes. (Bircan, 1998)

Main benefit of education is the lower risk of unemployment at higher educational levels. (Mincer, 1991) When the level of education in population, the labor force participation rate also tends to rise. Moreover, despite the high unemployment in countries which have high level of education, the question about how the role of education overcome of unemployment is still in the spotlight. (Kavak, 1997)

#### 3.1.2. Social Returns to Education

"Social return" means the return provided by education in paying attention to all direct individual and public costs and benefits that fall to public's shares. (Stark, 2007)

When we describe of the social profitability of an investment in human capital, “the social rate of return” is the internal rate of return such an investment. (Sianesi and Reenen, 2003) That’s why, benefitting from educational services makes both monetary and non-monetary contributions to person and community. (Gölpek, 2012) The social returns to an educational investment indicate the desirability of education investment to society. (Venniker, 2001)

The social benefits of education in terms of social harmony are expressed as less crime rate, democratization and participation, protection of individual health and more income acquisition. (Tas and Yenilmez, 2008) While much is known about the private returns to education, knowledge about the social returns to education is scarce. (Venniker, 2001) So the calculation of social benefit for educational investments is more difficult than individual benefit. (Tas and Yenilmez, 2008) However, the most comprehensive study done in this matter was in the book related to determine the values of educational investments, called “The Appraisal of Investments in Educational Facilities”, which was made by the cooperation of OECD and the European Investment Bank. Under the study, three different scenarios about the results of educational expenditures of the three OECD countries are compared with each other. The first one of scenarios can be stated as the social benefit of educational expenditures and the natural development of this process during the internal growth. The second one is the changes that occur because the rate of educational investments to GDP increases by 2%. The third scenario is related to the conclusions happening because the schooling rate of secondary education is increased by 10%. (Turkmen, 2002)

The rates of returns calculated by the complete method for 83 countries on Figure 2, which indicates the rates of educational returns, show the rates of personal and social returns for primary, secondary, and higher educations. On this Figure, the personal return in each level of education is more than the social return. Because social return in education is less than personal return, it can be explained by social return shows a calculable minimum level. (Yumusak, 2009)

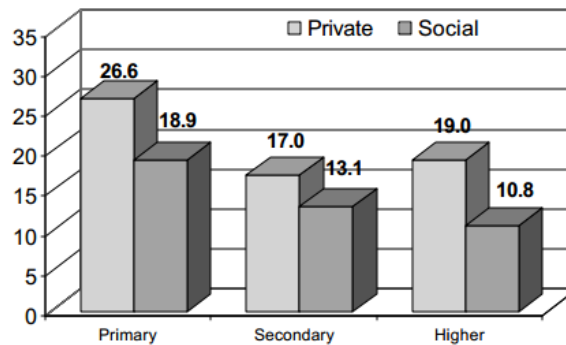


Fig. 2. Returns to Investment in Education by Level, Psacharopoulos, Patrions , 2002, p.15.

The study done in India about the social benefits of education provided important results for the outputs of female students’ education. Under this study, it was achieved that the education of 1000 female students in the primary school cost 32.000\$ for one year, and it was returned profit 75.000\$ in favor of additional (educational) investments by the fertility rate are decreased; 32.000\$ by the child deaths are reduced; and 2300\$ by the malignant diseases are lowered. (Turkmen, 2002)

### 3.2. Evidence at The Macro Level

The macroeconomic return of education generally shows the role of educational expenditures on the process of economic growth. (Ozsoy and Surmeli, 2012) In the macroeconomic dimension of education, economic development and economic growth are researched.

The concepts of “*economic growth*”, “*economic progress*,” and “*economic development*” are mostly used in the same meaning for both written language and spoken language. However, we should distinguish it in several differences. According to Economist Amonn, who explains differences between “*economic growth*” and “*economic progress*”, and “*economic development*” at most consistently, the national economy changes in two ways in time. Firstly, the national economy grows and develops with its body. *E.g.*, its population increases, labor force mounts, and factors of production boost. Secondly, the body and roof of the national economy change. *E.g.*, the shares of agricultural, industrial, and service sectors in GDP change, the distribution of labor force in these sectors differs, and various changes are experienced in the infrastructure. Such increments in the national economy as population, labor force, land, and other factors of production are called as “*growth*.” “*Development*” or “*progress*” explains the changes that occur in the body and the roof of economy. (Acar, 2002) Moreover, “*development*” consists of the reflection of positive results in economic growth on community. (Coskun, 2009)

### 3.2.1. Education and Economic Growth

“Economic growth” means *growth* in per capita real income. (Kibritcioglu, 1998) Empirical estimation of the contribution of economic growth of education to economic growth dates back to 1957. Robert Solow published his seminal paper in this year. Solow’s paper is “The Review of Economics and Statistics. Solow’s aim was to estimate the contribution of labour, capital and technological change to economic growth in the United States between 1909-1949. Over this period, he used the aggregate production function. And also, he estimated the contribution of labour and capital and attributed the unexplained section of the total growth to technological advancement. (Giles et al., 2006)

Endogeneous growth theories and augmented Solow growth theories have emphasized the importance of education in determining sustainable economic growth. In the world’s economy, some nation’s income and wealthiness are greater than other nations. Education proved itself to be main source in this regard. (Afzal, 2011)

The literature about education investment and economic growth identifies two ways of this investment for economic growth contributions. First, human capital can directly participate in production as a productive factor. In this way, human capital would generate the growth of output. This is so-called level effect. Second, human capital can attribute to raising technical progress because of the education eases the information, diffusion and adoption of new technologies. This effect is so-called rate effect. (Freire-Serén, 2001)

Many researchers mention about the role that is played by education for economic and social development of countries. A nation’s human capitals are the basic factor that shows the process and character of its economic and social development. Most of the developing countries believe in that the rapid increment in the educational opportunities is significant for economic development. Such the theorists of human capital as Schultz, Mincer, Becker, Denison, Harbison, and Myers researched the link between education and economic growth. Education, for them, led to increase productivity in boosting the stock of a person’s human capital. The development economists adopted a thought in 1960 and 1970’s about education was an element of investment. In the national plans during these years, there were some sentences or clauses about education was important because it got necessary skills for development. By the idea that set the link between education and economy, such organizations as the World Bank focused in 1980’s on education that accelerated economic growth. (Ozsoy, 2008) There are other studies about economic growth and education in the literature (Uzawa, 1965; Lucas, 1988; Romer, 1986, 1990; Barro, 1991; Barro ve Lee, 1993, 1994; Barro and Sala-i Martin, 1995). According to Lucas (1998) the sustained economic growth is because of the accumulation of human capital, and education is the main tool for human capital accumulates. The human accumulation rate depends on the time spent on education. According to Romer (1986,1990) economic growth depends on existing human capital, which generates innovations. (Sarı and Soytaş, 2006) The theoretical developments between human capital and economic growth now are mainly treated under the framework of the models of Lucas (1998), Romer (1990), and Mankiw and et al. (1992). The first two are the internal growth models, and the other is the external growth model. In the model of Mankiw and et al. (1992), it is witnessed that human capital is added into function of production as an external variable, and in this way, the model of Solow is broadened. (Cetin and Ecevit, 2010)

The quality of education is one of the basic attitudes of economic development rather than the existence of education. The factors constituting the quality of education are to form strategy and policies that are designed for providing the performance of education effectively and efficiently and in using technological innovations to activate the process of education. Because human capital appears depending on education, such indicators as average study period, rate of schooling, rate of literacy, rate of higher education institutions, educational expenditures, and number of scientific publications show the indicators that indicate potentiality of human capital depending on education. (Tiryakioğlu, 2008) Nevertheless, for a strong structure of human capital, the variable of educational expenditures is significant. (Pamuk and Bektas, 2014) In most of the quantitative studies about the return of education on economic growth (Barro 1991, Barro and Salai-i-i Martin 1995, Hall and Jones 1999, OECD/UNESCO 2002, Temple 1999, Griliches 1996, Bils and Klenow 2000, Olaniyan and Okemakinde 2008), it appears a positive relationship between education and economic growth. (Wigley and Akkoyunlu, 2011) Other many studies incline toward finding the relationship between education and economic growth. (Sariaslan, 1978)

### 3.2.2. Education and Economic Development

The contribution of human capital to economic development is to enable to put forward human capital with different indicators while countries increase their investments on human capital and in comparing it among countries. This opportunity is usually measured by the indexes that show the variables of level of education and health standards, and the level of development in the economy literature for a country. (Karatas and Cankaya, 2010)

The problem of development rises to prominence because of the necessity of getting the highest level of production in order to use scarce resources rationally and providing the structural changes in the fields of

economy, society, politics, and culture. The reduction of development and underdevelopment problems is dependent on the quantitative and qualitative situations of physical (material) and personal (human) resources in economies. Particularly, in the inclusion of physical resources into economic process in appraisals, human factor has an important function. Because it will play a role to perform the development.(Tunc, 1998) This role is provided by the force of learned-community and skilled-person. In order to raise awareness in person who is the mind of development, it should be equipped with the desire of researching, working/studying, learning, and thinking. These are possible only with education. (Turkoglu,1994)

In the traditional development models, it is expressed development not to be possible without education. (Ergun, 2011) Development triangle shows that governmental bodies, educational institutions and transnational corporations are the dominant players in this triangle. Each having distinctive roles and various degree of freedom. (Lundahl and Ndulu, 2008)

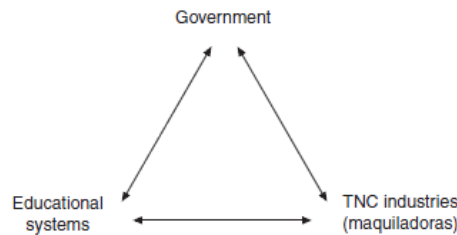


Fig. 3. Development Triangle, Hanson,2008, p.22.

The contribution of investments on human capital to economic development increases in parallel to the increment of importance in knowledge for the process of production. The returns of these investments are calculated higher than the returns of physical capital investments especially in the developing countries. *E.g.*, in a study that the resources of Brazil's growth in 1970 and 1980's were researched, it was found that technological development and human capital had higher contributions than physical capital and labor. The resources of growth realizing were found in these percentages: Physical Capital: 19%, Labor: 1,8%, Human Capital: 24%, and Technological Development: 40%. (Kasliwal, 1995, cited from Yumusak and Kar, 2000)

Additionally, education plays a balancing role to provide development, which is common efforts and hopes of countries, and to distribute national incomes in leveling the social layers in the low-income group up to the high-income levels in favor of the developed and developing countries in the first. (Turkmen, 2002)

Moreover, earnings from work increase with economic development, and the benefits associated with jobs improve as well. The relationship is not mechanical, but growth is clearly good for jobs. (The World Bank, 2012) (Figure 4)

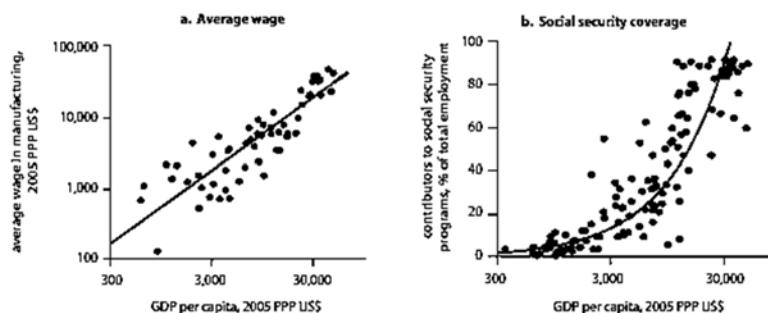


Fig. 4. Jobs Provide Higher Earnings and Benefits As Countries Grow, World Developments Reports 2013, p.9.

Because education has an important role in sustainable development, programmes constituting good-quality education and developing actual strategies. Should be applied in every field of education to support it (Ergun, 2011).

## Conclusion And Suggestion

Education, as an investment on human capital, is important for the developed and developing countries. The significance of education in the information age directs these countries to investments. The interest starts to appear in the world economy after 1950's significantly. It is seen that all factors in economy are an inseparable whole, while examining the necessity of education to develop human force within micro and macro analyses. Investments on education affect personal and social benefits more quickly. It should be organized educational systems to string along with rapid changes appearing with information society in the world and in putting them in a modern level.

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# The role of certification in GIS&T education

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## Abstract

Geographic Information Science and Technologies (GIS&T) have today become critical components of the global cyberinfrastructure. The increasing demand for specialized geospatial education and training opportunities was responded by the rapid development of academic certificate programs and also plenty of vocational courses. Unfortunately, the GIS education both formal and informal is highly variable by quantity and quality in many countries. It requires the certification of education. One of the first national-wide GIS certification is organised by URISA in USA, which is based on self-certification process applying benchmarks for main 3 areas – education, experience and contribution to the profession. In the Czech Republic both the standardisation of relevant higher education as well as improved certification of vocational training are required. It is planned to establish a national educational board and to develop appropriate certification programmes. For certification of professional development the competency-based model is preferred.

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*Keywords:* certification; GIS; education; standardization; vocational training

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## Introduction

Geographic Information Science and Technologies (GIS&T) have today become critical components of the global cyberinfrastructure, both in the university and in society. The US Department of Labor designated geotechnology as “one of the three most important emerging and evolving fields, along with nanotechnology and biotechnology” (Gewin, 2004). The importance of GIS is given by the central coordinating principles, the special techniques that have been developed to handle spatial data, the special analysis methods that are keys to spatial data and particular management issues presented by geographic information handling (Longley et al., 2005). There is no surprise to request well prepared professionals.

GIS is usually understood as an applications-led technology and a corresponding development of professionals cannot stand only on a formal higher education. The rapid development of technologies as well as integration of new concepts call for continuous vocational training, improvement of professional competences especially for applications with high impacts on life of people and society. The key questions are how to motivate people for continuous education, how to lead them towards required standards, how to evaluate their success and achievements. One of the important ways how to address these issues is a Certification.

It may be expected the globalization will lead at least in some areas to globally accepted certificates. In GIS&T field still no globally accepted professional certificate exists, even though the arising international interest about certification provided by GIS Certification Institute.

The increasing demand for specialized geospatial education and training opportunities was responded by the rapid development of academic GIS-related programs. Unfortunately, the GIS education both formal and informal is highly variable by quantity and quality in many countries (in the USA as well as in the Czech Republic).

The need of certification in GIS&T education is generated by several issues. One of them is a high variability of the existing education activities of GI professionals both in formal as well as informal education. This diversity is expressed both in quantity and quality. DiBiase D. (2003) has criticised this situation in Northern America and argued for certain forms of accreditation of GI professionals. Also respondents to the ASPRS industry survey complained not only about the “shortage of trained workers emerging from educational programs,” but also about “the lack of the required skill sets among many of the graduates” (Mondello et al., 2004, in DiBiase et al., 2006).

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## State-of-the-art of GIS&T certification

The certification can be organised by existing professional associations (analogy with i.e. accountants, geodesists, or insurance agents) or established on respected authorities (individuals or companies well-known in GIS&T). Barnhart (1997) distinguishes 3 types of professional certification – portfolio based, competency based, and curriculum based. Nevertheless, the concrete certification process may integrate features of more than one system of certification.

### GISCI

One of the first national-wide GIS certification is organised by the Urban and Regional Information Systems Association (URISA) in USA (Longley et al., 2005). URISA created a Certification Committee in 1998 and launched the portfolio-based certification program for GIS professionals (GISPs) in 2003.

The certification is managed by the GIS Certification Institute (GISCI, [www.gisci.org](http://www.gisci.org)). GISCI declares to offer the only industry-wide, internationally-recognized, software-agnostic Certification available to geospatial professional around the world. The current number of certified professionals in the world is depicted in fig. 1.

No GIS exams are organised; the certification is fully based on self-certification process with standard benchmarks for main 3 areas – education, experience and contribution to the profession.

The certification is not understood as a single step, but as a process. The initial certification lasts for five years and after that it has to be renewed otherwise the certificate expires.

For **initial certification** each applicant has to achieve:

1. the minimum number of required points within each of the three categories - Educational Achievements (30), Professional Experience (60), and Contributions to the Profession (8) AND
2. a total minimum point total of 150 AND
3. 48 months of professional experience (employment or self-employment).

### Educational Achievements Component

The Body of Knowledge (DiBiase et al., 2006) provides a basis for adjudicating educational point claims by applicants to the GISCI programme. The Education Point Schedule consists of three parts:

- **Credential Points:** points earned through successful completion of a formal degree (25 points for Master's Degree or Higher, 20 points for Bachelor's Degree, 10 points for Associate's Degree; the degree may be in any field) or certificate programme (5 points for any GIS certificate with minimal 400 student activity hours).
- **Course Points:** for successful completion of individual courses or workshops. The number of earned points is proportional to the number of Student Activity Hours. If the course provides CEU (Continuing Education Units), number of student activity is given by multiplying CEU by 10. In case of missing information about CEU it should be documented by the training provider in the course description and/or certificate of completion. Only formal courses and workshops that focus specifically upon GIS science, technology, and/or applications are eligible for Course Points.
- **Conference Attendance Points:** a result of the number of total days that the applicant has spent at meetings and conferences sponsored by professional societies and regional and local user groups. The final step is to multiply the number of total days by the GISCI standing value of 0.1.

It should be underlined that the applicant cannot fulfil the minimal criteria just on standard education, because minimal 5 points has to be earned from other criteria.

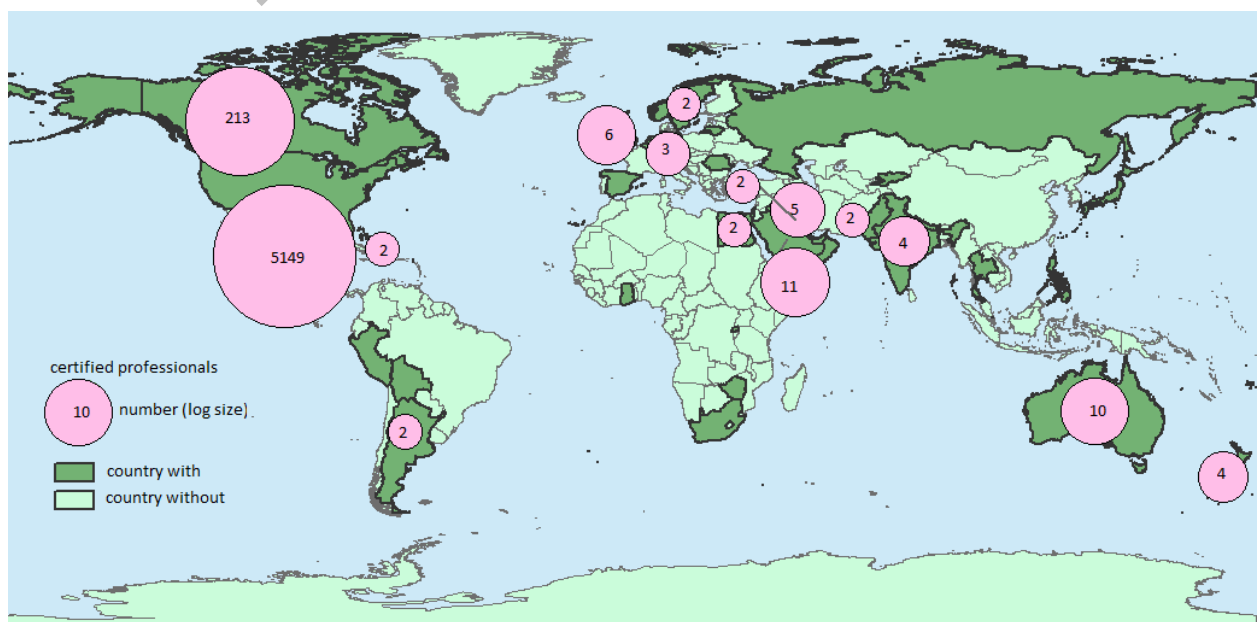


Fig. 1. Number of certified professionals in GISCI programme (28.2.2014)

### Professional Experience Component

The evaluation distinguishes different positions. More credit is given for GIS analysis and design experience than for data compilation or teaching. The Experience Points Schedule is broken down into three tiers with one supplemental “bonus” tier:

- Tier I: Points for years in a GIS position of data analysis, system design, programming, or similar GIS position.
- Tier II: Points for years in a GIS position of data compilation, teaching, or similar position.
- Tier III: Points for years in a GIS User position (an individual who employs the use of GIS technology but not in the capacities identified above).
- Supervisory Bonus: This option recognizes the responsibility of a supervisor for the work of subordinates, thereby multiplying the volume of work for which the applicant is in responsible charge.

Time is expressed in FTE%, which stands for the share of work time dedicated to documented type of activity.

### Contributions to the Profession Component

The applicant has to collect points in areas that not only benefit the applicant but also benefit the profession as a whole. There are eight major areas of involvement with points being awarded for a multitude of activities within them. It is expected that an active professional is capable of attaining a minimum of 2 contributions points per year.

The educational and professional experience components have to be documented by official school transcripts and/or supervisor letters from the current immediate supervisor or employer. In case of self-employed applicants, up to 3 client letters are required.

Each certified professional has to maintain his/her currency with the profession and document it each five years to **renew his/her certification**. The minimal requirements are 10 points for educational achievement (1 point for each 6 professional development hours, i.e. contact hours), 10 points for Contributions to the Profession (the same calculation as for the initial certification), and all together (combination of education, work experience and contribution to the profession) must reach 20 points at minimum, thus the total minimal limit for the renewing evaluation is 40 points.

The committee reviews all submissions for certification and evaluate the compliancy of the application with criteria described above. Each applicant is requested to **sign ethical rules**.

The described process can be criticised for its foundation on self-certification and dominating evaluation of time spent during education instead of evaluation of results (the assessment measures investments to the education process not its results). Some concerns are also connected with a low transparency in solving cases where some unprofessional behaviour was indicated. Even more, the formalisation of the process lead to give preferences to selected “authorised” courses against “unauthorised” courses. This approach resulted in conservation of certain accepted standard in several certification programmes, and consequently in substantially weakening in innovation.

### ASPRS

Another certification programme in USA in the field of GIS&T is organised by ASPRS (the American Society for Photogrammetric Engineering and Remote Sensing). In contrast to GISCI, ASPRS’s program exemplifies competence-based certification, in which candidates must demonstrate their mastery of a common body of knowledge within their profession by examination (DiBiase et al, 2006). Moreover, the applicant has to document relevant experiences.

ASPRS distinguish two level of knowledge and experience – professional and technician levels. The professional level is recognised for people responsible for work performed by subordinates. The technician level is declared for those people which work is primarily routine, of a technical nature, often demanding a high degree of skill, done under the direction of a professional person who is responsible for its outcome. For students without experience ASPRS offers the “provisional” status.

Certifications are provided in specialisations given in table 1, where also main requirements and the current number of certified persons are enumerated. The table documents the large diversity in the interest for certification in each specialisation, where traditional professions (namely photogrammetrists) dominate.

For each specialisation the classification chart is provided. It contains the list of main competences (tasks which can be performed).

The applicant has to fulfil following requirements (<http://www.asprs.org/>):

- to achieve indicated minimal number of years in a position and suitable type of work;

- to provide references from at minimum 4 persons;
- to declare the compliancy with the code of ethic (rules) of the ASPRS.

Upon notification of approval by the CMS Evaluation Committee, the applicant must pass a written examination. The CMS examination is designed to address the key focus areas in approximately the following ratios (<http://www.asprs.org/CMS-Certification-Program/Examination-Matrix.html>):

1. Interpret Design Documents and Requirements – 16% of exam
2. Measurement Device Knowledge – 16% of exam
3. Pre-measurement Planning – 23% of exam
4. Performing Measurement Operations – 25% of exam
5. Analysing Data and Ethics – 20% of exam

Each of these key focus areas are described in 6-14 topics.

Similarly to GISCI, ASPRS also requires regular recertification.

Table 1. Certified professions by ASPRS (29.3.2014).

Specialisation	Length of practice in photogrammetry and/or mapping (years)	Length of responsible position (years)	Length of specialised experience (years)	#experts
Photogrammetrist	6	3	-	427
Mapping Scientist GIS/LIS	3	3	3	76
Mapping Scientist Remote Sensing	3	3	3	51
Photogrammetric Technologist	3 (in any specialisation)	-	2	18
GIS/LIS Technologist	3 (in any specialisation)	-	2	6
Remote Sensing Technologist	3 (in any specialisation)	-	2	5

### European certification processes in GIS&T

Different situation is in Europe, where no such central driven initiatives exist. Basically, it is possible to use existing common systems for life-long vocational education like ECVET (European Credit System for VET) complemented by other tools like European Qualifications Framework (EQF), Europass and European Quality Assurance Reference Framework for VET (EQARF). But it does not address the issue of GIS&T complex education and certification.

GIS certification in Europe seems to be underrated, no complex approach is applied and only isolated initiatives address this issue.

Instead of development of new specific certification initiatives some authors recommend to use existing programmes like ICT European certification programmes. ICT European certification programmes are programmes developed by international professional teams on the base of requirement analysis, with several levels of certifications (basic user, professional user, special user). Salvemini (2010) offers a possibility to applied them for extended certification of GIS for SDI and INSPIRE. This approach is supported by experiences that common competences in information and communication technologies play an important role for GIS users, thus such kind of extended certification will enable to join these requirements (IT and GIS) natural way. The proposal „GIS advanced certification SDIs & INSPIRE“ covers following areas:

1. SDI general concepts (with the objective to understand SDI, SDI technologies and geo-spatial framework of services)
2. SDI and INSPIRE (basic concepts of INSPIRE directive; actors, their roles and time schedule of INSPIRE implementation, metrics of SDI usage)
3. User skills on geoportals (usage of network services, connections of web-services through GIS desktop, using of the INSPIRE metadata editor).

This extension is quite specific and creates a special course mounted on the basic computer knowledge. It does not aspire to create a complex system for well profound education and certification of GIS&T.

Similar initiatives are based on European Computer Driving Licence (ECDL). The ECDL core level contains 7 modules for common computer users. The ECDL advanced level contains 4 other IT (general purpose) modules and 1 university (IT4PS). ECDL specialised certifications are focused on specific fields, and one of them is GIS (Salvemini, 2010). AICA, the ECDL Foundation national operator in Italy, in collaboration with LABSITA, has launched GIS programme, where certification requires demonstration of competences for following areas (<http://www.ecdl.org/programmes/index.jsp?p=771&n=772>):

- Basic concepts of IT used in GIS.

- Components of GIS.
- Geodesy and topography applied to GIS.
- Concepts and techniques of digital cartography.
- Techniques for analysis and viewing in GIS.

Salvemini, Berardi (2012) organise these educational areas into three separate modules: Cartography, GIS Systems and Use of the GIS Software. Competencies are examined by a written theoretical test and by a practical test performed in frequently used GIS software. No other requirements are specified.

These two examples document complementary type of GIS certified VET in Europe. It raises concerns about motivation effect of such system (compare Ingvarson, 2013, for teaching activities). Salvemini and Berardi (2012) recommended optimising intellectual resources through nation based processes (strongly guarantying EU Dimension), but it may result in unwanted variability in the educational standards and lack of transferability. It is necessary to underline the requirement for wider certification which is based on jointly agreed principles and knowledge areas – similarly to UCGIS.

## **GIS Certification in the Czech Republic**

It was mentioned in the introduction that the GIS education both formal and informal is highly variable by quantity and quality in the Czech Republic. It can be documented by the development of tertiary education for GIS. The following simple analysis compares numbers of the full GIS programmes in Czech universities between 2001 and 2013.

The study programmes dedicated to GIS were selected as those which title contains words “geoinformatics” or “geomatics” and checked if programmes for EQF 6 or EQF 7 include more than three GIS related courses. Counts of study programmes in 2001 were adjusted because most of the study programmes in 2001 were masters programmes for five years (without Bc level), thus this long-term masters study programmes were count in both master and bachelor (EQF 6 and 7) levels. The result (fig. 2) shows significant increments of the number of programmes between 2001 and 2013 (80% for EQF 6, 20% for EQF 7, and 250% for EQF 8). Such rapid progress in quantity is unfortunately accompanied by the increased diversity of orientation (and quality, probable) due to a different background of faculties (natural science with dominant role of geography and technical faculties emphasizing data and software engineering concepts), different curricula and different competencies of graduates.

The distribution of GIS courses included in other study programmes (i.e. environmental, geography, geology) was not evaluated due to low information.

Also the number and diversity of various vocational training courses have significantly increased in the last period. Many GIS focused companies organise such courses and issues a plenty of certificates and diplomas which are difficult to compare and recognise independently. It is needed to put more transparency into this system, to evaluate objectively their contribution in the lifelong learning.

In the Czech Republic a strong need for GIS professional certification exists. The preference should be given to a complex certification similar to GISCI instead of extension of some existing IT-based certification (ICT European Certification programmes). The first question is if to develop a national version of GISCI criteria (or other international system) and implement similar certification process, or if to refrain from national certification system and support GISPS of GISCI. The support may include i.e. improvement of awareness of such certification, encouragement of our GIS professionals to submit applications, or starting initiatives to integrate recognition of this certification into various tenders and human resource policies. These 2 possibilities can be evaluated following way.

Main advantages of national system:

- possibility to adjust international criteria according national needs,
- understanding of all local documents and information (most of educational activities and related documents are in Czech and no official translation exists),
- less cost for applicants (current fees for GISCI are 250 USD for initial certification, and 115 USD renewal fees for 5 years),
- possible utilisation for improved mapping of national human resources status and development.

Main advantages of international system:

- international recognition,
- international standards,
- improvement of GIS professionals' international mobility,
- no requirements for national system (no administration system, no certification board etc.),

- elimination of biased evaluation issued by a concrete national certification board (in a small country usually less number of suitable candidates for the certification board is available and it increases the risk of biased evaluation).

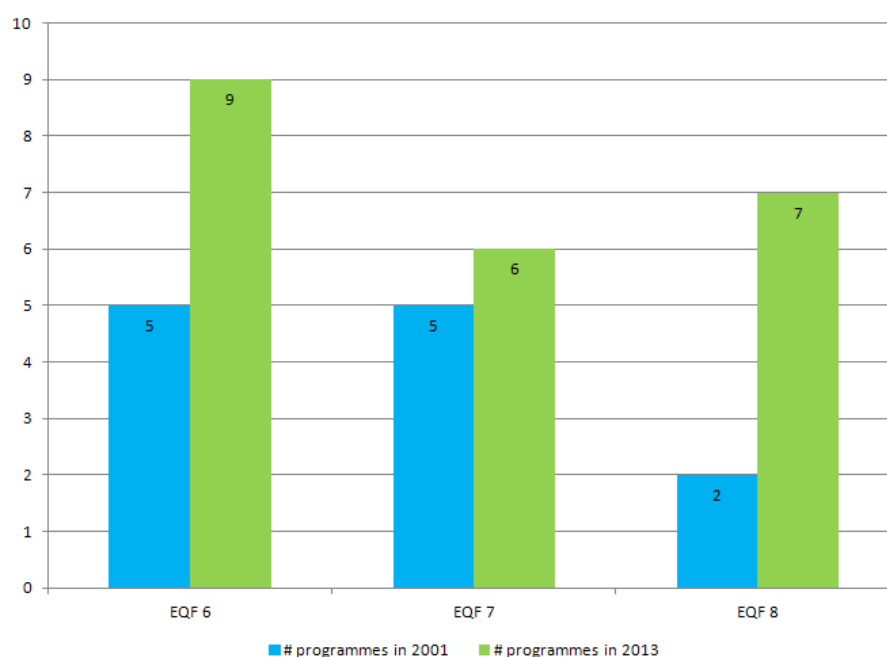


Fig. 2. Number of GIS study programmes in the Czech Republic in 2001 and 2013

The intended certification is a portfolio-based self-certification process. It is assumed to be the recommended first step for society to understand the role of GIS professional certification, to better recognise the status and development of national professionals and to establish the system of continual monitoring and improvement lifelong education and professional development. The important part of this process is the improvement of the professional ethic rules' recognition.

Undoubtedly, a competency based certification system is also required in the Czech Republic, but it should be organised only for selected professions (working positions) and the development and agreement of such system requires a longer preparation necessary to reach well-established and widely respected requirements, examination committees etc. Such system should be developed accordingly to national priorities and compatible with existing systems. One of the possibilities how to organise such competency based certification process is to use the National qualifications framework (<http://www.nsk.nuov.cz/index.php?r=63>). The aim of the NQF is to create a system environment that will support (NITVE, 2005): comparability of learning outcomes achieved by various forms of learning and education enabling recognition of real knowledge and competences independently on the way of their acquiring; comparability of qualification levels in the Czech Republic and in the EU; transfer of world of work requirements into education and training; and public awareness of all national-wide recognized qualifications. Unfortunately, GIS related standards in NQF currently practically absent. The group of "Civil engineering, geodesy and cartography" contains only standards for qualification levels No. 2-4 (Horák, 2014) representing only the secondary education. The intended extension to tertiary levels in GIS&T field will enable to well establish the GIS profession competency based certification in the frame of national and international recognised system. Nevertheless, such system should follow the portfolio based system.

## Conclusion

The field of "GIS and Technology" is strongly influenced by rapid technological innovations and changes which increases the requirements for intensive and continuous lifelong (vocational) learning. The popularity of this field leads in many countries to uncontrolled expansion of various forms of education which address different GIS&T applications and user/students requirements. The drawbacks of such diversity are difficulties in comparison, no content standards, decreased mobility of people, etc. These issues invoke strong interest to establish GIS professional certification system.

The comparison of portfolio based (type of GISCI) and competency based system (type ASPRS) showed advantages and suitability of both systems. Unlike US approach, European initiatives seem to be isolated and partial.

The arising diversity of GIS education in the Czech Republic is documented by the growing number of GIS study programmes. It is recommended to start to build a certification system with the portfolio-based, self-certification system. Advantages of national and international systems of portfolio-based certification are documented and agreement on this choice will be searched in following months. The further step will be the competency based certification which can be organised as a part of the NQF system. Currently, GIS related standards in NQF are missing. Its development will require joint effort of many experts which should be undertaken in the frame of implementation of the national "Strategy for Spatial Information Infrastructure Development until 2020".

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# The role of critical media literacy in further development of consciousness of citizenship

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## Abstract

Among the academic studies carried out in the field of communication in Turkey, attention to subject of media literacy is relatively new. When ever increasing importance of both traditional and social media is taken into account, media literacy studies present essential awareness and contributions to education of “conscious and democratic” citizens. Nowadays, mass media being referenced as a basic source of information has great importance in development of cultural, social, political, democratic conscious and especially in the development phase of culture of conscious citizenship. Media literacy, being a lifelong educational process, is an inevitable pragmatic action movement primarily for both educators and students, and in general for all citizens. In creation and development of democratic milieus, the presence of conscious, active and participating citizens gain value in the interpretation of both visual- auditory and multimedia messages and in making sense of these messages with a critical eye. Due to the fact that well-informed citizens will bring about free and democratic public opinion, each individual’s being a media literate has become a necessity for modern societies. In this context, this study opens the role of critical media literacy in development of citizenship awareness and formation of democratic-pluralistic societies up for discussion; and is aimed at exposing the reasons why media literacy education is important in decoding phase of media messages, which plays a crucial part in the constitution of information on world in which we live.

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Key words: Media literacy, citizenship awareness, democracy.

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## Introduction

Media literacy is defined as analysis of media code and traditions, as ability to criticise media’s values and ideologies, as interpretation of messages produced by media texts, evaluation of media content and being selective, being aware of effects of media and a pedagogy which enables using media luminously. (Uysal, 2007:47) One of two formative terms constituting “media literacy” word is media, and the other is mass which is able to be literate.

Common features in media literacy guidelines are listed as follows:

- 1) All media messages are constructed.
- 2) Media messages use a creative, idiosyncratic language within the frame of specific rules.
- 3) The same message can be perceived differently by different people.
- 4) Values and point of views in media are latent.
- 5) Media messages are constructed with the aim of power and commercial gain. (quoted from Baran: Türkoğlu, 2011:256)

Individuals starting to learn about media, are able to look with a critical eye at media messages they experience. To this respect, media literacy education is of help to develop critical thinking and analysis skills beyond protecting students from negative effects of media messages. It aims to teach students to ask the following fundamental questions while decoding media messages:

- 1) By whom was this message created?
- 2) What sort of techniques was applied to attract my attention?
- 3) How may other people have understood the message differently from me?

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- 4) Which lifestyles, values and opinions were included and which of those were ignored?
- 5) Why was this message sent? (Jolls ve Thoman, 2008:27)

The purpose of media literacy is to enable students to be conscious and critical literate in the face of media texts; thus, making a contribution to students' being not passive but active individuals against media. In accordance with progressively increasing student-oriented approaches, critical autonomy and active participation come into prominence in media literacy education, either.

The development of media literacy education with a critical perspective will make a major contribution to students make sense of media messages. That is to say, individuals will gain the ability to interpret media messages; hence they will recognise the differences between "the reality" and "the reality presented by media". Individuals who are critical media literate, besides reading messages circulated through media texts, will also be aware of the sources (roots) of those messages in daily life. (Binark ve Gencel Bek, 2010:103)

This awareness will enable to know what political, ideological and social structures are behind these messages. It will teach questioning how hierarchy is established in media texts through which power and dominance relations such as gender, ethnicity, class division, race discrimination frequently produced. Dominant representation practices and dominant standards of judgement have been implicitly placed into media texts, naturalized and legitimated. Therefore, necessity of media education with the intent of raising individuals who are capable of critical thinking and developing this skill in the face of structured media texts.

According to Kellner, media literacy involves knowledge regarding how media works, how meanings are established, how it serves as a cultural pedagogy form and how it functions in daily life. A media literate is a person who has good skills at analysing media codes and traditions; who is literate in reading media in a critical way and expostulating stereotypes, values and ideologies. (quoted from Kellner: İnal, 2009:96) Thus, media literacy generally research into what mass media and other means of media are, their use in education, possible effects and educational communication processes which are conducted through those means. Besides that the purpose of media literact is to raise sophisticated individuals with an ability to analyse and synthesize who read media correctly, question what they see or watch, interpret, internalize, evaluate with a critical eye. (<http://www.turkpdr.com/corner-post.php?ss=1300&w=medya-pedagojisi-ve-medya-okuryazarligi-188>) Primarily suggesting realization of fictionality of everything which is read, seen and heard in the media; media literacy, on that sense, lays emphasis on the fact that media contents are not inartificial and can be manipulated easily. Awareness of the fictionality and processes of mass communication, subjection of media messages to analytical evaluation and administering community participation lay weight on change of status quo by means of developing remunerative messages. (Türkoğlu, 2011:254-255)

### **Connection Between Citizenship Consciousness and Media Literacy**

Both traditional media and social media, much more is at the center of our life every day. That is why media literacy is needed for individuals to know the differences between the truth and structured truth and to make use of media facultatively with proper guidance. Considering the presupposition that media representations are of functional importance in establishing perceptions related to world and constructing the sense of reality; to understand media contents and evaluate correctly has become a social necessity. Becoming a conscious citizen is also one of many aspects of media literacy.

"Acquisition of knowledge and making use of acquired knowledge are basic citizenship rights. Mass media is an indispensable source for implementation of these rights. In order to live in a world equipped with messages constituted by all written and visual sources, there is need for new communication skills. Whereas newspapers, magazines, radio, television, cinema and the internet is making use of rapidly evolving technology, the citizens should be acquainted with the new concept of 'media literacy'." (Türkoğlu, <http://bianet.org/bianet/medya/84160-medya-okuryazarligi-herkes-icindir>) In order to speak of right to information and participation; first of all, the media must treat every segment of society equally and has to be voice of everybody. What is more; in order to bring citizens, who know their rights and duties in democracies, in participatory identity, firstly media's fulfillment of its public liabilities is absolutely inevitable.

Acquired knowledge from the right sources must be reliable in developing world views of citizens and in shaping their decisions. It is supposed that quantitative increase in mass media will allow for plurality; however, when we consider today's media forms, it is seen that only dominant and hegemon views have widespread media coverage. This fact constitutes an impediment against multivocality and multiculturalism; it means ignoring the cultural diversity created by differences in formation of democracy culture.

Formation of free public opinion and well-informed citizens are of capital importance for the choices and decisions required by democracy in a pluralistic and democratic society. However; nature of communication has changed in the existing sector construct based on conditions severe competition; thus, knowledge/ information flow has increased quantitatively with the impact of technological advances, while declined qualitatively, "content" issues have emerged. In our country, media is a ever evolving and ever changing, dynamic sector with 254 television channels and 1092 radio stations. These numbers which are very high compared to many



countries, draw competition/rating wars to their limits. In such an competitive environment, media has lost its fundamental function, informing and control on behalf of society and has brought entertainment to forefront as result of commercial concerns. (Treske, 2011:31) Knowledge acquired via media and its quality has been started to discuss. Critical media literacy comes into play right at this point. Critical media literacy prepares the ground for individuals to develop ethics of responsibility in civic consciousness; to participate in every kind of decision mechanism such as cultural, political and economic areas as an active actor; and to take responsibility of decisions they make.

Individuals who act in accordance with this ethic of responsibility, comprehend that common living spaces can be created without alienation each other; and respect each other. Media productions studied in a critical way as cultural artifacts enable individuals to think about their own social existence and creates a social system awareness based on equality. "Target of critical media literacy must be to help individuals to be knowledgeable about power relations, respectful towards the other, responsible citizens and to transform marginalizing values and mechanisms instead of serving to reproduce some already powerful and hegemonic values once more. For this reason, critical media literacy is closely related to development of citizenship consciousness which can read media texts with a critical perspective and be involved in production process." (Binark, Gencel-Bek, 2010:221) Further development of critical awareness and sense of social accountability are fundamental components of dynamic learning process which media literacy education redounds. Thereby we can say that it is in the intermediary position in ensuring a democratic social order and development of citizenship consciousness.

Whether they are parents or not, all adults' awareness need to be heightened against media. Basis of this awareness relies upon specifically individuals' rights and liabilities and generally their access to exact information about every topic. In this age where media is the most basic source of information, the problem of how adults as citizens overcome the obstacles in front of access to exact information such as censor, misinformation, disinformation, manipulation, propaganda, false news, made-up news, stereotypes, prejudices and perspectives. It seems difficult for the individual who cannot overcome this problem to become a conscious citizen. It is inevitable for individuals to go through an education of media literacy in order to abolish aforesaid problem and to fulfill their rights and responsibilities in a healthier way. (Altun, 2009:107) Questioning representation practices of media is one of the first steps to take in the process of overcoming the abovementioned obstacles.

Media literacy will help people to understand how media filter perception and beliefs, how it shapes popular culture and how it affects personal decisions. It will help citizens to produce and consume knowledge consciously by equipping them critical thinking and problem solving skills. Due to these reasons media literacy education becomes more of an issue in terms of speech freedom, right to information and democracy. (Pekman, 2011: 40) Individuals who has undergone through media literacy education initially adopt "critical perspective" in the educational process open to dialog and participation, and recognise every kind of inequality relations in construction of social reality. Therefore, they may have access to information on what kind of structures lie behind the contents of media messages through which social life is established, and may reach a awareness and accountability level which will contribute to ensure democratic social order. Realization of social disparities which are produced and circulated through media representations only happen by receiving a media literacy education. For a more egalitarian social order, having a command of contextual knowledge of political economy lying behind the production processes of media means a huge step for the sake of being a conscious citizen. That is why, critical media literacy education provides an area of study full of opportunities in front of us.

Critical media literacy is a process nurturing educational environments which lead to ask questions and constitute social and political awareness. By the very reason it has the potential to prepare a ideational framework in the wake of being a conscious citizen. It bears much importance in the sense of enabling to be viewers / listeners / readers who are able to ask critical questions on what we watch, read, listen to. Because it is our responsibility to know with a critical point of view, as responsible individuals of civil society, to what we are exposed through media messages, what to filter, what to internalize, what to reject and what deductions we will make from the information we gathered in the face of intensive flow of information. (Treske, 2011: 34)

## CONCLUSION:

Considering the ever-increasing effects of media, all the academic studies towards the field of media literacy present enormous contributions to both child development and raising "conscious, active and participant" citizens. Critical media literacy is one of the important opportunities for more democratic media and more democratic culture of society. As citizens who gain the information of the world in which we live from media, they may be building blocks and transformer of democratic civil society only when they have high level awareness and sensitivity. One of the important ways of eliciting that follows the road of a lifelong media education prevailing critical pedagogy insight and being media literate. Media education which can present multi-directional perspectives in the way of being conscious citizens who are capable of critical thinking and

analyzing thousands of messages we are exposed everyday in the information age is an field of study which may provide with major contributions to constitution of stable democratic environments.

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# The role of identity development on latent and manifest prejudice: the perception of immigrants in Italian university context

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## Abstract

Our membership in the human race is questioned when the differences are categorized and labeled in a classification system. The other one, especially if different or foreign, is represented as a total alterity and/or as a subject/object to assimilate. Each identity is a particular story, developed continuously, through perceptions, feelings, thoughts, speeches and symbolic interactions. Human identity is potentiality contamination and mixing. The "new paideia" promotes and urges change, because when the subject is being placed in an *ante rem* (the stereotype or stigma) loses his/her dynamism and is being deprived of his/her identity.

The study examines the predictor variables to the latent and manifest prejudice, and relationship between identity development and prejudice. The research involves 187 Italian college students (aged between 18-23 years). They completed: *Ego Identity Process Questionnaire* (Balistreri, Busch-Rossnagel, and Geisinger, 1995), *Latent Subtle and Blatant Prejudice Scale* (Pettigrew and Meertens, 1995). As hypothesized, there is a different identity development due to the age variable, and a variant level of prejudice related to the gender but not age; the results show, confirming the hypothesis, the presence of a correlation between ideological domains such as religion and politics and the level of manifest prejudice.

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*Keywords: Identity development, Manifest Prejudice and Latent Prejudice.*

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## 1. Introduction

The integrated and coherent set of different images and the representations that each person has of himself/herself constitute the feeling and perception of identity, in its dual aspect of personal and social identity (Salmeri, 2001).

Our common membership of the human race is being put seriously into question when innumerable divisions are categorized into a classification system, boasted as the best or dominant, because it selects and categorizes people on the basis of religion, culture, nation, considering each of these factors as the only valid criterion for that particular context.

The other one, especially if different or foreign (Salmeri, 2013) is represented in terms of a total alterity and/or as a subject/object to absorb, neutralize, and thus to normalize for the sake of a supposed superiority. In a intercultural perspective, however, humans are different: subjects cannot be distinguished only by religion, nation and culture, but also according to social class, gender, profession, language, morality, ideas policies, and science. The Belonging to the "human race" cannot delete the multiple identities that characterize; identity is neither a good nor a bad thing, but it can be good or bad depending on how we interpret it.

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### *1.1. Identity, relationship and education*

In order to recognize the identity of the foreigner and facilitate the processes of inclusion is essential to avoid the institutional stickiness, which makes integration a purely formal act. Things should be done together with the other one rather than towards the other one, focusing on a logic of decentralization and divergent thinking. Identity is not understood in a single effort because even when an important finding about themselves is done, it is still possible to bring out unknown aspects. Each person belongs to multiple social groups and interacts with them, this fact shows the diversity of the identity of each individual. Our choices are made within particular constraints dictated by the culture, mentality and even prejudices.

In this context, Pettigrew and Meertens (1995, 2001) carried out a cross-national study in seven independent national samples from western Europe, and measured “subtle” prejudice and “blatant” prejudice. Subtle prejudice was considered as a hidden form of prejudice, providing a positive public image and useful to build a self-representation suitable for the principles of socially accepted tolerance; blatant prejudice corresponded to an attitude rejection toward minority groups, not explicitly influenced by social desirability (De Caroli, Falanga, and Sagone, 2012).

Biologically we present a few differences, whilst in terms of the individual narrative we are unique, because we are unique stories, which are defined in a complex relationship. Each identity is a particular story, developed continuously, through perceptions, feelings, thoughts, as well as through speeches, symbolic interactions and memory. The memory is fundamental and foundational principle for the use of posterity, and it acts as an antidote to the cancellation of its existence, as there is a link between the memory passed on from generation to generation, and the personal and collective identity (Salmeri, 2012).

Even the stranger, therefore, has feelings and expresses values, which must be recognized, heard and deciphered in genuine respect of the actual educational needs.

The education and the recognition of Otherness (foreign or different) are to be considered for democratic pedagogy an exercise of orthodoxy, which materializes in a coherent and organic practices, which becomes real heresy and transgression of common and established ways of thinking and understanding the difference (Genovese, 2000). By Don Milani we learned that you need to make way for last people and do not make way through them, because, according to the paradigm of paradox, it takes refine educational process as well as it takes to lie to tell the truth (Balducci, 1995).

Teaching and learning are functional to build a shared and meaningful knowledge. Life gets inside the school and a lot of other educational agencies, since nothing is gained for ever: the need for research, the need for change and the anxiety of adaptation are therefore constituent parts of education. Convergent thinking is a typical characteristic of the logic, whereas divergent thinking involves the breaking of the fixity and fosters creativity (Bruner, 1968).

Mind is collectivist and not isolationist, thus consolidating knowledge through routes and itineraries of relationship and not through individual elements out of context. Any attempt to stigmatize, and/or categorize Otherness is therefore not only anti-democratic, but it is also anti-pedagogical.

We are condemned to live in a society of strangers, men without qualities, if freedom and solidarity continue to be contradictory and unknown terms. According to Illich (1985), the social division of labor and solidarity are incompatible principles. Questions about human needs focus on human obligations, because in the process of recognition of Otherness the respect for human rights and the promotion of the dignity of each person are fundamental. We identify, therefore, our common humanity in our difference, our individuality and our history, faithfully observing, in mutual recognition, our particular culture based on reciprocity and obligations. There is not a distinct, recognizable and codified identity in our universal nature of men, but only in concrete reality of different subjects.

Being humans, therefore, is a conquest that democratic pedagogy, prophetically, wants to carry out in the “here and now”. The new “paideia” promotes and urges change, because when the subject is being placed in an ante rem (of the stereotype or stigma) loses his/her dynamism and is being deprived of his/her identity and development, transforming in a stable reality or, perhaps, stabilized. The static identity as hypertrophy of identity is the negation of the past and the deprivation of any projection towards the future.

No man is an island in itself, with no doors or windows, as he is also a hyper-ordered structure in its being complex (Salmeri, 2003).

### *1.2 Identity development and level of prejudice*

Prejudice and institutional racism are common factors influencing the personal identities of both those who have benefited from White privilege. One’s identity has a major influence on how they perceive others, their

self-esteem, self-confidence, aspirations, motivation, and effort expended in various aspects of their life (Smith, Walker, Fields, Brookins, and Seay, 1999). When schools don't aggressively try to facilitate positive identities by all their students, including their racial identity, there are consequences (Pellerone, 2012).

Racial identity is an important part of one's overall identity. According to Ponterotto (2006), the White racial identity development process involves coming to terms with one's own unearned privilege in society. In 1995, Janet Helms developed six stages of White racial identity development:

- I. *Contact*: the individual adheres to the "colorblind";
- II. *Disintegration*: the person has new experiences which confront his prior conception of the world and because this conception is now challenged by this new information or experience;
- III. *Reintegration*: characterized by a "blame-the-victim" attitude;
- IV. *Pseudo-independence*: the first stage of positive racial identification;
- V. *Immersion/emersion*: individual makes an attempt to connect to his/her own White identity and to be anti-racist;
- VI. *Autonomy*: characterized by clear understanding of and positive connection to their White racial identity.

Heeson (2010) shows relation between identity and white racial identity development, in particular, according to the White Racial Identity Development Models, adolescents who are crossing identity *diffusion status* are characterized by no social consciousness, disintegration, pre-exposure, and conformity; according to the White Racial Typology Model, adolescents in diffusion status manifest racial justice, that is conflictive and reactive type.

Adolescents with *achieved identity*, according to the White Racial Identity Development Models, are characterized by internalization, autonomy, redefinition and integration, and integrative awareness.

Adolescents who are crossing *foreclosure identity status*, according to the White Racial Identity Development Models, manifest resistance, re-integration and pseudo-independence, conflict and antiracism, dissonance and resistance; according to the White Racial Typology Model, they are dominative.

*Identity Moratorium*, according to the White Racial Identity Development Models, is characterized by acceptance redefinition, immersion and emersion, retreat into white culture, and introspection; according to the White Racial Typology Model, this status presents racial acceptance, that is dominative and integrative type.

## 2. Materials and Method

### 2.1 Aims and Hypothesis

Aims of this study are:

a) to analyze the predictor variables to the latent and manifest prejudice (according to the Pettigrew and Meertens' Model);

b) to examine relationship between prejudice and identity development, measured through the Marcia's Model (1989), which classifies identity in four profiles: Achievement (the individual makes an identity choice after investigating the possible alternatives through experimentation); Moratorium (characterized by tension and exploration on the different alternatives); Foreclosure (the individual clings uncritically to the first identificatory models without experimenting with alternative ones); Diffusion (typical of those who effect superficial experimentations, without reflections).

We assume that, according to literature (Pellerone, 2013), older students exhibit a greater identity development compared to younger students.

It is assumed that, as regards the level of the prejudice, there is a significant difference owing to gender and age variables, and in particular it is assumed that girls present, lower level of prejudice, both subtle and manifest, than those ones expressed by males, as confirmed by national literature (Manganelli Rattazzi and Volpato, 2001; Volpato and Manganelli Rattazzi, 2000); and that older students express a positive outgroup representation than younger ones (De Caroli, Falanga, and Sagone, 2012).

Investigating the studies in the literature that identify a correlation between interpersonal dimension and prejudice (Pettigrew and Meertens, 1995; Vorgelegt, 2009), it is hypothesized the presence of correlation between domains of family, friendships and capacity to enter into sentimental relationships with low level of manifest and subtle prejudice; and the presence of correlation between ideological domains that is religion, occupation and politic with the level of prejudice.

Furthermore, confirming the literature (Pettigrew et al., 1998) psychological factors of prejudice are assumed to operate in a similar way and regardless of the target groups, that is the groups towards which greater level of prejudice is perceived.

The aim is also to investigate the predictor variables of prejudice, hypothesizing, as confirmation of the

literature, that among the predictors of the level of manifest and latent prejudice we find the following: I) level of identity exploration and commitment; II) importance attached to interpersonal and ideological domains; III) type of racial group who is facing the prejudice.

## 2.2. Subjects

The research involved a group constituted by 148 Italian university students, i.e. 32 males (17.1%) and 155 females (82.9%) aged between 18 and 23 ( $M=18.98$ ;  $S.D=1.25$ ); with reference to the varying faculty, the participants were subsequently divided into:

- a) a group constituted by 133 subjects (72.1%) who are attending the Faculty of Psychology;
- b) a second group formed by 54 students (28.9%) who are attending the Faculty of Primary Education Science.

With reference to the varying age, participants were subsequently divided into: a) a group of 103 subjects (55.1%) aged between 18 and 19 ( $M=18.99$ ;  $S.D=0.99$ ), i.e. 75, who are attending the Faculty of Psychology and 28 the Faculty of Primary Education Science; b) a group of 84 students (44.9%), i.e. 58 who are attending the Faculty of Psychology and 26 the Faculty of Primary Education Science, aged between 20 e 23 years ( $M=20.98$ ;  $S.D= 1.14$ ).

## 2.3. Measures

The instruments administered to both groups of students are: Ego Identity Process Questionnaire (EIPQ) and Latent Subtle and Blatant Prejudice Scale.

- *Ego Identity Process Questionnaire* is a tool by Balistreri, Busch-Rossnagel and Geisinger (1995), serving to investigate identity status development according to Marcia's Model. It is a scale constituted by 32 items, that investigates the dimensions of exploration and commitment as distinctive elements. The Exploration level is measured through the analysis of four ideological domains: occupation, religion, politics and values; the Commitment level is investigated through four interpersonal domains: family, friendships, gender roles and capacity to enter into sentimental relationships. Balistreri and collaborators (1995) report the estimates of internal validity of the tool: .80 for the results that indicate commitment, and .86 for the scores that indicate exploration; the scores that indicate reliability are .90 for commitment and .76 for exploration; the internal consistency is .72 and .71 respectively for commitment and exploration.

- *Subtle and Blatant Prejudice Scale* by Pettigrew and Meertens (1995) in the Italian version by Arcuri and Boca (renamed Latent and Manifest Prejudice Scale, 1996). It is constituted by 20 items, divided in two subscales, that is 10 items to explore the subtle prejudice, divided in: defence of traditional values, exaggeration of cultural differences and denial of positive emotions; 10 items to analyze the blatant prejudice, structured in threat and rejection and anti-intimacy.

Pettigrew and Meertens' scales classify individuals into three different categories:

- *Fanatics*: subjects with high scores on both scales tend to discriminate against the out-group in a manifest and subtle way;
- *Egalitarian* (or Democrats): who has a low propensity to discriminate in a subtle way should also show a low propensity towards open forms of prejudice;
- *Thin*: individuals who do not openly express prejudice against the out-group, are ready to manifest it if they have a socially acceptable way at their disposal.

## 2.4. Data Analysis

The Univariate Analysis of Variance (ANOVA, one way) is used to measure the influence of age on identity development; the Manova, design of type 2 (Gender) X 2 (Age: 18-19 vs. 20-23 years), is done to verify the influence of the independent variables on level of prejudice. The Pearson's correlation is used to assess the relation between identity development and level of prejudice. To verify the absence of influence of the target group on the level of latent and manifest prejudice is done the univariate analysis of variance. In order to explore the predictive variants of prejudice, Analyses of Hierarchical Regression for Separate Blocks is used.

## 2.5 Preliminary analysis: the immigrant groups

In reference to the first open question "When you think about non-EU immigrants, what is the first ethnic or racial group that coming to your mind?", that is groups towards which they express a greater prejudice: the

largest group indicated is that of moroccans (40.1%), followed by blacks men (33.2%) and romanians (7.5%).

The three categories of immigrants identified by Pettigrew and Meertens's scales are: fanatics, egalitarian and thin: the frequency distribution shows that 26.7% manifests high level of latent and manifest prejudice (fanatics); 26.7% have an high latent prejudice but a low manifest prejudice (thin) and only 23% are egalitarian subjects, with a low level of prejudice.

All subjects showed higher levels of subtle ( $M = 33.30$ ,  $S.D = 6.69$ ) than blatant prejudice ( $M = 29.07$ ,  $S.D = 6.68$ ) ( $t(186)=59.50$ ,  $p<.001$ ), and this result was a confirmation of theoretical assumption indicated in Pettigrew and Meertens' model (1995).

### 3. Results

The study examines the predictor variables to the latent and manifest prejudice, and relationship between identity development and prejudice.

From the analysis of the frequency distribution on the basis of identity development, the following emerges: 34.8% of the students are going through the achievement identity status, followed by 28.3% with a diffusion status and 20.9% with a foreclosure status.

ANOVA underlines a main effect linked to the age variable on identity development ( $F(1, 186) = 7.87$ ;  $p < .01$ ). The breakdown of the univariate effects shows that group a (younger students) manifests lower level of identity development than group b (older students): in particular older students ( $M = 12.05$ ,  $S.D = 3.50$ ) give greater importance to the work than older students ( $M = 10.92$ ,  $S.D = 2.61$ ). The first research hypothesis is confirmed, according to the literature (Pellerone, 2013).

A factorial multivariate variance, of type 2 (Gender) X 2 (Age: 18-19 vs. 20-23 years), was done to verify the influence of the independent variables on level of prejudice; data analysis underlines a main effect linked to the gender variable ( $F(1,186)=14.22$ ;  $p<.001$ ), and no effect due to age; the breakdown of the univariate effects shows that boys obtain significantly higher values than girls in the manifest prejudice (Males:  $M = 33.33$ ,  $S.D = 1.26$ ; Females:  $M = 27.21$ ;  $S.D = .51$ ). These results confirm partially the second research hypothesis.

In reference to the third research hypothesis, concerning the presence of correlation between prejudice and identity development, the Pearson's correlation shows how the level of manifest prejudice is positively correlated to the stereotype of gender ( $r = .19$ ,  $p < .01$ ), and negatively to the work ( $r = -.16$ ,  $p < .05$ ), and the level of latent prejudice is positively correlated with the ideological dominance of religion ( $r = .16$ ,  $p < .05$ ) and negatively with personal values ( $r = -.23$ ,  $p < .01$ ) and interpersonal relationship ( $r = -.17$ ,  $p < .05$ ). These results confirm the research hypothesis.

Another objective is to verify the absence of influence of the target group (i.e. the group towards which students perceives a greater prejudice) on the level of latent and manifest prejudice. The univariate analysis of variance shows us the main effect of the "ethnic group" factor both on latent prejudice ( $F = 2.33$ ,  $p < .05$ ), and manifest prejudice ( $F = 2.81$ ,  $p < .01$ ); particularly the highest level of manifest prejudice is expressed towards Albanians ( $M = 31.40$ ;  $S.D = 2.19$ ) and black men ( $M = 30.77$ ,  $SD = 6.26$ ); the greatest latent prejudice is expressed towards the Romanians ( $M = 38.50$ ;  $S.D = 8.22$ ) and black men ( $M = 30.32$ ;  $S.D = 4.62$ ). These results refute the fourth research hypotheses.

Finally, we wanted to investigate the predictor variables of prejudice, hypothesizing, that among the predictors we find the following the identity development (identity commitment and exploration), the importance attached to values, religion, family and relationship. The analysis of Hierarchical Regression with separate blocks shows that level of exploration and commitment has no significant effect, but ideological and interpersonal domain (second block) have significant effect on manifest and latent prejudice. Particularly, predictors of the level of manifest prejudice are: work ( $\beta = -.56$ ,  $p < .01$ ), religion ( $\beta = -.26$ ,  $p < .01$ ), politics ( $\beta = -.41$ ,  $p < .01$ ), personal values ( $\beta = -.38$ ,  $p < .01$ ), friendship ( $\beta = .31$ ,  $p < .01$ ), gender stereotype ( $\beta = .41$ ,  $p < .01$ ), which account for 44.9% of the general variance.

Predictors of level of latent prejudice are the following: work ( $\beta = -.26$ ,  $p < .05$ ), personal values ( $\beta = -.51$ ,  $p < .01$ ), interpersonal relationship ( $\beta = -.25$ ,  $p < .05$ ), accounting for 41.4% of the variance. These results confirm the research hypothesis.

### 4. Discussion

According to Pettigrew and Meertens's theory, based on the distinction between forms of latent and manifest prejudice, participants are divided into three groups: fanatics (26.7%), thin (26.7 %) and egalitarian (23%). The group most frequently mentioned is the Moroccans one, followed by the black men and Romanians one.

Different levels of prejudice have been detected in relation to the target group, in fact Sicilian students show

the highest level of manifest prejudice against the Albanians and black men, and the highest level of latent prejudice towards Romanians and black men.

In reference to the identity development, most of the students are classified in achievement, and this variable is influenced by age: in fact, confirming the hypothesis of the research, older students have a greater identity development than younger students. As regards the level of preconception, data show that boys have a greater prejudice than girls, confirming the hypothesis of research.

The correlation between prejudice and identity development shows that: students with an high level of manifest prejudice attach little importance to the work and, above all, they have a strong gender stereotype, therefore they are prone to discriminate people by gender and breed; students with an high level of latent prejudice are strongly influenced by their religion, but they attach little importance to values and quality of interpersonal relationships.

Finally, manifest prejudice is anticipated by little importance attached to the work, religion, politics, personal values and strong attention to gender stereotype. The latent prejudice is also foretold by little emphasis on work, personal values and, in addition, interpersonal relationships. These data confirm the research hypothesis.

## 5. Conclusion

Our world feeds mainly on simulations, and often reality is a copy of other simulations, not existing as original element. The reason is transformed into meta-logic structure, which promotes and encourages the rationalization of the irrational to induce the compulsive consumption of any product, useful or not, dangerous or less (Ritzer, 2000). The rationalization of consumption produces illusion (Bauman, 2011).

The inhabitants of the world of "welfare" are consumers of goods and services, but the weakest, foreigners and different are cut out and placed on the margins. The excluded are thus deprived of freedom and choice. Acting, however, is choosing and choice is characteristic of the human being (Berlin, 2005). The most serious crime is the exploitation of man by man, which produces dehumanization. The man becomes a man among men and grows in the relationship, for which the construction of intercultural education is in the processes of participation and dialogue.

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# The role of philosophy in the life of a student of a technical university

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## Abstract

The modern era is the era of highly developed technique and technology. In contemporary society, unfortunately, the problem of spiritual and moral value attitude becomes actual problem among the youth. We know that material values (or wealth) take a priority (or important) place in the life of youth. It is a requirement of the market relations of the modernity. It is known that philosophy is not an important component of modern man as material wealth.

The aim of this paper is to show the role of philosophy in life of students of a technical university. It is well-known that the philosophy is the theory based on practice. A student who forms his spiritual principles can adapt and socialize in a society without strong stresses.

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*Keywords:* student; philosophy; sociocultural adaptation; value system; modern era.

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## 1. Introduction

The main goal of every university is to prepare highly educated, enterprising and competitive specialists in accordance with existing and future needs of the individual, industry, society and the state. In any university (academies, institutes) the learner one can satisfy their needs, namely:

- Cognitive needs (to know, to be able, to understand, to investigate);
- The need for self-actualization (achieving its goals, abilities and development of the personality).

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This is the highest level in the hierarchical system of human needs, compiled by the American psychologist Abraham Maslow, the so-called "the pyramid of needs". People receive higher education. Education provides a solution to the most important government tasks:

- To improve the safety of the country,
- To train for all areas of the economy,
- To increase the intellectual level of the population.

The most important task of higher education is the formation of a highly educated person, general and professional competencies, and the formation of creative thinking and the ability of the system to ensure sustainable human existence in terms of scientific and technological progress. Quality of an educated person and general competence can be acquired only after mastering fundamental and deeply humanitarian basis of the chosen specialty. "Cultural and humanistic mission of the university is to create conditions for the development of free and responsible personality with creative and critical mind, intellectual and moral potential. The key principles of the modern university are a freedom, creativity and a criticality. A freedom and creativity are impossible a critical attitude towards life; the reality is manifestation of doubts about their authenticity and

validity” [1].

The pace of modern production processes and the current pace of technology updates are accelerating.. Generations of automobiles are replaced quicker, than generation of people and it demands continuous updating of knowledge of the engineer, his/her continuous education and self-education. Ability to fill up and update the knowledge, independently to study is connected with accurate orientation to the necessary information in the huge information massif. It is possible only with vision of all field of scientific and technical progress, definition of its main directions and development tendencies. It requires a philosophical worldview orientation engineer corresponding logic of his/her thinking and innovative its orientation.

Also note that in whatever incarnation not acted equipment, its operation aimed at realizing the goals set by people. As a means for society to achieve certain goals, engineer equipment acts as a goal of its activities. Creating a particular artifact engineer implements the intended purpose is to provide a certain process.

## **2. A goal and a role of philosophy in the life of a society**

Philosophy has always played a special role in the establishment and formation of the outlook of a person. Philosophy is the main function of the orientation of a person in the world of nature and society. Everyone in some point in their life is facing the need to choose and thereby exercises his freedom. Philosophy designed to help him make the right choice. Philosophy turned to the world of values, creates value theory to solve this problem. It philosophy provides a scale for assessing phenomena establishes a hierarchy of values and promotes their revaluation in a changing world.

The history of mankind is knowledge history it itself and world around, which is based on practical activities. Now there are profound changes in the content of public practice in the conditions of search of the solution of new problems and therefore there is a need of development of the theory which has to not only reflect correctly, but also define an orientation of modern social development.

Philosophically minded person imagines the main trends of the development of the world, society and knowledge. The person can also correlate his/her life with these trends and to understand his/her place in this development. Philosophy forms the worldview of people, as it largely determines their behavior and approaches to decision-making in particular problem.

Philosophy plays a significant role in solving global problems. Its main function is to form a world view, also have an indirect influence on the development of practical solutions. The philosophy forms outlook, sets valuable installations which define an orientation of human activity:

- Its generalizing theories are essentially necessary since promote integration of scientific knowledge.
- It forms most the general laws of development of society and the nature.
- There is an opportunity to see the general tendency of development of global problems, dynamics of their interaction and interdependence.
- The philosophy gives the chance to develop culture of theoretical thinking.
- Result of vision and interpretation of the historical process is the possibility of a clear orientation in the flow of scientific information on global issues.
- The philosophy raises questions of meaning of the life of the person, death and immortality.

Philosophy identifies and develops the meaning of human actions and behavior, forms strategic goals. The theoretical philosophy is constructed by the principles close to science. The philosophy as a whole in unity of all its genres unites science and culture, integrates all types of spiritual activity and promotes integrity of thinking of the expert and integrity of his culture. We think that it is its main destination as a humanizing factor of the higher education. Earlier training was connected with translation knowledge which were transferred orally or in writing. Then knowledge was enshrined in practice and allowed to decipher a meaning of practical research actions. In the modern world the independent person becomes the most responsible link of development. He/she and his/her intelligence can hold and balance through practice contradictory tendencies of development. Modern practice, i.e. everyday practice of life is associated with reduced risks of development. It is known that the acquisition of knowledge has to be accompanied not only by their accumulation, but also the ability to quickly update and even create new ones.

It isn't excluded that safety, i.e. fall of risks of development becomes one of the major principles and components of development of educational technologies. This is not an element of fear or phobia; on the contrary it is a form of recognition that a person is open to external influences and for influences of the environment (i.e. culture) which is created by person. This influence is interaction of the person and the world, which was initially problematic and only the person with a power of his/her intelligence (knowledge and practice) is capable to balance all circumstances.

The philosophy generalizes achievements of science, relies on them. Ignoring of scientific achievements

would lead it to triviality. But development of science happens against cultural and social development. Therefore the philosophy is urged to promote a science humanization, increase of a role of moral factors in it. It has to limit unreasonable claims of science for a role of the only and universal way of development of the world. It correlates the facts of scientific knowledge to ideals and values of humanitarian culture.

Studying of philosophy promotes increase of the general culture and formation of philosophical culture of the personality. It expands consciousness: for communication the consciousness width, ability to understand other person or as though from outside is necessary to people. The philosophy and skills of philosophical thinking helps with it. The philosopher should consider the points of view of different people, critically to comprehend them. Spiritual experience which promotes consciousness expansion is so saved up.

### **3. Engineering thinking as the main feature of engineering students**

The development of technology is the main component of social development. Engineering activity acts as the main source of technological progress. It is in the qualitative transformation of engineering and technology is the main function of engineers, but perfecting the technique and technology, engineers influence change relationships that develop between people in the direct production process and therefore affect the development of the main productive force - on people. Thus, the engineering activity occupies a central place in the whole system of technical activities.

Modern technical activities in relation to the engineering bears the executive function. Engineering same activities go beyond just technology. It involves the regular use of scientific knowledge, this is another difference from technical activity that is more based on experience, practical skills, guessing.

The main task of the engineer is:

- The transformation of the natural into the artificial;
- Transformation of substance, energy and information.

His/her ultimate goal, he/she sees in the use of the properties of objects related to the practice of creating and organizing techno-structure technologies.

Activity of the engineer is directed on creation, improvement and development of technical means, technologies and engineering constructions. This activity has both productive, original, creative, and reproductive, not creative, repetitive, stereotyped components.

In formation of engineering activity the important role was played by subject practice and its main type – production of goods, production of means and instruments of labor. Initial forms of engineering arose in a subsoil of technological activity, and longtime existed together, rendering favorable interference. Recognition of that fact that on the basis of technological activity are created equipment and different constructions are dictated by need of carrying out differentiation, a peculiar line of demarcation between technical and engineering activity. Identification of specific distinctive signs of engineering work contacts the analysis of the main structural components of activity. Carrying out the activity, the engineer transforms the natural and social environment, satisfying various technical requirements of society. This transformation is always defined by essential communications, laws of change and development of objects, and activity can be successful only when it will be coordinated with these laws.

Feature of engineering activity is its creative character. Creativity is understood as the process of human activity creating qualitatively new material and cultural wealth. Creativity represents arising ability of the person from a material delivered by reality to create on basis knowledge of regularities of the objective world new reality: satisfying to diverse public requirements. Types of creativity are defined by nature of creative activity.

Philosophy function in activity of the engineer is visible at achievement of concrete technological result in consciousness of the engineer the displayed abstract model of subject structures of practice is fixed.

At detection of the main features of the engineering activity distinguishing it from other forms of subject practical activities, first of all production and technical, it is necessary to define accurately its distinctive signs among which main are: research on the basis of the systematized knowledge of properties and characteristics of subject structures of practice for the purpose of transformation natural in artificial, transformation of substance, energy and information for identification of optimum structural and functional interrelations of created engineering constructions, technical means and organizational forms of technologies.

Opening an originality of "engineering thinking", it should be noted some important features inherent in any logical display of reality. The general for all types of thinking is that they reflect requirements of public system. The thinking of the engineer, as well as other types cogitative acts of the person is, in detail, directed on mastering of a subject of requirement and by all means includes knowledge of future technical object. The anticipation is one of the main components of any thinking. The engineer mentally anticipates not only achievement of the purpose, but also a way and ways of use of all arsenals of cash.

In the content of engineering thinking includes signs of physical processes that characterize the properties,

functions, structural features of the hardware; thinking engineer determined by social factors such as anatomical and physiological parameters of human action and the area of social functioning of a technical object. Thinking engineer is largely determined by the subject area of the functioning of a technical object. Adopting and implementing technical solutions engineer not to rely on their skills, abilities, production skills, intuition, but also on a wide range of socio-cultural knowledge, showing ingenuity and resourcefulness.

The engineering thinking is a specific form of active reflection of morphological and functional interrelations of subject structures of the practice, directed on satisfaction of technical requirements for knowledge, ways, receptions, for the purpose of creation of technical constructs is inseparably linked with the main form of practice, i.e. production of goods: design and design tasks have especially practical character, are directed on search of structural and functional interrelations of properties of objects of subject practice.

The engineering thinking is an ability to connect images, representations, concepts, to define possibilities of their application, ability to solve arising problems, to prove conclusions and the decisions concerning creation and operation of equipment. And the engineering thinking is not only a theoretical form of reflection of reality in the form of concepts, hypotheses, and theories. The engineer constantly solves with his help also practical problems. It occurs when it should apply general provisions and concepts to the single, concrete phenomena that most often and is observed in everyday practical life.

If the thinking of the scientist is directed on an explanation of the phenomena which the person faces for the first time, on development of new theoretical means of human activity, thinking of the engineer is directed on the solution of practical problems of the same activity. The practical orientation of engineering thinking generates mobility, functional mobility, and fast change of its contents that is caused by direct response to inquiries of practice. All this is among features of engineering thinking. But its features are shown also in those principles on which it is based.

As A.I. Rakitov [2] considers, the engineering thinking is based on three important principles: 'machine,, serialism, and rationality. They should be understood so. The machine means that the developed engineering thinking is formed in the conditions of mechanical production as thinking concerning development and operation of various cars, mechanisms and devices. Where the engineer worked – at the industrial enterprise, on construction, on transport, in agriculture, – it everywhere deals with cars and mechanisms. Serialism or reproduction is shown that the engineer seldom deals with any unique, single or at least small-scale products of production. Most often the products in which the engineer is involved, are intended for mass consumption. Even at construction of buildings and other constructions according to individual projects after all serial materials are in many respects used. At last, the engineering thinking is entirely rational. Though the engineer also should use special terms, formulas, calculations, but all the same they are clear and available to other workers with whom the engineer deals. His thoughts are embodied in knowledge and various data which are deprived of any mystery (if, of course, aren't connected with military or state secret) and standardization for convenience of their distribution and use is subject.

Very important line of engineering thinking is also systematic that is quite natural as almost any a little difficult product consists of considerable number of interacting parts, details, and even units. New materials and mechanisms can't be created without system approach. In even bigger degree systematic is required at creation of huge transport, irrigational, communicative systems. Need to consider ecological, ergonomic, social, and psychological and other consequences at their construction does engineering thinking by the main generator and the systematic accumulator.

#### **4. Philosophy in the life of engineering students**

In fact, the philosophy should help the personal development of the student, his formation as a specialist. Who also serves on the professional level required not only private production targets, but also non-alienated from the universal problem and essential understanding of the world from the spiritual world, ethical and aesthetic values. Personal development of the student has to be focused also on activation of reflexive thinking as most important way of formation and preservation of individuality. Actualization of the individual origin allows a person to make a conscious choice and take responsibility for it in terms of progressive massovization, globalization and steadily increasing social uncertainty.

Realities of the beginning of the XXI century, the prospects of civilizational development in the third millennium, the problem of humanization of education, the formation of "advanced" education objectively bring to the fore training of the specialist his/her personal development. If until recently in the course of education the task of formation of the personality was set, whose professional, social and psychological, motivational shape was determined by external conditions, whose interests were in many respects leveled by interests of society, now it is absolutely necessary to promote in the course of education to formation of the nonconformist personality capable of self-realization and self-updating up to not of confrontational, but tolerant opposition of to the social environment.

Engineering activity is usually associated with modified versions of basic sciences. The modification consists

in the fact that fragments of basic sciences, applied importance, converted in theory, allow you to perform engineering calculations and designs. Therefore, any engineering discipline contains fundamental core. The task of the student - is to identify the main, fundamental knowledge from various disciplines to be able to generalize them and apply to various practical and research activities. Cope with this task help specific training courses, as the natural sciences, and, no less important, humanitarian and socio-economic. All disciplines of the curriculum courses form a single system, internally consistent with each other so that together they allow for the preparation of highly qualified and widely educated specialist.

Engineer, not realizing the social importance of their activities, acts not as a creator, but as a simple performer, craftsman. Overcoming of this professional limitation assumes an exit out of limits of those concepts which are connected only with creation of artifacts, technologies, overcoming of technocratic thinking, orientation to a social scope, social and philosophical judgment of the technical practice.

The engineer carries out not only design-technology, but also social function, i.e. he is the head of a certain work collective, has to operate it, be able to work with people, to communicate with them.

Thus it must be kept in mind that transformation of a modern civilization happens in the direction of increase of the importance of opportunities of the individual, increase of value of activity of the certain person, growth of its freedom and responsibility. Therefore the engineer as the head of collective has to "reach" each certain participant of production. It has to possess if it is so possible to be expressed, a cognition of person, high moral qualities, the general culture, art of the head and administrative skills. The knowledge of philosophy helps the engineer with formation of these lines of his personality.

Activity of the engineer is first of all intellectual and creative. From other types of intellectual work (pedagogical, medical, art etc.) it differs that work of the engineer has at the same time both theoretical, and a practical orientation, it is carried out most often directly in the sphere of production of goods, is aimed at transformation natural in artificial, natural factors in socially significant phenomena and subjects. And the engineer always deals with real-life subjects and the phenomena.

The phenomenon of "engineering thinking" is the object of study of many sciences: philosophy, psychology, pedagogy, humanities and technical sciences.

Analysis of the real experience of creative solutions of engineering problems suggests that the basis of engineering thinking is a highly creative imagination and fantasy, multiscreen system creative understanding of knowledge, ownership methodology and technical creativity, allowing consciously manage the process of generating new ideas.

The process of training as a specific social sphere of activity and acts as an objective and as a subjective phenomenon. Developing in accordance with the laws of society and reflecting them as a natural historical process, training acts as an objective phenomenon. At the same time as the subject of the process of knowledge and practical transformation of the world people, developing their creativity, realizing their goal is the subjective factor, the force that changes the content and direction of the natural historical process.

## 5. Conclusion

The starting point in training is to define the essence of professional activities, which will lead the training and personal qualities necessary for its implementation. Quality of activity depends on quality of training of the personality, and in a context of a considered problem, – on quality of the vocational training assuming changes corresponding to its activity in structure of the personality.

The person, understanding external reality, reflects also reality itself. On the one hand, it possesses ability randomly to enter into the consciousness sphere any representations, and, on the other hand, – to realize the phenomena occurring in his consciousness, to control processes occurring in it. Watching the changes resulting in the outside world, resulting people learns not only the outside world, but also itself. The consciousness is a necessary condition of formation of independence and flexibility of thought, objectivity of judgments, gives the chance to the person to treat acts of own understanding critically. The unity of consciousness and activity is expressed that the consciousness acts as the regulator of behavior and all actions of the person.

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# The role plays implementation in teaching macroeconomics

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## Abstract

When applying a suitable combination of different modern methods of education, it is possible to improve quality and attractiveness of higher education and readiness of students, not only for successful completion of the exam syllabus, final paper, final state exams, but also to deal with everyday life and work situations, creating a precondition for the successful application of the students in their further activities outside of school. We have shown an example in the article how you can use the method of role plays within the teaching of Macroeconomics and increase the attractiveness of the subject and efficiency of education for students of Informatics.

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*Keywords:* teaching macroeconomics, participatory educational methods, economical skills, role play

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## 1. Introduction

University teachers in Slovakia are evaluated according to their research and publication activity more than ever in the past. There are constantly increasing demands for publication in prestigious journals and participation at major international conferences. Their teaching activity remains on the verge of interest, although, paradoxically, the public and students see it just in the first place in the context of university. In fact, students are much more interested in how the teacher explains, or presents the topic and whether he/she awakens interest than what success in publishing activities he/she achieves. For education at university is important to appropriately transform knowledge into science education. This issue is addressed, for example Rostášová, Čorejová, Chrenková (2013).

The students themselves are a key element in the implementation of education. Their motivational readiness to learn depends, apart from other things, on the emotional state of mind, cultural and educational background. Emotional state and disposition also have influence on what their approach will be learning. Interest in the subject depends on the content and form of presentation, teacher, student and other factors. Everything, however, is determined by time opportunities arising out of the schedule, number of students in a group, spatial capabilities, and teacher willingness and alike.

The methods used represent an important tool for ensuring the educational process. The selection of appropriate methods is determined by the aim of the subject. However, the use of a suitable combination of mutual educational methods should be conditional on the individual needs of students and teachers, social needs and trends. The selection should respond to the current global trends in technical, economic, and educational research and development. The implementation of appropriate methods is determined by various factors. It is, for example, the number of students in one group, their present and desired level of knowledge, skills, motivation to learn, functional position. The level of expertise and experience of teachers and spatial capabilities are also important.

## 2. Factors affecting the choice of educational methods

In the implementation of educational activities it is necessary to accept the fact that the efficiency and willingness of students to learn is influenced by several factors, which can be classified into three basic groups. **These factors are:**

- **Physical** – health condition, especially the state of the visual and auditory sense, bloodstream,

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and serious chronic or acute illness, stress may affect the ability of perception and learning.

- **Emotional** – when self-image, motivation, support for learning by neighbourhood or family, and ultimately the state and changes of the whole emotional system (shared values, attitudes ...) significantly affect people's ability to learn and change.
- **Intellectual** – the quantity and quality of previously acquired knowledge and skills can promote learning, if it is possible to continue the knowledge obtained and build on them. However, they may create barrier to learning, where existing knowledge is in contrast with the new one. (Table 1)

When implementing the education, it is important that teachers respond to what are the preferred learning styles of participants (Kucharčíková, 2013) and, where possible, remove barriers to learning.

Table 1. Factors affecting the choice of educational methods.

FACTORS AFFECTING THE CHOICE OF EDUCATIONAL METHODS				
LEARNING OBJECTIVES:	HUMAN FACTORS:	SUBJECT AND CONTENT:	TIME AND MATERIAL FACTORS:	PRINCIPLES OF LEARNING:
- knowledge	- teachers	- specific requirements	- time (schedule)	- motivation
- skills	- students	- for subject	- rooms (classrooms, and	- active involvement
- abilities	- surroundings	- interdisciplinary	their equipment)	- individual approach
- attitudes		problems		- feedback
- values				- transfer of knowledge

### 3. Educational methods

In order to achieve a higher efficiency of education it is appropriate to use a combination of several methods. The most frequently used includes lectures, seminars, but more modern and more efficient are so-called participatory methods.

**Lectures** are verbal presentations of a particular topic. They are suitable for the presentation of a large amount of information to large groups, but there is missing the opportunity to mutual interaction of a lecturer with participants. They are focused primarily on improving knowledge. They can be very impressive and imaginative using modern multimedia tools; however, in terms of preserving the information, they are not very effective.

**Seminars**, in the form of papers and discussions, are focused on exchanging information and opinions of participants on the topics known in advance. The advantage is the support and development of ideas, immediate feedback. However, the quality of learning depends on the knowledge level of the participants.

**Participatory methods** expect a high degree of activity and personal involvement of participants in the learning process. They are designed only for smaller groups of participants, but their advantage is that they encourage better retention of learned. They are contemporary modern methods of education. (Table 2)

**Training** puts emphasis mainly on the active acquisition of skills and qualifications. It is a form of experiential learning based on the fact that people learn more and faster if they "try something" than read the information, or heard, for example, in a lecture or seminar. There is preferable to procedural aspects of learning. The training process is focused on a higher degree of participation of participants than in the classic sense of learning. Participants are activating in the form of group work, management games, brainstorming, case study, role plays, etc. Integral part of the training is to provide feedback and evaluation of activities performed. The efficiency and quality of evaluation are increasing using cameras and evaluating of individual activities performed. Use a variety of teaching methods is analyzed by many authors (Oxoby, 2001; Sloman, Mitchell, 2002).

Table 2. The possibility of use of certain participatory educational methods

METHOD	DESCRIPTION	ADVANTAGES	DISADVANTAGES
Maze	It uses induced situation. At some point, the participants have more options to choose when solving the task and at the same time they discover the consequences of one of the selected option. They proceed in this way until they solve the task successfully. The use is appropriate in small groups for education in the field of decision-making.	- own pace possible - a high degree of participation of participants	- the most learn those who are wrong - time-consuming - preparation demands for the lecturer
	One group of participants solve the task, the second	- practicing the	- stage fright and



Aquarium	group watches it, and subsequently provides feedback. Used in groups with a maximum of 10 - 12 participants in teaching interpersonal and management skills.	–	technique of providing feedback possibility of a thorough practicing of the skills learned	–	nervousness of participants who solve the task and are watched demands for facilitation by the lecturer
Solving the incident	The method is similar to the case study. There are assigned the basic facts of the incident and the group decides what additional information is necessary and what questions must be answered. The method is suitable for a group of up to 10 people in teaching management skills, problem diagnosis and analysis of facts.	–	exploring real problems without risk good simulation of reality	–	sense of artificiality of the situation by the participants
Workshop	Popular method designed to discuss specific situations and find possible approaches to their positive management. It can be also used in group with a maximum of 15 participants trained in communication and management skills.	–	informality possibility to solve specific working problems also used at larger groups	–	demands on teacher facilitation skills
Role plays	Group gets the script with roles. There are played the selected work situation and examined various possible approaches to solving problems or unexpected events. They are suitable for teaching interpersonal, consulting, marketing, management and training skills in a group of 8 – 10 participants.	–	entertainment practical exercises and unpleasant situations	–	games can be considered to be unrealistic concerns and stage fright of unsuccessful "acting" performance

Currently, there has been dynamically expanding **E-learning** (electronic education), which is faster and cheaper than other conventional forms of education, but its use is limited to the theme of education and technological equipment of companies. The advantages of using modern ICT in education is also the fact that: the student can use his own pace, updated material is available immediately and it can be provided for a large number of students at the same time, opinions and thoughts on the topic being acquired can be easily exchanged among the participants. Some disadvantages can include the following factors: lack of visual contact with the teacher in each group, therefore, non-verbal reactions cannot be easily captured and processed; difficult to set down rules of cooperation, high demands are placed on teacher in the coordination and involvement of all participants.

The more efficient application of any method is supported by audio-visual device, such as flipchart, projector, overhead projector, whiteboard, various educational or amusing films, models or support materials. Fashion hit is the use of computers and presentation of educated themes in PowerPoint programme. The risk is that the interactivity is disappearing and teachers and students often focus more on the visual aspect of the presentation when creating presentation, the content is underestimated. We should not forget the appropriate arrangement of the room where the educational activities are practiced. The arrangement is necessary to adapt to the main theme of activity, methods used, group size, room size, timing etc. Also, new technologies open new possibilities and opportunities in education. When using them, it is necessary to pay attention to that they can meet the expectations of students and make learning efficient enough. The conditions and approaches to learning, as well as specific conditions for learning support, are generally applicable and it is necessary to pay attention to them, even using the most modern technologies. For example Sosin (1998) devotes attention to the use of ICT to teach economics.

#### 4. Combination of educational methods

The creation of more effective combinations of these methods and the ability to design new innovative methods of education will be important for the future. (Kucharčíková, Vodák, 2001) The biggest innovations in education in recent years have been associated specifically with the use of information and communication technologies. The programmes developed on this basis provide a wide range of learning opportunities to achieve various needs. It is easiest to programmes that emphasize knowledge and can provide users with information in a structured and logical manner. Moreover, they can use it at their free time and can be linked with libraries or databases on the Internet. (Buckley, Capple, 2004) Current methods of education should support the development of creativity and flexibility, willingness to receive and respond to changes and the use of modern technical and support means.

In the context of teaching there often occur problems with rooms, schedule, time-tables, etc., many students focus on "chasing credits" than studies and sometimes are not interested in the subject as such. However, all those who are excited about the subject or a particular area, it is worth doing experiments and innovate teaching with non-traditional methods and procedures.

The global economy has built many business in a position in which it is asked to effectively manage liquidity and funding, due to the current crisis. Without knowledge about good financial management a company will hardly survive in heavy competition (Chodasová, Tekulová, 2014). In an economy where the offer and the demand meet even more often in the virtual space, it is high time to eliminate the time and space barriers, and to use Internet as a business environment" (Moga, Buhociu, Ionita, Virlanuta, Antohi, Zugravu, 2009). Achieving the goals of the enterprise assumes that managers dominate knowledge of management and receive technical and economic measures and social measures aimed at increasing the performance and motivation employees (Klučka, 2014). The current labour market effects the university education to a large extent requiring a graduate of interdisciplinary knowledge and with the skills to find the solutions to both technological and economic issues (Ďurišová, 2013). But many contemporary students study subjects that are not profiled for their chosen field of study with displeasure and unwillingness. The most common argument used therein, is "what I do in life will be?" It depends on the teacher that he himself explain the practical application of the "unpopular" subject or to ask the students themselves to seek and identify possibilities for practical application. This also applies to students of Informatics who are prejudiced to study the subjects of economic and managerial specialization. In order to increase motivation and efficiency of teaching the subjects of economic character for students of study programme Informatics, we have innovated teaching Macroeconomics at the Faculty of Management Science and Informatics using participatory methods of education. In the context of the previous text, we apply a combination of lectures, discussions, brainstorming, group work, buzzing groups within teaching. At the end of the semester, when students have plenty of expertise knowledge, obtained presentation skills and have enough experience of teaching using participatory methods, we use role plays "Negotiation."

## 5. Role play - NEGOTIATION

In role plays, participants use their own experiences to play a real life situation. When done well, role plays increase the participants' self-confidence, give them the opportunity to understand or even feel empathy for other people's viewpoints or roles, and usually end with practical answers, solutions or guidelines.

Role plays are useful for exploring and improving interviewing techniques and examining the complexities and potential conflicts of group meetings. They help participants to consolidate different lessons in one setting and are good energisers.

However, role plays can be time-consuming and their success depends on the willingness of participants to take active part. Some trainees may feel a role play is too exposing, threatening or embarrassing. This reluctance may be overcome at the outset by careful explanation of the objectives and the outcome. Some role plays can generate strong emotions amongst the participants. It is therefore essential that a role play is followed by a thorough debriefing. This provides the opportunity for the trainer and the participants to raise and assess new issues. (Kenya)

The rapid and steady changes in a field of information and communication technologies have increased demand for high qualified specialists not only in a field of cybernetics and applied informatics, but also in related fields such as economy and management. (Tokarčíková, 2013)

This role play is designed for students of Macroeconomics to practice and repeat topics related to models of macroeconomics equilibrium (Keynes's model of equilibrium output determination, IS-LM Model, IS-LM-BP Model, AD-AS Model), topics related to macroeconomic problems (unemployment) and the application of knowledge in the field of economic policy, particularly fiscal, monetary and trade policy. In addition to repeating knowledge of entire semester study of Macroeconomics, the aim of the game is that students examine communication skills, professional reasoning, presentation and teamwork.

All students are always involved in a game within a particular study group. Tasks that they play within the activity are assigned to them either by the teacher or they choose them themselves. Based on our experience, it is more preferable when under observation of character properties and communication skills of the students during the semester, the teacher determines the key players of game which are three members of the government (left-wing, right-wing and independent expert).

### Players:

- 3 members of the government – left-wing, right-wing and independent,
- advisory teams – each member of the government has at his disposal two policy advisers and two experts from the field (there may be three experts depending on the number of students present in the group),
- journalists – observers: 3 – 4 students.

### Tools:

- 7 types of information sheets:
  - information sheet – member of the government: member of left-wing party, member of the right party, independent member,

- information sheet – political advisors: advisor for left-wing party, advisor for right-wing party,
- information sheet – expert advisors,
- information sheet – journalists,
- other gadgets: flipchart, whiteboard, coloured markers, clean sheets of paper, camera, projector.

**Time subsidy** for the game is 100 min. At the beginning of the teaching, all players / students receive short game instruction input from the teacher (10 min.). Subsequently, there are distributed information sheets with the necessary instructions to all players. It is basically a scenario according to which the players will play their roles. The examples of information sheets are in the following part of the article.

Information sheet

**Managerial game - NEGOTIATION**

**Member of the government - representative of left-wing party/ right-wing party/ independent expert**

Slovakia is the country of EU with a high degree of unemployment. Although governments have taken various measures to address this problem in different years, we still have not won over the high unemployment.

You are a member of the present government to which you are nominated by a political party oriented to **left-wing (social)/ right-wing/ independent expert**. Your **task** will be to read and think about this instruction during 5 minutes. Then, prepare together with your advisory team (which consists, first, of either your political contemporaries and experts from the economic and social fields) material for government meeting in the course of 25 minutes, where you design various options for addressing high unemployment in the Slovak Republic referring to any difficulties, or advantages and disadvantages of each solution. When preparing, use the knowledge you obtained from the existing study of Macroeconomics - models of macroeconomic equilibrium, economic policies (fiscal, monetary, foreign trade). Proposals must correspond with your political orientation.

It is necessary to prepare these proposals for the government in writing (on A4 paper, flipchart or whiteboard) so that they are clear, understandable and

Information sheet

**Managerial game - NEGOTIATION**

**Political advisors of right-wing / left-wing politics**

Slovakia is the country of EU with a high degree of unemployment. Although governments have taken various measures to address this problem in different years, we still have not won over the high unemployment.

You are the members of the political advisory team of one of the members of the present government for your **right-wing/left-wing party**. Your **task** will be to read and think about this instruction during 5 minutes. Then, help to prepare material for government session for the member of government of your political group together with his expert advisory team, where you propose various possibilities for addressing high unemployment in the Slovak

Information sheet

**Managerial game - NEGOTIATION**

**Expert advisors**

Slovakia is the country of EU with a high degree of unemployment. Although governments have taken various measures to address this problem in different years, we still have not won over the high unemployment.

You are members of the political **expert advisory team** of one of the members of the present government. Your **task** will be to read and think about this instruction during 5 minutes. Then, help to prepare material for government session for the member of government together with his political advisory

**Managerial game - NEGOTIATION****Journalists - observers**

Slovakia is the country of EU with a high degree of unemployment. Although governments have taken various measures to address this problem in different years, we still have not won over the high unemployment.

You are a member of a group of journalists who follow the preparation and government session where three members of the government will submit proposals to address the problem of unemployment in Slovakia.

Your task is:

- to notice logical connections, expertise, or political involvement of arguments of government members

Then, the teacher defines physical space for three teams (it is important that the various work teams do not disturb and influence each other), assigns the necessary tools and specifies the beginning of game. He does not provide players with further instructions, all the necessary information is in information sheets. In order to better understand the instructions, they depend only on mutual communication for explanation of uncertainties. Teacher supervises the smooth course, points out time limits, takes notes from observation of students / players throughout the game. He monitors whether and how correctly they solve tasks using the theoretical basis, what extent they are identified with their task, what is the level of activity and participation of individual members, what is the level of mutual communication, cooperation, teamwork, what other skills students apply and he facilitates feedback at the end.

Evaluation represents a final, but very important phase of educational process. Evaluating allows looking back on educational activities, successfulness and interest of students and provides information about what to do in other way in future activities, what improve, what topics omit, what complete etc. For this reason, it is also important to implement evaluation of the game after realization of role plays.

They will get a little feedback about how students worked in content and procedural aspects during the game from journalists / observers. It is a view of the students. However, it is necessary that the players themselves express their initial impressions of the game and subsequently analyze both sides of the problem-solving process (content and process) and identify their contribution to the game and their failures. Finally, teacher provides feedback to the whole game. It depends only on his facilitation skills, to what depth in the feedback he will go and what lessons he "pulls out" of the students. There is one interesting finding arising from our experience. The game of learning "weaker and lazier" students has the greatest positive impact. They understand the reasons just using this form, why they study the subject, they realize their imperfections in the study and finally achieve excellent results in the examination. This is precisely the objective. To make subject more attractive for those who do not take interest at the beginning of the semester. These students make the greatest promotion and marketing of the subject among the student public. Of course, it is expected that smart students who deal with their obligations responsibly throughout the semester provide the appropriate background and expertise for the game. These are the students who create the necessary support for the teacher.

Therefore, teacher must appreciate the work and contribution of all involved at the end of the game. The game does not succeed if students bring "great solutions", but when they realize the importance of knowledge obtained during their studies at the university and later in the practical and personal life.

Evaluation has a higher positive effect, if it is done using a camera and playing key situations that arose in the game by using a projector. However, the use of cameras and data projector is significantly limited by time demands of this approach and timetable at university. Evaluation creates preconditions to improve the quality of teaching and increase student interest in the future. Short evaluation can be done after each seminar or lecture and exercise, after a check exam, at the end of the semester, after the examination period, but also at the beginning of the next semester, when we find the reasons why the students enrolled on the subject. It is implemented using several methods, such as interviews, questionnaire feedbacks, and self-reflection.

## 6. Conclusion

There has been discussion for longer time in Slovakia that formal education is still focused more on acquiring encyclopaedic knowledge. Teaching is less focused on promoting creativity and its use in the development of skills to identify problems, analyze the specific situation, suggest and evaluate variant solutions, present and defend own solutions. A low ability of students to use the knowledge in practical applications is considered serious deficiency.

We have introduced an example of how is it possible to innovate and make more attractive Macroeconomics for students of Informatics using participatory methods, namely the role plays. It depends only on the teacher, his professional and pedagogical knowledge, skills, experience and creativity to find space for the implementation of participatory methods in the context of teaching his subjects. The reward for efforts will be very satisfied teacher and students, resulting in higher interest in the subject, higher education efficiency and better results. Knowledge, skills and experience that students thus obtain, are a more memorable and easier to apply in the future of their profession even personal life.

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# The school organisational health questionnaire: contribution to the Italian validation

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## Abstract

Teaching is a stressful occupation, one of the professions with the highest levels of mental health problems. Some studies suggested that this may be due to professional isolation, high levels of emotional labour and main stressors may include disciplinary problems, low salaries, disagreement with colleagues or with parents. Few instruments have been validated specifically for assessing teachers stress, morale and school organisational climate: the School Organisational Health Questionnaire (SOHQ: Hart et al., 2000) is the main one, whose properties of the Italian version are here presented (337 teachers in Italy filled out a self report questionnaire including the SOHQ scales).

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*Keywords:* scale validation; teachers stress; school organisational climate

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## Introduction

Teaching is a highly stressful occupation, as highlighted in several decades of research in the field of Occupational Health Psychology (Travers & Cooper, 1996; Guglielmi & Tatrow, 1998; Kyriacou, 2001; Zurlo, Pes & Cooper, 2007). Some studies have suggested that this may be due to the professional isolation, the high levels of emotional labour which teaching entails and the long-term responsibility for children's lives. The main stressors may include disciplinary problems, low salaries, disagreement with colleagues or conflict with parents redefinition of job conditions as a consequence of school reforms, workload, role conflict and ambiguity and poor working conditions (Travers & Cooper, 1996; Kyriacou, 2001; Zurlo, Pes & Cooper, 2007).

Research suggests that teaching is one of the professions with the highest levels of mental health problems. In Italy it was found that almost 25% of teachers perceive high stress (Zurlo & Pes, 2013), and the percentage increases to 70% among temporary teachers (Zurlo & Pes, 2012). Moreover, although teachers represent only the 18% of persons enrolled in the National Institute for Insurance against Accidents at Work (INAIL), the 37% of questions for total inability were submitted by this occupational category (about the half of these are for psychiatric disorders, see Lodolo D'Oria et al., 2006).

In the face of high social responsibility and a very evident reciprocal relation between the wellbeing of teachers and students (Caprara et al., 2006; Denny et al., 2011), who now work in schools is pointed out as one of the social group most at risk of unease, and this could subsequently negatively impact the quality of the teaching process and the teacher-student relationship. Moreover, Cordeiro et al. (2002) have noticed that the strain experienced by teachers is indeed to be attributed more to factors linked to the social context rather than to the classroom: teachers seem to experience – more than any other category – social disvalue, poor valorization and acknowledgement of their commitment.

Although many studies indicate antecedents of malaise, stress and burnout, only in recent times, studies recognized the link between organizational health and teacher wellbeing (e.g. 1988; Wearing et al., 1990; Hakanen et al., 2006; Skaalvik & Skaalvik, 2011; Velasco et al., 2013). Research has also shown how teacher affect could be an important determinant of student learning outcomes and students' wellbeing, highlighting the importance to establish the determinants of teachers' negative outcomes, but also positive affective ones that are associated to their work (Rowe, 1992; Danny et al., 2011; Converso et al., 2014). It could be stated that positive experiences and morale may have an independent impact from negative experiences and psychological distress to teacher quality of work life (Hart, 1994; Hart, Wearing & Headey, 1995). However, as noted by Evans (1992), teacher morale has gained little attention in empirical research.

The morale construct has been differently operationalized and measured. Definitions vary between morale as a group phenomenon (persistence and energy, cohesion and cooperation and enthusiastic striving among teachers (Smith, 1996), and morale as an individual psychological state (Doherty, 1988; Evans, 1992) similar to positive affect (Watson, 1988). As stated by Hart et al. (2000), measurement tools, like the Staff Morale Questionnaire (Meaney & Smith, 1988), failed to differentiate the causes from the manifestations of morale. While Doherty (1988) developed a measure of teacher morale that was referred to as “a number of heterogeneous items related to adjustment and mental health” (*ibidem*, p. 72) that are more likely to derive dispositional levels of negative affect. In contrast, Hart & Conn (1992) stated that morale is “a unitary construct [...] associated with the energy, enthusiasm, team spirit and pride that teachers experience in their school”.

Although in literature different scales can be found to assess various aspects of school organizational climate (Owens, 1991; Rentoul & Fraser, 1983), none of them measures issues typical of most organizations. In fact, as stated previously, research indicates that in the school context, organizational factors, e.g., leadership and social support, are more important than classroom specific issues, e.g., students' behavioral management, in determining psychological outcomes among teachers (Hart, Wearing & Conn, 1995a; Cordeiro et al., 2002) and aspects of human resource management, e.g., opportunity for professional growth and role clarity, are linked to teachers' wellbeing and job satisfaction.

In line with these statements and in order to understand the determinants of teacher morale, Hart et al. (2000) developed a self-reported questionnaire, called *School Organizational Health Questionnaire* (SOHQ), consisting of organizational factors and aspects of human resource management as there are few available measure that assess both of these aspects typically addresses by organizational development interventions.

In the Italian context, to date, there is a lack of measurement tools that specifically addressed the organizational antecedents of occupational wellbeing in the school context.

## Aim and Method

The aim of this study was to develop the Italian version of SOHQ and to examine its psychometric properties among teachers staff.

## Data collection

Teachers from eighteen public school institution in a region of Northern Italy were involved during the academic year 2012/2013. Presentation of the project, sharing of content, objectives and modalities of implementation were first presented to School Leaders, and consequently to all the participants involved in the research project.

The self-reported questionnaire was administered, anonymously, to a total sample of 378 teachers, and its completion was based on consent for the processing of the data, conducted in privacy and in accordance with current Italian legislation. It took place during working hours, at the individual sites, in the presence of researchers of the Department of Psychology who were available for clarification about the compilation.

## Measures

The data were obtained by means of a self-reported questionnaire including a socio-demographic section and the SOHQ (Hart et al. 2000). The original version of SOHQ consisted of 57 items grouped in 12 sub-dimensions: *Morale* (M, 5 items), *Appraisal & Recognition* (AR, 6 items), *Curriculum Coordination* (CC, 4 items), *Effective Discipline Policy* (EDP, 4 items), *Excessive Work Demands* (EWD, 4 items), *Goal Congruence* (GC, 5 items), *Participative Decision Making* (PDM, 4 items), *Professional Growth* (PG, 5 items), *Professional Interaction* (PI, 7 items), *Role Clarity* (RC, 4 items), *Student Orientation* (SO, 4 items) and *Support Leadership* (SL, 4 items). All items included in the version presented in the study by Hart et al. (2000) were translated from English into Italian using the back translation method (Brislin, 1970, 1986) and included in the questionnaire. Also the following instructions were translated into Italian 'Listed below are a number of statements that could be used to describe some aspects of your school. Please read each statement carefully, and indicate the extent to which the statement *actually applies to your school*'. Teachers were asked to respond to each item on a 4-point scale, ranging from 'strongly disagree' to 'strongly agree'.

Data analysis were performed using SPSS.

## Participants

337 teachers filled out the questionnaire correctly and thus were considered for the presented study. 68 (20.2%) of them were nursery teachers, 169 were teachers of primary school (50.1%) and 100 (29.7%) of secondary school.

90.2% (n=308) were female and 6.8% (n=23) were male. Participants were aged between 24 and 63 years ( $M=45.32$ ;  $sd=8.83$ ). Educational level were 50.1% had completed high school, 15.4% had a bachelor degree, 18.7% a master degree and 7.4% a PhD or a specialization degree. Most of the participants were married (70.2%), 17.5% single, 5.6% divorced and 1.8% widowed. 65.9% had at least one child.

Concerning professional data, participants had a job tenure in the Italian public school system ranging from less than a year to 41 years (mean: 19.67;  $sd=10.68$ ). The majority had a permanent (72.5%) and full-time contract (85.2%).

## Results

In order to determine the factor structure of Italian version of SOHQ, an exploratory factor analysis (EFA) was carried out by entering all 57 items in the model. Maximum Likelihood (ML) as Estimation Method and Varimax as the rotation Method used. Since the factorial model did not reproduced the structure as expected, three further and consequent EFAs were performed. At each step, items were progressively deleted if they fulfilled at least one of the two following criteria: factorial loading less than .30 or cross-loading on more than one dimensions (with a loading greater than .30 on more than one factor). Moreover, at the last EFA, all items loading on a factor including less than 3 items were eliminated.

Final solution comprised 34 items grouped in 7 dimensions that explain globally 68.57% of the variance (see table 1). The Kaiser-Meyer-Olkin measure ( $KMO = .90$ , greater than .70) and Bartlett's test of sphericity ( $\chi^2=5463.5$ ,  $p = .00$ ) indicate that the factor model is appropriate. The first factor explains 32.49% of the variance and comprises all 7 items of Professional Interaction, the second factor explains the 9.30% of the variance and contains all 5 items of Supportive Leadership. The third one encompasses all items of Morale (5 items; 7.21% of the variance). The forth one was Student Orientation (all 4 items included in the original model: 6.04%). The fifth one comprises four of six items of the dimension of Appraisal and Recognition (5.62%). The sixth and seventh comprise respectively all items of Professional Growth (4.62%) and Excessive Work Demand (3.64%).



Table 1. EFA results: Factor loading of 34 factor solution.

	Rotated factor matrix						
	Factors						
	1	2	3	4	5	6	7
PI6	.759						
PI2	.737						
PI3	.722						
PI7	.694						
PI1	.607						
PI5	.545						
PI4	.527						
SL2		.828					
SL3		.828					
SL1		.752					
SL4		.714					
SL5		-.386					
M2			.791				
M5			.759				
M1			.666				
M3			.652				
M4			.578				
AR2				.918			
AR1				.850			
AR4				.715			
AR6				.649			
SO3					.739		
SO2					.713		
SO1					.604		
SO4					.595		
PG4						.755	
PG3						.654	
PG1						.639	
PG5						.534	
AR5						.382	
EWD3							-.807
EWD4							-.767
EWD1							-.692
EWD2							-.465

As shown in table 2, all sub-scales included in the Italian version have a Cronbach's Alpha greater than .70.

Table 2: Description of subscales included in the Italian version of SOHQ.

Factor	Number of items	M(ds)	$\alpha$
Professional Interaction	7	3.24(.53)	.891
Supportive leadership	5	3.18 (.63)	.878
Morale	5	2.56 (.54)	.848
Appraisal and recognition	4	3.00(.75)	.847
Student Orientation	4	3.31(.52)	.783
Professional Growth	5	2.65(.64)	.782
Excessive Work Demands	4	2.76 (.67)	.791

## Discussion

The findings of this study conducted on an Italian sample of teachers suggests that the Italian version of the Organizational Health Questionnaire has only 7 of the original 12 dimensions proposed by Hart et al. (2000). Overall, the dimensions explain the 68.57% of the variance and all the sub-scales report a good internal consistency. Hence, the analysis pointed out that the versions consisting of 34 items represent a valid and reliable tool for assessing morale and climate among Italian teachers.

The reason that Effective Discipline Policy and Curriculum Coordination, do not surface as constitutive factors in the Italian version could be attributed to both cultural and organizational factors of Italian school context. Concerning EDP, we can observe that in the Italian culture the topic of discipline, especially if it refers to the school context, is controversy and could evoke a concept that does not match well with a “open-minded” philosophy of education (“discipline” as the concept of “excessive rigidity”, “scarcity of freedom”, etc.). As a consequence, teachers responding to the questionnaire probably did not consider this dimension as an aspect that fosters a positive and serene school climate.

Concerning CC, in the Italian school there are usually few or no activities that are conducted at the interclass level. This could represent a reason for what this dimension does not contribute to define school climate for Italian teachers. In the same vein, Goal Congruence and Participative Decision Making refer to a shared vision of the work and the organization, that, as highlighted by Zurlo et al. (2007) it is difficult to find in Italian school in which teachers jobs are more focused on their own work in the classes, rather than on teamwork.

Since the present study has adopted an exploratory approach, the future studies should take up a confirmatory approach, i.e., CFA, and should be oriented to add empirical evidences that allowed to determine if the factor structure here found fits other samples of Italian school teachers. Finally, as no convergent and discriminant validity analyses are available from this study, future research could further implement these analyses, also with the aim to explore the influence of each dimension on psychological and physiological health conditions perceived by teachers.

Despite these limitations, this questionnaire represents the only validated measure, for the Italian context, of the teacher morale and school organizational climate, assessing organizational behavior and issues of resource management. In that sense it represents a useful tool for the study of the antecedents and consequences of teacher morale.

## Appendix: The School Organisational Health Questionnaire – Italian version

* Reverse item		Included in the Italian version
<b>Morale</b>	<b>Clima</b>	<b>yes</b>
There is good team spirit in this school	M1- In questa scuola c'è un buon clima	<b>yes</b>
The morale in this school is high	M2- In questa scuola il morale è alto	<b>yes</b>
Teachers go about their work with enthusiasm	M3- Qui gli insegnanti lavorano con entusiasmo	<b>yes</b>
Teachers take pride in this school	M4- Qui gli insegnanti si sentono orgogliosi	<b>yes</b>
5. There is a lot of energy in this school	M5- In questa scuola c'è molta energia	<b>yes</b>
<b>Appraisal and Recognition</b>	<b>Valutazione e Riconoscimento</b>	
I am regularly given feedback on how I am performing my role	AR1- Ricevo regolarmente dei feedback su come svolgo il mio ruolo/lavoro	<b>yes</b>
I am happy with the quality of feedback I receive on my work performance	AR2- Sono soddisfatto della qualità dei feedback che ricevo circa i risultati del mio lavoro	<b>yes</b>
There is a structure and ongoing process that provides feedback on my work performance	AR3- In questa scuola vengono forniti regolarmente dei feedback sulla performance lavorativa	<b>no</b>
I have the opportunity to discuss and receive feedback on my work performance	AR4- In questa scuola ho l'opportunità di discutere i feedback che ricevo sul mio lavoro	<b>yes</b>
Teachers receive recognition for good work	AR5- In questa scuola gli insegnanti sono valorizzati se svolgono un buon lavoro	<b>no</b>
I am encouraged in my work by praise, thanks or other recognition	AR6- In questa scuola sono incoraggiato nel mio lavoro da apprezzamenti, ringraziamenti o da altri riconoscimenti	<b>yes</b>
<b>Curriculum Coordination</b>	<b>Integrazione tra classi</b>	
There is sufficient contact between different sections of the school in curriculum planning	CC1- C'è sufficiente contatto tra le diverse sezioni (interclasse) della scuola nella pianificazione della programmazione curriculare	<b>no</b>
There is effective coordination of the curriculum in this school	CC2- In questa scuola c'è un efficace coordinamento nella pianificazione dei percorsi didattici	<b>no</b>
Teachers consult with each other about their teaching and curriculum	CC3- Qui gli insegnanti si confrontano tra loro circa i diversi programmi di studio	<b>no</b>
Teachers consult with area/subject coordinators about their teaching	CC4- Qui gli insegnanti si coordinano secondo le diverse aree disciplinari	<b>no</b>
<b>Effective Discipline Policy</b>	<b>Efficacia delle regole disciplinari</b>	
The rules and sanctions relating to discipline in this school are well understood by both staff and students	EDP1- In questa scuola le regole e le sanzioni disciplinari sono chiari sia al personale sia agli studenti	<b>no</b>
There is an agreed philosophy on discipline in this school	EDP2- In questa scuola c'è una filosofia condivisa circa la disciplina	<b>no</b>

My own expectations about discipline are the same as most other teachers at this school	EDP3-Condivido le mie opinioni sugli aspetti disciplinari con la maggior parte degli altri insegnanti di questa scuola	no
The rules and sanctions relating to discipline are not enforced in a consistent fashion in this school	EDP4-In questa scuola le regole e le sanzioni in materia di disciplina non sono applicate in modo coerente	no
<b>Excessive Work Demands</b>	<b>Carico di lavoro eccessivo</b>	
Teachers are overloaded with work in this school	EWD1-Qui gli insegnanti sono sovraccarichi di lavoro	yes
There is too much expected of teachers in this school	EWD2 In questa scuola ci si aspetta troppo dagli insegnanti	yes
There is constant pressure for teachers to keep working	EWD3-Qui gli insegnanti sentono di essere costantemente sotto pressione	yes
There is no time for teachers to relax in this school	EWD4-Qui gli insegnanti non hanno tempo per pause e/o recupero	yes
<b>Goal Congruence</b>	<b>Concordanza di obiettivi</b>	
There is agreement in the teaching philosophy of this school	GC1-In questa scuola vi e' una filosofia condivisa di ciò che significa insegnare	no
The staff are committed to the school's goals	GC2-Qui gli insegnanti sono impegnati e coinvolti negli obiettivi della scuola	no
The school has a clearly stated set of objectives and goals	GC3-In questa scuola obiettivi e progettualità sono definiti in modo chiaro	no
My personal goals are in agreement with the goals of this school	GC4-I miei obiettivi personali sono in sintonia con gli obiettivi della scuola in cui insegno	no
The goals of this school are not easily understood	GC5-In questa scuola gli obiettivi non sono facilmente comprensibili	no
<b>Professional Growth</b>	<b>Crescita Professionale</b>	
Others in the school take an active interest in my career development and professional growth	PG1-In questa scuola vi è chi si interessa per lo sviluppo della mia carriera e la mia crescita professionale	yes
I am encouraged to pursue further professional development	PG2- In questa scuola sono incoraggiato a pormi obiettivi di crescita professionale sempre più elevati	yes
The professional development planning in the school takes into account my individual needs and interests	PG3-In questa scuola vengono presi in considerazione i miei bisogni e interessi personali	yes
There are opportunities in this school for developing new skills	PG4-In questa scuola ci sono opportunità per lo sviluppo di nuove competenze	yes
It is not difficult to gain access to in-service courses	PG5-In questa scuola non è difficile accedere a corsi di formazione in orario di servizio	yes
<b>Participant decision making</b>	<b>Partecipazione al processo decisionale</b>	
I am happy with the decision-making processes used in this school	PDM1-Sono soddisfatto dei processi decisionali in uso in questa scuola	no
There is opportunity for staff to participate in school policy and decision-making	PDM2-Qui gli insegnanti hanno la possibilità di contribuire alle politiche scolastiche e partecipare al processo decisionale	no
There are forums in this school where I can express my views and opinions	PDM3-In questa scuola dispongo di spazi in cui esprimere le mie opinioni e pareri	no
Teachers are frequently asked to participate in decisions concerning administrative policies and procedures in this school	PDM4-Qui gli insegnanti sono spesso chiamati a partecipare alle decisioni che riguardano gli aspetti amministrativi e procedurali	no
<b>Professional Interaction</b>	<b>Rapporti con i colleghi</b>	
There is good communication between staff members in this school	PI1-In questa scuola c'è una buona comunicazione tra il personale	yes
I receive support from my colleagues	PI2-Ricevo sostegno dai miei colleghi	yes
Teachers in this school can rely on their colleagues for support and assistance when needed	PI3-Qui gli insegnanti possono contare sui loro colleghi per un supporto in caso di necessità	yes
There is good communication between groups in this school	PI4-In questa scuola c'è una buona comunicazione tra i diversi gruppi	yes
Teachers frequently discuss and share teaching methods and strategies with each other	PI5-Qui gli insegnanti discutono e condividono abitualmente metodi e strategie di insegnamento con i colleghi	yes
I feel accepted by other staff in this school	PI6-Mi sento integrato nel gruppo degli insegnanti di questa scuola	yes
I have the opportunity to be involved in cooperative work with other members of staff	PI7-In questa scuola ho l'opportunità di essere coinvolto e cooperare con gli altri	yes
<b>Role Clarity</b>	<b>Chiarezza di ruolo</b>	
I am always clear about what others at school expect of me	RC1-In questa scuola mi è chiaro cosa si aspettano gli altri da me	no
My work objectives are always well defined	RC2-I miei obiettivi di lavoro sono sempre ben definiti	no
I always know how much authority I have in this school	RC3-In questa scuola so quanto è autorevole il mio ruolo	no
I am clear about my professional responsibilities	RC4- So con chiarezza quali sono le mie responsabilità professionali	no
<b>Student Orientation</b>	<b>Orientamento allo studente</b>	
This school promotes the concept of students being individuals	SO1-In questa scuola si promuove la concezione degli studenti come individui	yes
Students are treated as responsible people in this school	SO2-In questa scuola gli studenti sono trattati come persone responsabili	yes
Students in this school are encouraged to experience success	SO3-In questa scuola gli studenti sono incoraggiati a sperimentarsi	yes
Students have access to advice and counseling when needed	SO4-In questa scuola gli studenti hanno la possibilità di avere un supporto e consulenza in caso di necessità	yes
<b>Supportive Leadership</b>	<b>Leadership supportiva</b>	
There is support from the administration in this school	SL1-In questa scuola vi è supporto da parte della direzione	yes
There is good communication between teachers and the administration in this school	SL2-In questa scuola c'è una buona comunicazione tra insegnanti e direzione	yes
The administration in this school can be relied upon when things get tough	SL3-In questa scuola si può contare sul supporto della direzione nelle situazioni difficili	yes
I am able to approach the administration in this school to discuss concerns or grievances	SL4-In questa scuola è possibile avere un rapporto diretto con la direzione per discutere di problemi o presentare lamentele	yes
The school's administrators don't really know the problems faced by teachers*	SL5-In questa scuola il Dirigente Scolastico non conosce realmente i problemi che gli insegnanti devono affrontare*	yes

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# The social latest perspective of the child from a multi-child family in the Polish educational space

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## Abstract

The social perspective of the child is a subject of interpretation of many fields of study in Polish examinations which representatives are taking back among others to the globalization, medicalization, whether of social transformation and in the process are granting the new dimension. In the present article the social latest perspective of the child was presented from the multi-child family in the light of examinations conducted at Polish schools and they made the attempt to depict the intramural dimension of the socialization of the child from a large family, pointing at specific social roles (of pupil, friend, member of the school community) which it is filling up in second by the family for environment socialization.

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*Keywords:* child from multi-child family, socialization, specific social role, pupil, friend, member of the school community

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## Main text

### Introduction

Large families are the subject of interest for many different disciplines and are recognized in various aspects of cognition, e.g.:

- as a polycategorical educational system (pedagogy),
- demographic, relating to the regularity of the development of its population and describing its character of then, now and the future (demography, social politics),
- the structure and level of the relationship between its members (sociology, social psychology),
- phenomena threatening its proper functioning, such as unemployment, poverty (economics, statistics),
- forms and types of social participation of age groups (family sociology, sociology of education).

The common element of the aspects listed above is to treat large families as a basic unit of society.

In literature on this subject, the school functioning of a child is recognized in various ways. It should be noted, however, that the quality of the school procedures depends largely on the process of socialization of the student.

A new social dimension of school functioning for a child from a large family

The socialization which takes place in the family environment is stimulated not only interactions occurring within the family or its features. The course of these phenomena within it also has its important considerations in

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the external, social world, in different systems, social structures located outside the family - in the micro-, mezzo- and macro-structure and society . Interactions that occur between family and school, and individual circles from the external "social world" are mutual, and that is why during the course of my research and analysis I focused my attention on family and school directions of influence, not forgetting about interactions from the opposite direction as well.

To properly determine the functioning of a school child from a large family and socialization in the educational environment, respectively defining the possibility of socialization, I have based my considerations on the theory of socialization proposed by Klaus J. Tillmann, who adopted the definition of socialization formulated by Dieter Ciuden and K. Hurrelmann. According to it, socialization is the process of "formation and development of personality taking place in mutual interaction with the socially transmitted social and material environment. Although, this especially relates to how a person becomes an entity capable of social action." The personality of children from large families is to me, according to the translation by Hurrelmann , a specific, structure of characteristics, properties, attitudes, competencies of action individual for each person. It consists of feelings, motivation, knowledge, attitudes towards different values.

Applying an interdisciplinary approach to the general social functioning of a child in school, I would also like to refer to Hurrelmann's approach , according to which a child from a family with many children should be treated as "a being creatively re-creating and mastering the inner and outer reality."

Thus, the functioning of a child from a large family is expressed by its intra-family and intra-school socialization. The consequence of this approach is to emphasize the aspect of the family's socializing function, which is evident in the three school roles taken on by the child: a student, a peer, a member of the school community. This perspective indicates the course of socialization in specific social roles, and in normative, evaluating categories.

Literature suggests that the social role is a socially defined and specified group of rules and expectations regarding the desired behaviour of an individual in specific situations . Therefore, diagnosing how a child from a large family functions at school, and specifically in social roles, means assessing to what extent s/he meets certain social expectations - bans and orders within a given role.

The social role of the child from a large family is presented in my discussion of theoretical-empirical considerations as a compilation of the different roles involved, i.e.:

- the role of the student (gaining knowledge and skills)
- the role of a peer (a member of a peer group),
- as a member of the school community (school community and "sides" in relations with the institution of school).

#### Discussion of author's research results

Assuming that the socialization function of families and schools should currently be a priority, I have focused my research interests on these two environments. The research was conducted in the school year 2008/2009 in the Świętokrzyskie Voivodeship and included 200 large families (201 students and 200 parents) from which children attended junior-high school .

In the research I used the diagnostic survey and case-study method, applying survey techniques (customized tools - a questionnaire for student and parent) and standardized tool - the questionnaire by E. Zwierzyński and A. Matuszewski - "I versus the class", "The class versus me" and the sociometric technique by J.L. Moreno.

The main research question came down to: What is the process of socialization of a child from a large family?

In stating the answer to this problem, answering particular research questions proved helpful, namely:

1. How does a child from a large family function in the role of the student?
2. How does a child from a large family function as a friend?
3. How does a child from a large family function as a member of the school community?

The functioning of a child from a large family in a social role in the school environment primarily means entering into relationships with other people - teachers, students, as well as elements not related to features specific for school situations.

When you try to outline the most important relationships and characteristics that comprise the different social roles performed by a child from a family with many children, the subject of diagnosis become the role of the student – in accordance with the indicators accepted by me, i.e. possibilities to carry out school responsibilities, educational achievement or failure, interests and talents, relationship with teachers, school attendance, motivation to learn, educational and occupational aspirations of the student, students' own opinion - a subjective assessment

of what kind of student the child is, the parents' attitude towards learning and school duties of the child, parents' educational aspirations in relation to the child, aid in studying, parents' contact with the school.

Within the tested junior-high school, the students that dominated were the ones who were characterized by an average level of educational achievement both among boys and girls. A high level of achievement was identified by 54 participants, representing 27% of the respondents, while only 3 persons (1.5%) comprised the low level of achievement. The obtained data allowed to form the conclusion somewhat different from previous ones, that is, large families do not have to be an environment threatening proper socialization of the child in the role of a student, expressed in a child's educational achievements.

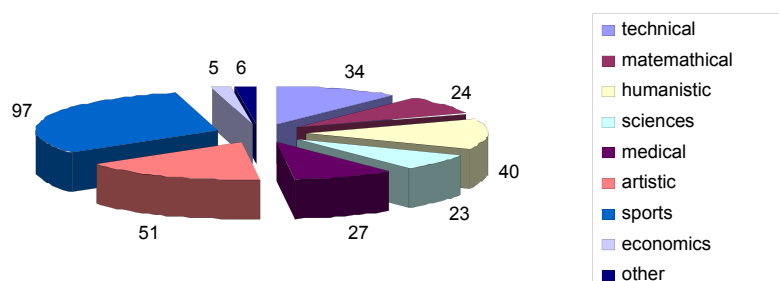
From the pedagogical point of view, an important result also appeared to be the statistical relationship between the subjective self-assessment of what kind of student the child from a large family regards him/herself to be and his/her number of siblings (Table 2).

Among the participants, the vast majority - 126 people (63%) assessed themselves as average students. This group was dominated by students with two siblings (36%), followed by students having three sisters/brothers (19%). In third place, in terms of frequency of choice, was the group describing him/herself as a very good student. Such choices were made by junior-high students having two, three or four siblings - a total of 70 respondents (35%). Only 4 persons (2%) regarded themselves as being weak students. They were the representatives from families with three or four children.

Students with the largest families (2+6, 2+7) regarded themselves as average students. They accounted for approximately 3% of participants.

Participating junior-high students also pointed to having a variety of different interests. Prevailing among them was an interest in sports (97 persons, i.e. 45.3%), which, included among others, dance. Further, artistic (51 persons, i.e. 25.4%), humanistic (40 persons, i.e. 19.9%) and technical interests, mainly computer science (34 persons, i.e. 16.91%). A smaller group of respondents - 27 people (13.4%) indicated medical subjects as a source of interest, 24 (11.9%) - Maths, 23 people (11.4%) - Science. Only 5 participants (2.4%) declared an interest in Economics, and 6 (2.9%) in other.

Chart I. Junior-high school students' types of interests



Source: own research

\* Note: Total answers > 100% because some respondents indicated multiple interests

The role of a peer was determined using the following indicators: the ability to engage in conflict-free peer relationships, the level of social skills (socialization), social position among peers (sociometric position, peer acceptance, lack of peer acceptance, feeling of comfort in school classroom), participation in informal social, peer and subculture groups. The research procedure also took the subjective aspect of playing this role by a child from a large family into account, i.e. the individual perception of the role from the child's perspective and his/her assessment. To achieve this goal, the standardized research tools already mentioned above - "I versus the class" and the sociometric questionnaire by J. L. Morena helped to achieve this goal. Additionally, as part of the mentioned role, I have extracted unusual profiles, further specified by the individual case-study method, which simultaneously constitutes the qualitative dimension of the research.

Social interaction, being a direct means of socialization, is shaped by the social environment in which the child plays the role of a peer.

Among the sample, the vast majority of respondents (119 persons, i.e. 59.2%) feel good among his/her classmates. This group was mostly dominated by girls (75 persons, i.e. 37.3%). The feeling of very good well-

being among peers was represented by 56 respondents (27.8%). An interesting fact is that the views of young people that feel very good among classmates polarize themselves – i.e., in terms of numbers, they are similar in both girls and boys. Regardless of this, the so called average well-being was identified among 24 of the surveyed junior-high school students (11.9%). Only one person appeared to be clearly uncomfortable, i.e. s/he felt bad.

Analysis of the results of my own research allowed to conclude that the majority of junior-high school students identified themselves only with their class peer group (160 people). Only 62 participants associated themselves with local environmental groups related to their place of residence. Only a few junior-high school students belong to other associations and youth organizations. Only 5 people further develop their interests through its participation in various extracurricular activities.

Referring to perception of the child from a family with many children as unacceptable by the other students in different time frequencies, a clear dominance was evident (88 persons, representing 43.7%) of junior-high school students who had never experienced bullying and "being made fun of". 50 people (24.8%) rarely felt such behaviour, 40 (19.9%) from time to time. Disturbing is the fact that as many as 21 subjects (10.4%) stated they are teased or made fun of by their classmates.

Pointing to the qualitative dimension of the empirical research, an analysis of the research material obtained through the use of the sociometric questionnaire and two out of seven unusual clusters among children from large families are provided below.

After all members of the study group were given the specially considered and formulated questions concerning the studied problem, the answers to each question were collected. Respondents used codes assigned to individual surnames of the members of the study group, who in their opinion, met the requirements stated in the question. Thanks to this advanced technology, sociometric position of the children from large families in the class group was determined. The tool using this technique was a questionnaire which contained eight questions. The subjects had to choose three partners due to some necessity. If they provided the codes of three people with whom they would like to perform a certain action, they were also required to provide the codes of three people with whom they would not want to perform the task. The questions were as follows:

- 1a) Who would you like to share your interests with?
- 1b) Who would you not like to share their interests with?
- 2a) Who would you like to go on vacation with from your class?
- 2b) Who would you not like to go on vacation with from your class?
- 3a) Who would you like to prepare a pair-work project with?
- 3b) And who would you not like to prepare this project with?
- 4a) Who would you leave in class to look after your personal belongings?
- 4b) Who would you not leave in class to look after your personal belongings?

A complete picture of the social situation of students from families with many children is shown in Table 124, representing an analysis of responses to individual sociometric questions.

Analysis of percentage results of the test shows that junior-high school students with four, five or six siblings received lower ratios of sociometric position in the class than students from families with two or three siblings.

The students belonging to the first two sociometric groups have a positive reputation among peers, are liked and fully accepted, which facilitates their identification with the group and active participation in the life of the class. And thus the position of the sociometric star was characterized by 6.0% of respondents from families with two and 4.5% with three siblings. The least, only 2.5% of respondents, were in the group of sociometric stars from families with the number of siblings higher than three. Full acceptance by the class was received by almost the same number of children from families with two or three siblings (respectively 36.3% and 30%). Significantly fewer children in families of four or more children (11.1%) were fully accepted by peers from the class. Students partially accepted (located in positions of conflict, as well as enjoying being liked by peers) were the largest group of children from families with four, five or six siblings (51.6%). In families with two siblings, 21.4% of the junior-high school students were partially accepted by their peers, the same result of sociometric position was obtained by 36.4% of respondents from families with three siblings. The number of students from different family types, partially isolated, thus treated indifferently by other peers, was comparable. Data related to total isolation was similar for students from large families with different numbers of children. Sociometric research showed that 5.8% of subjects with two siblings, 3.4% with three, and 4.2% of students with more than three siblings were partially rejected by the class. The lowest sociometric position (total rejection) was reached by 4.1% of the families with the largest number of children. Analysis of the sociometric position of the rejected students, meaning those who are perceived as having a negative attitude, indicates that families with four children only comprised 2.6%, and the lowest percentage in this sociometric group was achieved by students having two siblings (0.9%).



Table 1. Sociometric positions of the studied junior-high school students from large families in the class context (N=201)

Types of sociometric position		Number of siblings		Sociometric questions				Average percentage		
1a and 1b		2a and 2b		3a and 3b		4a and 4b				
N	%	N	%	N	%	N	%			
Sociometric star	two	6	5.1	8	6.8	6	5.1	8	6.8	6.0
three	4	6.1	3	4.5	2	3.0	3	4.5	4.5	
four or more	1	5.5	1	5.5	0	0.0	0	0.0	0.0	2.8
Total acceptance	two	42	35.9	45	38.5	39	33.3	44	37.6	36.3
three	21	31.8	15	22.7	20	30.3	23	35.0	30.0	
four or more	2	11.1	1	5.5	3	16.6	2	11.1	11.1	
Partial acceptance	two	22	18.8	27	23.1	32	27.3	19	16.2	21.4
three	32	48.5	28	42.6	21	31.8	15	22.7	36.4	
Four or more	7	39.0	9	50.1	10	55.8	11	61.3	51.6	
Partial isolation	two	25	21.4	25	21.4	18	15.4	22	18.8	19.3
three	5	7.6	15	22.7	13	19.7	17	25.7	18.9	
four or more	3	16.7	4	22.3	3	16.6	3	16.6	18.1	
Total isolation	two	10	8.5	8	6.8	13	11.1	18	15.4	10.5
three	1	1.5	2	3.0	4	6.1	4	6.1	4.2	
four or more	2	11.1	2	11.1	1	5.5	1	5.5	8.3	
Partial rejection	two	10	8.5	3	2.6	9	7.8	5	4.4	5.8
three	1	1.5	2	3.0	4	6.1	2	3.0	3.4	
four or more	2	11.1	1	5.5	0	0.0	0	0.0	4.2	
Total rejection	two	2	1.8	1	0.8	0	0.0	1	0.8	0.9
three	2	3.0	1	1.5	2	3.0	2	3.0	2.6	
four or more	1	5.5	0	0.0	1	5.5	1	5.5	4.1	
Total	two	117	100.0	117	100.0	117	100.0	117	100.0	100.0
three	66	100.0	66	100.0	66	100.0	66	100.0	100.0	
four or more	18	100.0	18	100.0	18	100.0	18	100.0	100.0	

Source: own research.

In summary, during discussion regarding the position of the child from a large family in the classroom (sociometric position of children from large families), it should be noted that these children are generally accepted by social groups. The surveyed junior-high school students were dominated by partial and complete acceptance by the class, especially among groups which were mostly representative in terms of their number of siblings, i.e. subjects with two or three siblings. Furthermore, we found that children from large families, in which the largest number of children are raised, are students located in a position of conflict and at the same time, are accepted by his/her classmates.

At a further stage of research, the qualitative analysis allowed to distinguish special, individual cases of children from large families in comparison to the group. This proves that the isolated individual cases created specific profiles.

In order to provide a comprehensive diagnosis of a child's functioning as a member of the school community, I focused on analysis of the "apart-from-didactic" relationship with teachers, positive relationships with the teacher, the child's relationship towards school, school regulations and requirements of discipline, involvement in school life, adaptation (and how it is perceived) to the school environment, representing the school from the outside and care for its common property.

Among the studied youth, a clear majority liked school (183 persons, i.e. 91%). Negative answers were given by only 18 people (8.9%). This may indicate a desire to attend school, which is the only second to the family, environment organizing individual activity during adolescence.

The study also analyzed the impact of motivating educators and positive relationships apart from the merely didactic. As many as 90 of the participants (44.7%) confirmed that educators were perceived by young people as a positive motivator, positively affecting their students and assisting them in choice making and problem solving. Unfortunately, uncomfortable is the fact that the majority of respondents - 111 people (55.2%) did not express an opinion about the positive teacher-class relationship.

## Conclusions

The figures presented above represent only a small part of broader research and analysis. Thus, the summary of only a few aspects of the school social functioning (socialization) of children from large families is presented through three social roles.

Literature on the subject emphasizes that socialization is a group function. If the family is to socialize, it should be large. This relationship is evident among the opinions of the studied adolescents. These indicate that: the higher the number of siblings, the higher the level of socialization.

Large families may contribute to society because they are still, in fact, a "social-educational institution" which is confirmed by empirical studies. Multiplicity of interactions within a large family leads to children's positive attitudes towards school, willingness to participate in school peer groups, higher self-esteem in terms a child's own perception of him/herself, and being accepted by the remaining members of the class.

Referring to the data given in the article, defining these social roles of a child from large families, it may be concluded that so-called. "social segregation" occurs, which is expressed, among others, in the average level of educational achievement of the child from a family with many children.

In general, it may be stated that large families are an appropriate environment facilitating the socialization of a child. Proof of this statement is: optimal self-esteem of the surveyed junior-high school students, with a tendency to rather over- than underestimate themselves, diversity of interests, a definitely positive and very good feeling of well-being among peers, peer acceptance, belonging to a peer group and a positive attitude towards the institution of school.

It can be concluded that the surveyed junior-high school students from large families are characterized by perseverance in pursuit of a goal, not needing extra motivation from a teacher-educator. They are motivated to achieve success, which is evidenced by the fact that more than half of the respondents do not indicate a positive motivating relationship with the teacher. It can also indicate a lack of a teacher authority figure.

In conclusion, the studied large families do not comprise the so-called "socially impaired groups". Socialization occurs properly within them. As stated by Patrick J. Renihan, young people, including those examined by me, often maintain extensive contact with each other and their peers. Rarely are they isolated. They learn patterns of behaviour from each other, having a kind of mirror of their own person in their brothers or sisters. Growing up with several siblings contributes to the development of creativity, especially when children are of different sexes. They teach each other openness, unconventional behaviour, shaping various social roles.

Thus, the final conclusion, regardless of how large is the family, it may create proper conditions for the socialization of children.

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# The structure of rewards and punishments in the work of teachers in Slovakia and the UK

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## Abstract

An important part of the educational process is the motivational component. The part of student's motivation is the work with rewards and punishments. The contribution is focused on comparison of the structure of rewards and punishments in the work of teachers in Slovakia /N=20/ and the UK /N=20/ from the point of view of teachers as well as pupils. The research was also attended by 156 pupils aged 9-11, while 77 children were examined in the 4th and 5th year of primary school in Slovakia and 79 children in the 5th and 6th year of primary school in England. The results show, that the intercultural differences in the system of education are also reflected in the perception of rewards and punishments of students in England and Slovakia.

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*Keywords:* rewards, punishment, educational process, Slovakia, Great Britain;

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## Introduction

The important means of education are certainly reward and punishment. They have a particular motivational and informational value. There are some general guidelines for the use of rewards and punishments in the upbringing of the child (Matejček, 2007):

- The adequacy to the child's personality and age - with age, the effectiveness of rewards and punishments changes.
- Clarity of rewards and punishments - especially in the case of punishment the child should be fully aware, for what is punished.
- The richness and segmentation in the system of educational resources - constant repeating of the same sentence or reward has the consequence that the child will stop noticing them, they lose their effectiveness.
- Avoiding exaggeration in rewards and punishment - too strong the use of rewards and punishments from the beginning robs the educators the opportunity to appropriately reward or punish the deed and at the same time it clashes with the previous guidance.
- Consistency in the use of rewards and punishments - if the child is once rewarded and then sometimes punished for the same thing, it creates confusion. It is also important to recognize if the conflict in the educational process takes place in two different educational settings (e.g. family and school), or with two or more educators or the problem is in the inconsistency of one educator.

When we talk about the rewards we mean a very positive motivational action, which has to reinforce the desired behavior.

From the psychological point of view the structure of remuneration has a great influence on the behavior. Van Lange (2000) distinguishes between:

- Co-operative structure of remuneration, in which individuals are interdependent, it means the achieving a personal goal for one helps others reach their goals.
  - Individualistic reward structure in which individuals are completely independent of one another, it means achieving a personal goal for one has no impact on the achievement of the objectives of the others.
  - Competitive remuneration structure in which individuals are undesirably dependent of one another, it means that achieving a personal goal for one person reduces the ability to achieve the objectives of the others.
- The above mentioned facts show that the cooperative structure of remuneration create more favourable social environment, eliminate mistrust and animosity. On the other hand, competitive and individualistic structures increase productivity in tasks where individuals are not dependent on mutual assistance.

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Not only rewards but also penalties are important educational means. We understand punishment as a result of breaking the rules, discipline, binding rules, the breach, and the like (Brozmanová, Cabanová, 2006). The punishment should interrupt unwanted behavior, respectively induce remedy. It supposes the subsequent creation of conscious restraint in order to avoid punishment in the future.

In this context the climate in the classroom shows to be of a great importance. Hamranová (2011) and Šramová (2013) points out that where there are good relationships in the classroom the teacher can work with pupils much better and does not need to use many punishments. In teaching practice, we can conclude that the system of positive rewarding of the desirable behavior and undesirable behavior punishments is based on the theory of behaviorism, which was transferred to schools. In spite of the apparent use of behavioral theories in educational practice Strand, Barnes - Holmes and Barnes - Holmes (2003) give to the attention the fact that the educators tend to avoid the use of techniques based on behavioral theories. They argue that the empirical support for these techniques has been revalued. This criticism is partly based on the lack of studies investigating the use of behavioral techniques on a scale larger than individual classes (e.g. whole school). Also, little is known about the impact of this educational model for long-term child development or the development of non-academic competencies such as prosocial behavior.

In relation to education and training at school problem behavior of students is increasingly mentioned at the present. That important issue is also presented in study Rosinsky at al. (2009). The incidence of pupils with behavioral problems is constantly increasing and teachers must constantly find new, effective ways of tackling the discipline in their classes. Intercultural differences in educational systems in Slovakia and the UK suggest that teachers have different ways of coping behavior and attitudes of pupils. In our research, we wanted to know what rewards and punishments are the most preferred by teachers in Slovakia and the UK and what is the view of pupils in Slovakia and the UK to reward and punishment.

We have formulated the following questions:

Are there any differences between teachers in Slovakia and England as far as the types of the most commonly awarded rewards and punishments are concerned?

Are there any differences between boys and girls as far as the types of the most effective rewards and punishments are concerned?

Are there differences between pupils from Slovakia and England in the perception of rewards and punishments?

## 2. Methods

### 2.1 Participants

In London, the research participated 79 children 5th and 6th grade of elementary school (primary school). In the survey sample, 41 girls and 38 boys and 22 teachers aged 30 to 50 years, including 20 women and 2 men. In Bratislava research sample consisted of 77 children 4th and 5th grade (41 girls and 18 boys) and 22 teachers aged 30 to 50 years.

### 2.2 Measures

We used the questionnaire method in the research. We have compiled questionnaires for pupils and teachers. The questionnaire for students comprised 14 open-ended questions in which children were to describe how they perceive rewards and punishments. Teachers in Slovakia and the UK were firstly given the questionnaire containing 15 open questions. Their answers had to show us their view on the efficiency and transparency of the system of rewards and punishments in the process of education use. It was used as a second "register rewards and punishments" in which teachers should select those rewards and punishments in their work.

## 3. Results

From the table 1 we see that the structure of remuneration, granting teachers in the UK and Slovakia varies considerably. Teachers in Slovakia most frequently used verbal praise and written praise, teachers in England stamps, stickers and verbal praise also. Almost a quarter of Slovak teachers awarded the mark as a reward. For English teachers that have not even once on the other hand, quite often grant Teachers' collective reward you do not teachers in Slovakia. In English Schools seeks to foster team spirit class, each pupil's conduct may contribute to the achievement of pay for the whole class.

Table 1. The most commonly awarded rewards from the perspective of teachers.

mark	verbal praise	written praise	stamps & stickers	material reward	collective reward	director's praise
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SK	5	18	8	5	3	0	0
UK	0	7	4	21	3	6	1

From the table we see that the structure of remuneration, granting teachers in the UK and Slovakia varies considerably. Teachers in Slovakia most frequently used verbal praise and written praise, teachers in England stamps, stickers and verbal praise also. Almost a quarter of Slovak teachers awarded the mark as a reward. For English teachers that have not even once on the other hand, quite often grant Teachers' collective reward you do not teachers in Slovakia. In English Schools seeks to foster team spirit class, each pupil's conduct may contribute to the achievement of pay for the whole class.

Table 2. The most frequently awarded sanctions from the perspective of teachers .

	oral admonition	written admonition	mark	written punishment	isolation
SK	12	12	2	6	6
UK	7	1	0	0	26

Regarding penalties and Slovak teachers frequently use oral and written reprimand and Teachers' isolation from the team and its oral reprimand. According to the results, the structure of remuneration does not differ by sex, but the country. Slovak teachers awarded more than verbal rewards and marks boys and girls and English stamps, stickers and special activities and collective rewards.

Table 3. The most effective reward for girls from the teacher's viewpoint.

	mark	verbal praise	written praise	stamps & stickers	material reward	collective reward	director's praise
SK	9	12	4	4	2	1	1
UK	0	2	3	2	12	1	6

Table 4. The most effective reward for boys from the teacher's viewpoint.

	mark	verbal praise	written praise	material reward	stamps & stickers	public reward	special activity	collective reward
SK	7	11	5	4	1	1	0	0
UK	0	0	3	0	9	1	12	6

When sentencing a difference in Slovak teachers - girls are more verbally scolded and boys in writing and English dominate the boys and girls team from isolation.

Table 5 The most effective punishment for girls from the teacher's viewpoint.

	oral admonition	written admonition	mark	isolation	written punishment	I do not punish	director's admonition
SK	9	6	5	5	2	1	1
UK	6	0	0	20	0	0	0

Table 6. The most effective punishment for boys from the teacher's viewpoint.

	oral admonition	written admonition	mark	isolation	written punishment	I do not punish	director's admonition	exclusion
SK	3	9	5	10	4	1	1	0
UK	3	1	0	21	0	0	0	1

Table 7. The most desirable reward from the pupils' viewpoint.

	mark	verbal praise	written praise	material reward	public reward	special activity	others
SK	34	10	1	21		4	2
UK	2	0	3	50	9	18	2

Even in the structure of the most desirable remuneration there is a big difference between Slovak and English students. While among Slovak students a mark followed by material and oral rewards, respectively public praise prevailed, the English pupils preferred material rewards (games, books, computers, small toys ...) followed by special activities (sports activities, hobby room, party ...).

Table 8. The heaviest punishment from the pupil's viewpoint.

	written admonition	isolation	mark	written punishment	talk with the Director	exclusion	others
SK	5	7	23	11	17	16	5
UK	1	26	0	1	1	49	4

Slovak pupils regarded marks as the worst punishment, interview with the director and exclusion are not so bad to them. English pupils consider exclusion and isolation from the team to be the worst punishments.

The results showed significant differences in the structure of rewards and punishments awarded by Slovak and English teachers. They did not show differences in rewards and punishments awarded in terms of gender. Slovak teachers most commonly used oral and written praise, English teachers stamps, stickers and special activities. In particular, special activities and collective rewards are not used by Slovak teachers. Collective rewards promote cooperation, which is certainly desirable. From the perspective of Slovak pupils the marks highly dominated, what we consider as a negative, because the marks only primarily reflect the assessment of knowledge, skills.

Differences were also shown at punishing. Slovak teachers prefer both verbal and written reprehension. The English teachers prefer isolation from the collective. English teacher has the opportunity to send a problem child to so called „Time out” in another class or to so-called "Detention" which is the time for children to reconsider their behavior. If this kind of punishment is proven to be that effective at schools in England, it would be appropriate to add it to the repertoire of the Slovak teachers.

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# The study of concepts understanding and using competence of teachers in educational innovation and technology for teaching management at schools of the unrest areas of three southern border provinces of Thailand

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## Abstract

This research study aimed to determine the understanding of concepts and use of competence of teachers in using educational innovation and technology (EIT) for teaching management. And also, to investigate the internal and external factors effecting teachers for applying EIT to their instructions at schools in the areas of unrest in three southern border provinces (3SBP) of Thailand. Questionnaire and group interview protocols were used. With 87 % return rate of completed surveys, it is shown that (1) the level of concepts understanding of teachers in EIT for teaching management was at high, (2) Teachers working in different affiliations have statistically significant in using computer software and computer-based learning for teaching management, and (3) Teachers teaching under the Basic Education Commission school have a higher level of using competence in computer software and computer-based learning than teachers who teach under Islamic private school. Key findings from focus group discussions revealed strengths, weaknesses, opportunities and threats that effected teachers in applying EIT to their teaching.

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*Keywords:* Educational innovation and technology, using competence, concepts understanding, teaching management, teachers, the unrest areas

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## Introduction and objectives

Education is an important mechanism for quality development of citizens. Any country with better quality citizens allows that country to move forward faster and more competitively with others. One of the major keys to improve the quality of citizen is education as Gregoire, C. (2014) said, "Education is the foundation upon which we build our future." In fact, education has been put to a great priority globally and Thailand is no exception. The Ministry of Education of Thailand plays an important role making education accessible anywhere and everywhere for all types of learners. The vision of a new educational framework in Thailand is reflected through the following; National Education Act 1999, the National Educational Standards, and Professional Standards, Information and Communication Technology Policy Framework Act period 2011-2020. In 1999, the Ministry of Education announced 4 main education reform policies under the national education act 1999: (1) schools and institutions reform, (2) teacher and educator reform, (3) curriculums and learning processes reform, and (4) educational administration system reform. The policies were given with the purpose of promoting the quality of the learners to an equivalent level with other countries in the developing world both academically and characteristically.

Even though the knowledge-based society has always been promoted among learners in Thailand, we are still facing difficulties in competing with other countries. The teaching systems in Thailand are mostly relying on face-to-face communication in classrooms, which is not effective for all types of learners. However, by applying EIT into a traditional classroom, teachers are able to create a new learning environment. The new learning environment helps attract learners to pay more attentions, allow them to be more engaged, and encourages them to have continuing motivation toward education. As a matter of fact, the applications of EIT in teaching are yet to be seen as common to classrooms in Thailand. Only 26 percent of schools, nationwide, are able to provide

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learners with high-speed internet. It is only 10 percent in unrest areas of 3SBP. In addition, overall, the application of technology to teaching management has been used in school as low as 33 percent. Only 30 percent of teachers have confidence for using modern information technology (Nakornutap, A., 2007).

Thus, the study of the concepts understanding and using competence of teachers in EIT for teaching management at schools in the unrest areas of 3SBP is needed in order to get a better understanding towards EIT and teachers who work in these areas. Also, the assessment of the internal and external factors effecting teachers in applying EIT to their teaching is an essential step before the improvement of teaching management can be done.

In this manuscript, the objectives are (a) to determine the concepts understanding of teachers in educational innovation and technology in teaching management at schools in the unrest areas of 3SBP of Thailand, (b) to determine the use of competence of teachers in educational innovation and technology in teaching management at schools in the unrest areas of 3SBP of Thailand, and (c) to investigate the internal and external factors effecting teachers who work in the unrest areas of 3SBP of Thailand, in using EIT.

## **Research methodology**

This research is two main parts: (a) The study of understanding of concepts and the use of competence of teachers in EIT at schools in the unrest areas of 3SBP of Thailand, and (b) The study of internal and external factors effecting teachers in using EIT to their teaching.

### *The study of understanding of concepts and the use of competence of teachers in EIT at schools in the unrest areas of 3SBP of Thailand*

The research study was conducted by using quantitative methods throughout the survey research. The analysis involved schoolteachers from 15 educational regions of 3SBP of Thailand. The sample was 2,800 teachers selected by simple random sampling methods from 24,371 teachers with different affiliations; Basic Educational Commission, Private Education Commission (private school and Islamic private school), and Municipal Education Commission, from 15 educational regions in Yala, Pattani, and Narathiwat.

### *Research instrument*

The questionnaire consisted of three parts:

Part I: Personal information of teacher including age, gender, work affiliation, education level, teaching experience, and training experience in EIT.

Part II: A questionnaire with 11 items aiming to investigate the understanding of concepts of teachers in EIT at the schools in the areas of unrest in the 3SBP of Thailand. It contained a 5-item rating scale questionnaire.

Part III: A questionnaire with 8 items for investigating the use of competence of teachers in EIT at schools in the areas of unrest in 3SBP of Thailand. It contained a 4-item rating scale questionnaire

### *Data collection*

The researcher coordinated with the research coordinators to distribute questionnaire to teachers as respondents at schools in 3SBP of Thailand. The research coordinators collected and sent the questionnaire back to researcher both in person and via post mail.

### *Data analysis*

To determine the concepts understanding of teachers in EIT: the descriptive statistics of arithmetic mean, frequencies, and standard deviation were used to describe age, gender, education level, teaching experience, and training experience in EIT. In addition, it was also used to measure the understanding of concept level of teachers in 11 element concepts of using EIT to their teaching.

To determine the use of competence of teachers in EIT: the descriptive statistics of arithmetic mean, frequencies, and standard deviation were used to describe the respondents related between different affiliations; Basic Educational Commission, Private Education Commission (private school and Islamic private school), and Municipal Education Commission. In addition, it was also used to measure the level of using competence of teachers in 8 instructional media, equipment, and educational technology facilities. Further, One-way ANOVA and Dunnett's test were used in order to compare the use of competence level of teachers in EIT at schools that



subordinate to different affiliations.

*The study of internal and external factors effecting teachers in using EIT to their teaching at schools in the unrest areas of 3SBP of Thailand*

The research study was conducted by qualitative methods throughout the survey research or mixed method. The analysis involved educators, scholars, and schoolteachers who work in the areas of unrest in 3SBP of Thailand. The sample was 30 educators, scholars, and teachers who were selected by simple random sampling methods. The focus group discussion members were divided into 3 groups of 10 participants. In each group, the researchers provided one facilitator to lead the discussion topics.

*Research instrument*

The focus group discussion consisted of 2 sessions: (a) Morning session: discussed the internal factors (strengths and weaknesses) effecting teachers in using EIT to their teaching. (b) Afternoon session: discussed the external factors (opportunities and threats) effecting teachers in using EIT to their teaching.

*Data Collection*

The researcher coordinated with the facilitators in each discussion group to ask for permission of the group participants to do voice records and notes taking from the discussions. So, the researcher gathered all information during and after each discussion.

*Data analysis*

A SWOT analysis, structured planning method used to evaluate the strengths, weaknesses, opportunities, and threats, was performed during each sessions of discussion.

**Research findings and discussion**

*Research objective one: To determine the understanding of concepts of teachers in EIT in teaching management at schools in the unrest areas of 3SBP of Thailand*

Overall (see Table 1), the level of concepts understanding of teachers in EIT for teaching management at schools in the unrest areas of 3SBP of Thailand was at moderate level (mean = 3.23, SD = 0.97). It is lower than the level of understanding of concepts of teachers in 14 provinces in southern Thailand. The level of concepts understanding of teachers in 14 provinces in south Thailand was at high (Chotikan, S. 2011). Comparing each of the 11 concepts in EIT, teachers understood the concept of educational innovation in education reform best and the level of

Table 1. Means and standard deviations for 11 element concepts of educational innovation and technology classify by age, gender, level of education, teaching experience

Concept of Educational Innovation and Technology	Overall			Age (years old)				Gender		Education Level		Teaching Experience (years)			
	n	Mean	SD	below 30	30-39	40-49	50 or older	Male	Female	U.grad	Grad	1-5	6-10	11-19	20 or more
1. Concept of educational technology in physical science: computer, television, camera, audio visual, etc.		3.31	0.9	3.4	3.33	3.23	3.27	3.42	3.26	3.32	3.43	3.38	3.31	3.29	3.22
2. Concept of educational technology in social science: software, paper, teaching method etc.		3.33	0.86	3.41	3.36	3.26	3.27	3.41	3.29	3.34	3.45	3.4	3.33	3.31	3.24
3. Educational innovation in education reform: learner-centered		3.63	0.85	3.72	3.64	3.54	3.62	3.68	3.61	3.64	3.69	3.7	3.58	3.61	3.58
4. Instructional media: instructional packages, program instruction		3.54	0.92	3.66	3.55	3.47	3.44	3.59	3.51	3.55	3.55	3.64	3.48	3.53	3.42
5. Active learning		3.38	0.92	3.43	3.38	3.37	3.33	3.46	3.35	3.38	3.41	3.42	3.43	3.37	3.29

6. Educational management innovation in school: Sattayasai School, Lumpaimaspattana School	3.01	1.01	3.13	3.02	2.9	2.96	3.12	2.95	3.02	3.01	3.11	3.04	2.92	2.9	
7. Supervision of educational innovation and technology, and learning resources	3.24	0.82	2.71	2.72	2.66	2.58	2.74	2.64	2.68	2.75	2.76	2.68	2.64	2.56	
8. Administration of educational innovation and technology in school	3.48	0.8	3.39	3.25	3.09	3.16	3.33	3.19	3.24	3.29	3.37	3.22	3.13	3.1	
9. Educational technology integration in computer	3.5	0.9	3.29	3.17	2.99	2.96	3.27	3.05	3.13	3.2	3.23	3.16	3.12	2.9	
10. Educational technology for learning in audio-visual: Microsoft office power point	3.34	1.1	3.73	3.39	3.13	2.98	3.43	3.28	3.33	3.75	3.56	3.44	3.17	2.96	
11. Educational innovation and technology in new learning environment: CAI, WBI, virtual classroom, etc.	2.9	1.1	3.12	2.91	2.82	2.67	3.03	2.83	2.9	3.11	3.03	2.96	2.8	2.69	
Total	2449	3.23	0.97	3.36	3.25	3.13	3.11	3.32	3.18	3.23	3.33	3.33	3.24	3.17	3.08

understanding was at high (mean = 3.63, SD = 0.85). On the other hand, teachers understood the concept of EIT in new learning environment least (mean = 2.90, SD = 1.1) and the level of understanding was at a moderate level. Teachers with different age, gender, education level, and teaching experience have different level of concepts understanding toward EIT for teaching management. It conforms to the research results of Jittasiri, A. (1998) which reported that the factors of concepts understanding of EIT users are affected by age, level of education, number of years working with each innovation.

*Research objective two: To determine the use of competence of teachers in EIT in teaching management at schools in the unrest areas of 3SBP of Thailand*

Overall (see Figure 1 and Table 2), the level of using competence of teachers in instructional media, equipment, and educational technology facilities at schools in the areas of unrest in 3SBP of Thailand was low (mean = 2.0, SD = 0.66). One of the reasons is that many insurgent incidents took place in the areas of schools which destroyed the school infrastructure where teachers kept their small number of educational technology tools. Only the use of competence level of teachers in computer software was the highest, which was at moderate level (mean = 2.64). On the other hand, the use of competence level of teachers in computer hardware was the lowest, which was at low level (mean = 1.03). In comparing of the competence of teachers, who work under different affiliation, in instructional media, equipment, and educational technology facilities at schools in the unrest areas of 3SBP of Thailand, there was no statistically significant difference in audio-visual equipment, audio-visual material, multimedia, computer hardware, long distance learning, and learning facilities (Table 3). This may be caused by the same level of accessibility of teachers to each technology, since they are living in the same area of educational region. So they received the same level of school budget even the schools are not subordinate to same affiliation. However, there was statistically significant difference in computer software and computer-based learning. Table 4 and Table 5, the level of use of competence in computer software and computer-based learning of teachers who work under Basic Education Commission (BEC) was higher than teachers who work under Islamic Private Educational Commission. This may be happened because of the different policy enforcement of each affiliation. The schools under BEC received the policies from the Office of Basic Education Commission (Bangkok) while the schools under private education commission can have their own policies toward educational technology.

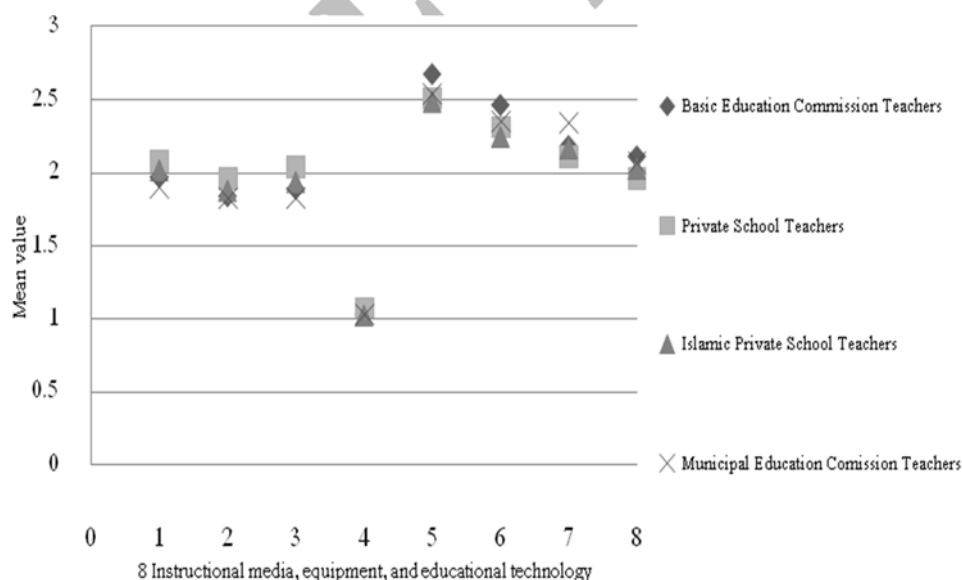


Fig. 1. Using competence level (means value) of teachers from different affiliations in 8 instructional media, equipment, and educational technology

Table 2. Using competence level (mean value and standard deviations) of teachers from different affiliations in 8 instructional media, equipment, and educational technology

Using competence	Overall			Basic Education Commission Teachers			Private School Teachers			Islamic Private School Teachers			Municipal Education Commission Teachers		
	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD

1. Audio Visual Equipments	2180	1.98	0.54	1782	1.97	0.53	16	2.08	0.49	288	2.02	0.58	94	1.9	0.58
2. Audio Visual Materials	2135	1.85	0.56	1738	1.84	0.56	16	1.96	0.64	291	1.88	0.59	90	1.83	0.61
3. Multimedia	2001	1.9	0.65	1632	1.89	0.65	13	2.04	0.72	267	1.94	0.7	89	1.83	0.6
4. Computer Hardware	2075	1.03	0.13	1704	1.03	0.13	13	1.08	0.22	277	1.02	0.09	81	1.03	0.13
5. Computer Software	1755	2.64	0.56	1414	2.67	0.54	15	2.51	0.68	253	2.49	0.63	73	2.54	0.57
6. Computer-based learning	1930	2.42	0.59	1562	2.46	0.58	15	2.31	0.72	274	2.25	0.63	79	2.35	0.52
7. Long Distance Learning	1935	2.19	0.67	1596	2.18	0.66	15	2.11	0.66	251	2.17	0.7	73	2.34	0.74
8. Learning Facilities	2077	2.1	0.6	1703	2.11	0.61	15	1.96	0.63	273	2.03	0.58	86	2.07	0.61
Total		2.00	0.66		2.00	0.65		2.02	0.87		1.97	0.73		1.97	0.69

Table 3. The result of comparing between affiliates of teachers for the use of competence

Using Competence	Source of variance	Sum of Squares	df	Mean Square	F	Sig.
1. Audio Visual Equipments	Between Groups	1.27	3	0.42	1.46	0.22
	Within Groups	633.37	2176	0.29		
	Total	634.65	2179			
2. Audio Visual Materials	Between Groups	0.57	3	0.19	0.6	0.62
	Within Groups	677.96	2131	0.32		
	Total	678.53	2134			
3. Multimedia	Between Groups	1.29	3	0.43	1.01	0.39
	Within Groups	854.79	1997	0.43		
	Total	856.09	2000			
4. Computer Hardware	Between Groups	0.1	3	0.03	2.06	0.1
	Within Groups	31.92	2071	0.02		
	Total	32.02	2074			
5. Computer Software	Between Groups	8.35	3	2.78	8.86	0
	Within Groups	549.88	1751	0.31		
	Total	558.23	1754			
6. Computer-Based Learning	Between Groups	10.77	3	3.59	10.46	0
	Within Groups	661.17	1926	0.34		
	Total	671.94	1929			
7. Long Distance Learning	Between Groups	1.96	3	0.65	1.44	0.23
	Within Groups	872.88	1931	0.45		
	Total	874.83	1934			
8. Learning Facilities	Between Groups	1.89	3	0.63	1.74	0.16
	Within Groups	750.65	2073	0.36		
	Total	752.53	2076			

Table 4. The results of comparing between the using competences of teachers in EIT

Test of Homogeneity of Variances	Levene Statistic	df1	df2	Sig.
Computer Software	9.74	3	1751	0.00*
Computer -Based Learning	2.95	3	1926	0.03*

Table 5. The result of comparing between affiliates of teachers in the using competences

Dunnett T3	Mean Difference	Sig.
Basic education commission teachers – Islamic private school teachers	0.19	0
Basic education commission teachers – Islamic private school teachers	0.21	0.02

*Research objective three: To investigate the internal and external factors effecting teachers, who work in the areas of unrest 3SBP of Thailand, in using EIT to their teaching.*

SWOT analysis aims to identify the internal and external factors seen as important to develop the teaching management at schools in unrest areas of 3SBP. SWOT analysis was performed during the focus group discussion. SWOT analysis results are presented in Figure 2.

	Favourable	Unfavourable
Internal Factors	<b>Strengths (S)</b> 1) Excellent higher education academies located in the area 2) Outstanding staffs with strong knowledge of educational innovation and technology 3) Large number of projects aims to develop academics and scholars	<b>Weaknesses (W)</b> 1) Limited budget to spend on developing educational innovation and technology at schools 2) Small number of schoolteachers with good experiences in educational innovation and technology
External Factors	<b>Opportunities (O)</b> 1) Extra budget from central government supporting projects to associate the unrest situations in the area	<b>Threats (T)</b> 1) Unrest situations in the area 2) Migration of teachers, academics, scholars, who have strong experiences toward educational innovation and technology

Fig. 2. SWOT analysis identifying the internal and external factors effecting teachers, who work in the areas of unrest in 3SBP of Thailand, in using EIT to their teaching

## Conclusions

From the study, the level of concept understanding and the use of competence of teachers in EIT at schools in unrest area of 3SBP of Thailand were still lower than it should be. It is leading to poorer teaching quality for students. Thus, it is critical for all organizations related to education development to see the importance of improving teachers' ability to apply EIT to their teaching. In addition, teachers also need to give more effort to try to improve more practice in applying EIT in classroom.

It is a sorrow for all tragic loss of life caused by separatist insurgents on teachers, students, and other education personnel. However, there is a light at the end of every tunnel. The teaching management in the unrest areas can be improved by receiving enough human resource, learning resource, and budget. So, the students will develop their ability to use EIT to encourage the continuing motivation of students to learn online courses and improve their wellbeing globally and globally in response to the Information and Communication Technology Framework Act period 2011-2020 of Thailand.

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# The teaching experience of database management for mechanical engineering students

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## Abstract

The mechanical engineering students learned the theoretical part of the database management in the first semester at Obuda University. The students had the chance to download a sample test with same example one week before the test. One part of the students downloaded this paper, the rest of students not interested for this opportunity. Our starting hypothesis was that the group that downloaded the sample test would achieve better results in the papers. Significance level was 5% through the analysis. Significant divergence in knowledge of students who downloaded the sample test and the students who were not interested for it was found. The students could get a more the one mark better paper results when they downloaded the sample test and pass the test in higher percent.

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**Keywords:** Obuda Univrsity, sample test, comparison, measuring, mechanical engineering, student, database management, knowledge level, influence

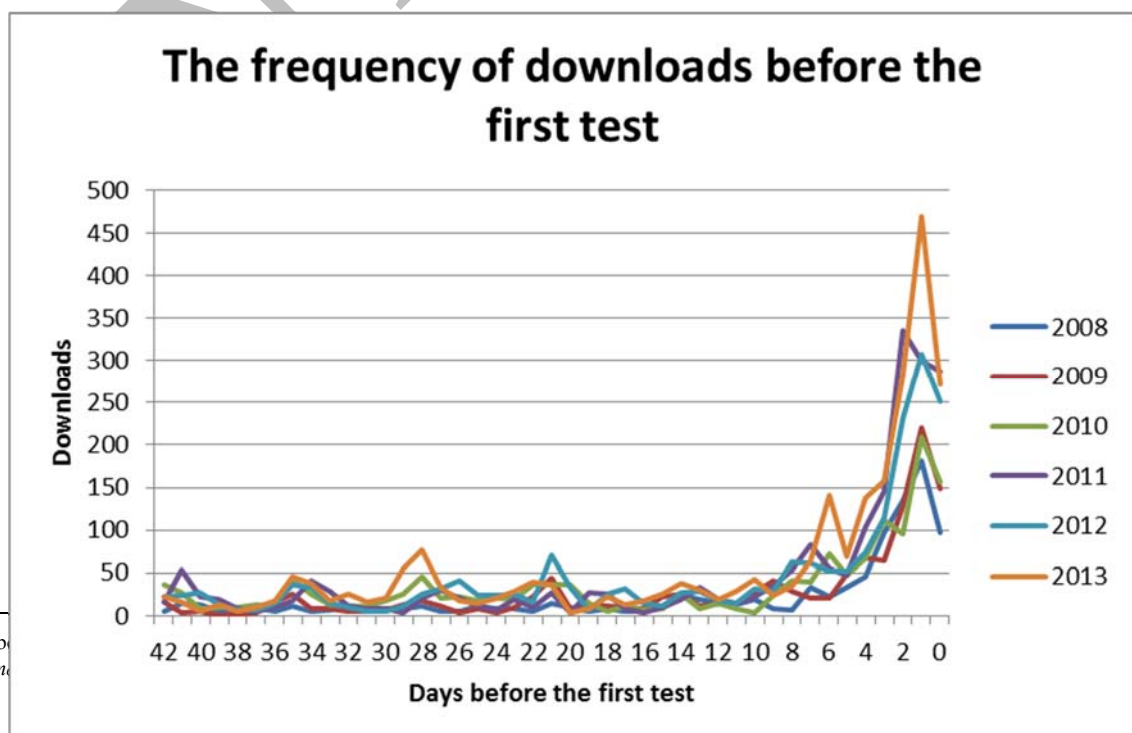
## Introduction

Aim of this research is to analyze the influence of the downloading the sample test on the test results.

The freshmen students have to pass two tests in the first semester; the first on the 6<sup>th</sup> week and the second on the 13<sup>th</sup> week.

In the first part of semester the students learned the theoretic knowledge of database management, what is difficult for the students because the see the practical part of this topic just in the 3<sup>rd</sup> semester.

Since 2007 have been downloading students the teaching material of basic Computer Science from an own developed web based system. The students got username and password to log into the system, which on the other hand saved who what and when has downloaded. It is mean, we have a huge mass of data to analyze.



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Fig. 1. The frequency of downloads of the learning material before the test.

We analyzed earlier the learning habit of the undergraduate mechanical engineering students in the last five years (Kiss, 2013) and we found the big part of students downloading the learning material one day earlier before the test or on the day of the test so they did not chance to learn is and pass the test (Kiss, 2010) (figure 1.)

We want to give more chance for the students to pass the test and try to change the wrong learning habits of the students. We have prepared a sample test what included same exercises as in the test and we shared with the students one week before the test on the webpage of the subject what can use the students.

In the sample test the students had to know some definitions (primary key, foreign key, 1st normal form, 2nd normal form, 3rd normal form, Boyce-Codd normal form, and so on), resolve some exercises (queries with relational algebra/SQL, define the primary key about the functional dependencies, decomposition, lossless checklist, entity-relationship model).

After the analyzing of the downloading of the sample test what was available one week before the test we could see the students did not wait for the last days before the test to download the sample test (figure 2.). We can see the percentage of the students who want to see and solve the sample test.

The number of students was 377. One part of students did not use the opportunity of downloading and review of the sample test before the test (88 students) (group A).

Our first starting hypothesis was that the group where reviewed the sample test would achieve better results in the papers (289 students) (group B)

Our second hypothesis was that the group where the students downloaded the sample test would achieve better results in the papers.

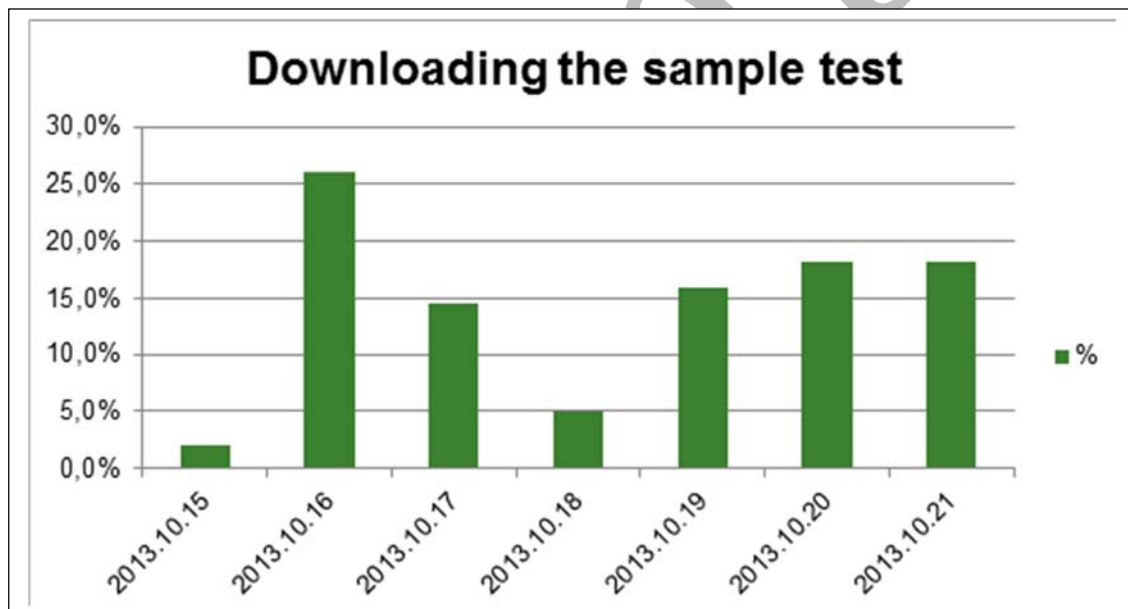


Fig. 2. The frequency of downloads of the sample test before the test.

### Analyzing of the paper results

After the test we collected the paper results by groups and we tried to analyze whether this method was helpful or not for the students. Some mathematical analysis was needed to decide whether using the sample test was helpful or not of the students in preparing to the test and get better paper results.

#### *The Number of Participants in the Tests in the Two Groups and the Values of Mean and Std. Deviation*

According to the table (Table 1.) the mean of the results of papers in group B is higher. This group wrote the papers with a better result. It does not give enough information to state that the downloading and reviewing of the sample test results in better written tests because this can happen accidentally, too. So, we needed more analyzing to keep the chance of accident low. We used the IBM SPSS Statistics v.20 by analyzing the paper results.



Table 1. Group statistics of test results.

Group	Number of participants	Mean	Std. Deviation	Pass the test
A	88	1,27	0,64	18,2%
B	289	2,45	0,96	82,4%

If we spend more time looking at this table, we can see ~83% of mechanical engineering students who downloaded the sample test could pass the test and the students who did not use this opportunity passed the test in lower percent, but we still do not know if it is a coincidence.

#### *Independent sample test*

Our null hypothesis was that the results of the paper written by the two groups of students would not differ significantly. Since we have two independent samples, we can use the independent sample test in SPSS to tell if the means of the paper of these groups differ or not (Table 2).

Table 2. Group statistics of test results.

	Levene's test for Equality of variances		T-test for equality of means		
	F	Sig	t	df	Sig (2 tailed)
Equal variances assumed	<b>39,89</b>	<b>0,00</b>	-10,80	375	0,00
Equal variances not assumed (Welch's t-test)			<b>-13,31</b>	217,04	<b>0,00</b>

An analysis of the results of the mechanical engineering students showed, the variance of two groups are different, because the value of Levene's test is significant ( $p < 0,05$ ) (Levene, 1960).

In this case the means could be compared with Welch d-test (Welch, 1947). This showed difference between the means, because the value of Welch d-test is significant ( $p < 0,05$ ). It means the download and review of sample test had influence on the results of papers of the mechanical engineering students.

#### *Measures of Association by the paper results*

Earlier, significant differences could be detected between the means of the papers written by the mechanical engineering students. It means it is profitable to make a deeper analysis to reveal the influence of the reviewing of sample test on the calculated means. We could reveal the influence with the calculation of the Eta-squared ( $\eta^2$ ) (Cohen, 1973). The calculated value in percentage shows how much grouping influences the difference between means. Square root from the Eta-squared gives a value between 0 and 1 ( $\eta$ ).

This shows the measures of association, i.e. how strong the connection between grouping and the achieved result is. The higher the value is, the stronger the connection is. In the next table we can see the calculated values and the strength of the connection (Table 3.).

Table 3. How strong the connections between grouping and the achieved paper results

$\eta^2$	$\eta$	Strength of the association
23,7%	0,49	middling connection

Calculating the Eta-squared, we tried to make the effect of the sample test on the result of the papers written percentable and got ~24%. This means there is a middle correlation existing between using the sample test until the preparing on the test and the results of the papers written by the students. It seems the students could take advantage of using sample test before the test. We can remember the students who downloaded and reviewed the sample test could pass the tests in higher percent (82% vs 18%).

## Conclusion

After the analyzing process, we can say our first starting hypothesis is correct; students get better paper results by downloading and reviewing a sample test before they write the test so they could take advantage of sample test.

We can say our second starting hypothesis is correct too; the students passed the in much more higher percentage when they reviewed the sample test. The reason for this could be the fact that the sample test has same exercise what the test include too. The learning habits off students changed too, they downloaded the sample test more smoother then the learning materials earlier because they did not wait for the last days.

We can say the using of sample test by theoretical knowledge of database management is more productive. The students can make same exercises at home before the test and they can see how difficult are they and they can find a best way to solve them.

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# The theory of legal clinic in education of law<sup>1</sup>

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## Abstract

“The Legal Clinic”, as a definition, is to teach law students how they can use their abstract and theoretical information while solving juridical disputes. Although the idea of legal clinic dates back to the past, the notion of legal clinic is a recent one. It is the reason of emerging of legal clinic that law students must get in touch with practical law comprised of activities of courts and disputes among people. About legal clinic, institutions were established and books were written in developed countries. Thus, law students became skilful at carrying out what they learn at their faculties. Nevertheless, this method being valued very much at an international level is not, unfortunately, implemented in Turkey. Hence, law students in Turkey are graduated from their faculties with only theoretical information. Consequently, they cannot make use of their information when they faced with real cases and a disconnection between theory and practice shows up. Here, this study deals with activities necessary to implement legal clinic in Turkey. In this way, the law students will learn how to use their theoretical information in practice and the partway to justice will become easy and fast<sup>2</sup>.

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*Keywords:* Legal Clinic; Legal Education; Law Clinic; Practical Law Education; Occupational Education of Legal Experts.

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## 1. The Term of Legal Clinic

A *legal clinic* or *law clinic* is a term used for defining of putting law school students' theoretical information to practice<sup>3</sup>. In other words, legal clinics are defined in the Anglo-Saxon law that they are born as a method of practical teaching which is allowing students to actively work on real cases and involving them in legal aid projects<sup>4</sup>. A legal clinic is one of the pieces of machinery used in training students who desire to become professional. It corresponds, to a large extent, in the legal field to the well-known medical clinic in the field of training for the medical profession. The legal clinic represents cooperation between the legal aid movement and the law school movement to fill certain definite needs felt by legal aid societies<sup>5</sup>.

Although the idea of legal clinic is based upon the past, the notion of legal clinic is a recent one<sup>6</sup>. Putting theoretical information learned in schools of law into practice may have many different ways; such as doing internship of attorneyship, prosecution-judgeship or notaryship, virtual trials, solutions of real cases and analysis of adjudication and other else. However, this definition is a place where people get legal help commonly in international law field. These clinics are non-profit organizations and they do not get any charge<sup>7</sup>. When legal clinics were first established, they were a method for law students to get practical experience in few countries. But now, legal clinics are popular in many countries, for instances, United States, England, Germany, France, Australia, Italy, Spain, Portugal. They can make a great difference to local communities by offering pro bono services to those that cannot afford to hire a lawyer. In the meantime, legal clinic is a facility run by a law school to provide free services to the public while training their students in clinical law practice. Law students work at a legal clinic for school credit and to gain experience in handling real legal problems<sup>8</sup>. Yet, it is intended in this article that legal clinic involves not only these physical facilities but also any ways that can be used in practice. It should not be forgotten that “the law is what the lawyers are. And the law and the lawyers are what the law schools make them”<sup>9</sup>.

## 2. Importance and Objectives of Legal Clinic

Clinic enables students to face with real life disputes and thereby offers a variety of benefits for higher education institutions. It allows students and graduates to provide a valuable experience and to demonstrate a concern with the future employment prospects<sup>10</sup>. Law Clinics enable students to put their theoretical information that they acquired through classes into practice and so to learn legal practice activities conducted under the

supervision of experienced legal practitioners<sup>11</sup>. Nearly all of educational experts believe that, like medical students<sup>12</sup>, legal students may learn better when given opportunities to put their skills into practical use and may gain professional ethics<sup>13</sup>. By allowing students to meet with clients, file a case, do case research, and manage real cases, a legal clinic helps ingrain the knowledge gained in classrooms into the practice of future lawyers<sup>14</sup>. It can also be understood as a methodology<sup>15</sup>. Case analysis or the memorization of a set of rules and exceptions are teaching methods widely used in law schools. Both are useful, but cannot give enough of the picture in some subject areas to leave the student with even a general understanding. Knowledge about law is not separable from practice of law<sup>16</sup>. Students usually work under heavy supervision, and are rarely permitted to argue oral cases in court. Thanks to legal clinics, they have the opportunity to work closely with the clients throughout the span of the case, acting much as a professional lawyer would<sup>17</sup>.

Clinical legal education has various objectives, some of which can be pursued at the same time<sup>18</sup>. These objectives include: the acquisition of an understanding of the theory and practice of law in context; skills for self-learning; skills to identify choices, make decisions and implement them; law practice skills and moral education. The objectives also include the development of interpersonal skills and the provision of legal services to the poor<sup>19</sup>. The variations in the programs occur when the law school and the clinical instructor emphasize one or more of these objectives in a particular program<sup>20</sup>.

### **3. The Place of Legal Clinic in the Field of International Law**

In an increasingly globalized world, globalization has expressed not only economic but also political, cultural and social addition. As a consequence, the demand for different law services containing more than one legal system has increased gradually. By this way, it has been expected that lawyers, wherever they live throughout the world, should solve all sort of disputes<sup>21</sup>. In a large number of countries throughout the world, legal clinic has gained a great importance for decades<sup>22</sup> and turned into physical institutes from just being a simple methodology. The leading countries where legal clinics have gained importance are United States<sup>23</sup>, England<sup>24</sup>, Germany<sup>25</sup>, France<sup>26</sup>, Austria, Switzerland<sup>27</sup>, Australia<sup>28</sup>, Italy<sup>29</sup>, Spain<sup>30</sup>, Portugal, Denmark<sup>31</sup> and China<sup>32</sup>. Legal clinic institutes in these countries give assistance to those that need help. Anyone may visit a legal clinic for legal aid. In most of these countries, there are different types of legal clinics which are broken down by geographical areas and legal disputes handled by students in charged in legal clinics<sup>33</sup>.

The legal clinics around the world generally resemble each other<sup>34</sup>. They seek to increase their student's capacity for practice law by applying their knowledge of legal theory in the provision of legal aid to community members. At all of clinics, clinicians, mostly law school students, provide pro bono legal assistance to certain indigent people in the local community. Occasionally, these clinics take part at an international level, especially about human rights, animal law, asylum-refugee law, disability rights law, intellectual property law, technology law, mediation law, criminal law, women rights and domestic violence<sup>35</sup>. Every clinic has a center for legal information, training and rights activism and gives law students the opportunity to extend the application of their legal skills into law reform, research and advocacy and to develop their public speaking skills through community legal education. The heavy local reliance on tribal and customary processes in settling disputes also provides law students with an opportunity to examine the interface between law and custom in a practical and applied sense<sup>36</sup>.

The provision of pro bono legal assistance is the traditional task of legal clinics around the world and is a core function of the Clinic. Clients are offered legal advice directly by the law students who enroll in the clinical course or by volunteers under the Clinic staff's supervision. Clients are sometimes referred by the Clinic to relevant government institutions, civil society bodies, international organizations or private lawyers. Also, they have been in an extern relationship with international school of laws and institutes (United Nations Office of the High Commissioner for Human Rights, other international human rights organizations, various sensitive media outlets including radio stations, TV stations, newspapers and electronic media). A large number of legal clinics around the world is established under the leadership of schools of law in places which are easily accessible to target community. Certainly, legal clinics have been in an intern relationship with school of law which established them and other schools of law.

### **4. The Place of Legal Clinic in Turkish Law**

Although legal clinic has been a longstanding application in Turkey, the term of "legal clinic" is not known by even law professionals and also in literature. The reason of this situation may be that the term is unfamiliar. The legal clinic in Turkey can be reviewed in two steps; undergraduate education and post graduate education. However, pregraduate education has also importance for legal clinic. Unfortunately, pre-license education is quite inadequate due to lack of linguistic performance and education based on practice<sup>37</sup>. This insufficiency can be settled by means of instructing lessons including fundamental legal principles besides providing students with

an excellent native language teaching<sup>38</sup>.

The aspects of legal clinic in Turkey are undergraduate internship, after graduate internship, virtual trials, adjudication analyses<sup>39</sup> and visits to courts and other public authorities. As can be seen, these legal clinic applications are very inadequate so as to educate qualified law students. On the other hand, in countries which are successful in introducing legal clinics, students provide pro bono aids to community, publish their school of law journals and organize occupational symposiums in addition to above applications. Moreover, they spend more time on such activities. In Turkey, for example, the respects of legal clinic in undergraduate period are only rarely organized occupational symposiums and virtual trials. At the same time, there is not also undergraduate internship in schools of law. Moreover, legal clinic applications are not seen in all schools of law. Recently, new schools of law have established in body of nearly all of universities. In a big majority of newly established school of laws, there has not been lecturer who can give even theoretical information to students<sup>40</sup>. Therefore, on undergraduate level, the application of legal clinic is seen impossible under these conditions. However, these impossibilities cannot be a reason not to implement legal clinic<sup>41</sup>.

On postgraduate education level, occupational prosecution-judgeship, attorney and notary internship are done by graduates as appearance of legal clinic. Besides, the period of these internships is differing according to the type of profession. For example, the period of internship for attorneys is one year; half of this is spent at courts and other half year is spent at private attorney offices; and prosecution-judgeship is differing from six months to two years<sup>42</sup>. By the common concept, the period of these internships, for both attorneyship and prosecution-judgeship, is not adequate for a desirable occupational sufficiency. Though, in some countries which are successful in legal clinics, students are put through an exam shortly after graduate, and then they start to do internship. At last, they are put through a second exam to start to work as professionals after many years<sup>43</sup>. In this context, it may be suggested that the period of license education should be extended to six years<sup>44</sup>; four is theoretical and two is practical<sup>45</sup>. A longstanding and sufficient period of internship supposed by proficiency tests should be spent.

## 5. Conclusion

The establishment of European Union and quasi organizations and also the globalization of world have led people to need lawyers that can give legal assistance beyond borders<sup>46</sup>. Hence, it has been expected that the legal professionals must settle controversies among people, whatever their nationality or language are, all over the world. Because the means of being a legal professional is to know practice well, the need for legal clinics has increased throughout the world. Thereby, founder elements of legal clinic have gained more importance than before. It can be said that the followings are the fundamental elements of an adequate legal clinic and education of law:

- An institute of legal clinic should be established within the body of all schools of law.
- A professional foreign language that can be used in international legal systems should be taught to school of law students rather than a usual foreign language.
- Large classes should be minimized in schools of law. The communication of instructors with students should be increased by way of leaving education in large classes<sup>47</sup>.
- For introducing legal professions to students, symposiums should be organized with the attendance of those who are known well in their professional fields.
- Because of the fact that attending to the lessons increases success on exams and practice, the compulsory attendance should be set up as a rule.
- Juristic discernment must be taught students of schools of law instead of teaching theoretical information<sup>48</sup>. In education of law, not only classical declaration method but also case method must be used. Lessons should be divided into theoretical and practical ones.
- The habit of group work and cooperation should be gained by school of law students. Moreover, skills in collaborating with governmental and nongovernmental organizations and treating clients accordingly to legal ethics, while they are working in legal clinics<sup>49</sup>, should also be developed by students.
- Law students should be faced with real cases by means of virtual trials<sup>50</sup>, pro bono legal aids and internship on undergraduate level<sup>51</sup>.
- Law graduates should do an internship in private law offices, courts and public authorities (police headquarters, directorate of land registry, the register of commerce, custom houses, penal institutions, institution of forensic medicine, notary and others). At the end of this internship, graduates should be subjected to a proficiency exam.

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# The thoughts of school principals about the effects of educational supervisors on training of teachers in terms of professions

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## Abstract

This research has been conducted in order to find out what school principals think about the effects of provincial educational supervisors when they are officiating their duty on the training of teachers in terms of profession. The principals that work in all primary and secondary schools of Beylikdüzü district in the 2012-2013 school year form the universe of the research. All principals that form the universe are included in the research and further sample is not used. Five point likert scale that is adapted to İstanbul sample by researchers and developed by Gökalp (2010) is used in order to collect data. %74.81 of the applied scale provided feedback. When the results that are derived from the statistical comments of the data that are derived with the scale are examined, it's seen that the school principals participated in the propositions of the survey with a degree of 3,47 with the level of 'high' as (X). It's seen that the least participation is to the 'post-supervision interview with the teacher in teacher training' with an arithmetic average as (X) with a degree of 2,72 with a level of 'medium'. When the fact that post-supervision supervisor sharing of their views will make a major contribution to the development of teachers in professional training and development is taken into consideration these interviews should be definitely conducted.

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**Keywords:** Supervision; supervisor; primary education; inspector; education; management.

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## 1.Main text

Constantly changing World and state conditions, developments that take place in education science and increasing expectations from school principals, application of education process with a scientific view require managers to handle the human resources management process, notably decision making, in an effective and collaborative way (Demir, 2007).

Adoption of education philosophy in an organization totally, featuring the person, emplacement of corporational quality awareness by featuring quality and efficiency in services are among the most important tasks of upper management. (Bostingl, 2000; Kavrakoglu, 1996). Humankind perceive itself as weak and inadequate against autocratical governments that conflict with its distinctive nature and cannot become integrated to organizational purposes for being unable to being involved in the production process with its actual emotion and thought. We are encountered by this problem also in the supervision of workers that cannot become integrated to organizational purposes and as an obstacle to worker's professional development as a supervisory problem.

Conducting education programmes that are extensive, constant and planned in every level of organizational activities, making decisions by giving up centralism and sharing the decisions with every level of organization, improving motivation and awarding mechanisms by measuring performance with realist criteria are needed. This necessitates reviewing of performance measuring criteria and changing to a supervision system in which

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counselling is dominant (Gülşen, 2005; Karagözoğlu, 2003). This necessity is sensed more in educational organizations.

It is seen as an inevitable process that whether an organization has the capacity to realize the organizational activities most effectively within the planned time in accordance with actual legislation (law, regulation, ordinance, circular and orders) in order to achieve its pre-determined goals, controlled and assessed by personnel that have supervision venue from the manager and after conducting 'supervision' that is accepted as a process in which reformation and development, in educational organizations counselling predominantly. (Balcı, 2007: 11; Büyükişık, 1989: 47, Taymaz, 1993; Uluğ, 2004: 13).

In education supervising, activating reformation and development suggestions by observing the function educational Corporation and the way personnel do their work, taking necessary precautions for completing emerging shortcomings and correcting the problems and providing necessary counselling to solve the problems of educational activities, teachers and directors bear great importance. (Açıkgöz, 2001: 9; Başaran, 1995: 15; Taymaz, 1993: 7).

Given the importance of counselling in supervision, it is seen that the aim of supervision is to provide a normal functioning and development of education-teaching process and to increase the quality and qualification of activities that are conducted in education-teaching process. The success of education is evaluated through the effectiveness and efficiency in developed nations. This effectiveness is possible with a counselling intensive supervision. When the aims and principles in legal texts about supervision that are put into action by the Ministry of National Education are sorted, supervision that provides counselling intensive professional development and helps the development of professional competence of director, teacher and other personnel is emphasized. (MEB, 2013a: 2-3).

In the supervision process, personnel are expected to perform the counselling roles of educational supervisors to provide professional development well. According to Başar (2000: 54), the roles of supervisors can be grouped as six given the combination of task, process and attitude dimensions. These roles are leadership, management, informativeness, research, investigation and counselling. 'Counselling and training at work' task is defined as one of the most important tasks and authorities of supervisors, in the sorting process of their tasks and authorities by Ministry of National Education (MEB, 2013b: 2-5).

The counselling roles of supervisors can be sorted as, making teachers understand the aims of school, counselling the teachers and managers in their region by keeping up with the changes in professional publications and developments about profession and regulations, assisting teachers in the improvement process of applied methods and techniques, contributing to the professional development of teachers, assisting teachers to find better teaching tools and methods themselves (Atay, 1987: 1).

Counselling and at-work training roles of supervisors contributes to the education system to achieve its goals and serves to the whole system. It makes an effort to regulation and development rather than to keep the existing system. Supervisors should be an effective leader and have a influential communication while conducting the counselling tasks. Thus they can be more successful in their professional meetings and individual interviews with teachers to solve the problems related to education. An influential communication is vital to induce personnel not to resist change but to orientate themselves to change.

Modern sense of supervision includes providing an understanding of school's aims by teachers as necessary, assisting teachers in the development process of applied methods and techniques, contributing to the professional development of teachers, assisting teachers for their self-realization and to find better teaching tools and techniques themselves, providing self-assessment habits to them, creating the feeling for them to share their personal problems in an honest and sincere environment, helping them to know themselves, assisting their development by revealing their abilities and identifying their problems and finding the best solution for their problem. According to Yüksel (1999: 56) the kinds of counselling types for education supervisors to apply to be educational leaders are sorted as a)Beginning and Orientation Counselling, b)Performance Counselling, c)Personal Problem Counselling, d)Discipline Counselling and e)Professional Counselling. Balcı (2007: 31) expresses the professional assistance process as necessary information for individuals to solve the problems that they will encounter in their professional careers, exhibit the expected behaviors from them and to gain professional success, solving problems of education that arise from training deficiency and gaining necessary information, skills and attitude to remove failure and deficiency in application process.

Attitudes and behaviors of directors in schools where supervision is conducted bear great importance in teachers' professional development process. Directors' pre-supervision sharing opinions about school personnel with teachers may affect the roleplay of supervisors. Knowing what directors think about knowing the effectiveness level of teacher's training on professional counselling is regarded greatly important for this study. From this point of view, this study is conducted to learn what school directors think about the effect of province educational counsellors on teacher's professional training while they are conducting their counselling role.

## 2.Method

The principals that work in all primary and secondary schools of Beylikdüzü district in the 2012-2013 school year form the universe of the research. All principals that form the universe are included in the research and further sample is not used. %74.81 of the applied scale provided feedback.

### 2.1 Data Collection Tool

Five point likert scale that is adapted to İstanbul sample by researchers and developed by Gökalp (2010) and .99 Cronbach alpha reliability coefficient is used in order to collect data.

The lines of scale is defined as chart-1 from the idea that gaps between the scales that sample group remarked their opinions.

Table-1 Weights and their bounds according to the level of agreement with statements

WEIGHT	OPTION	BOUNDS
1	Strongly Disagree	1.00–1.80
2	Slightly Agree	1.81–2.60
3	Agree	2.61–3.40
4	Strongly Agree	3.41–4.20
5	Totally Agree	4.21–5.00

### 2.2 Analysis and Explication of the Data

SPSS program is used in explication of data that are collected with scale tools. Frequency (f), percentage (%), arithmetical mean (x) and standard deviation (sd) and one-way analysis of variance are used to determine personal features and views by using above-cited package software.

## 3.Findings and Comments

Views of directors on realization of counselling roles of educational supervisors in terms of teachers' professional development are tried to be determined.

Table 2- Views of directors on realization of counselling roles of educational supervisors in terms of teachers' professional development.

About counselling roles of educational supervisors in supervision activities	f	( $\bar{X}$ )	Std fault avg.	Average value	Mod	Std. Dev.
Makes positive relation with the teacher	52	3,10	.119	3,00	3.00	0,90
Shares responsibility with the teacher	52	3,61	.138	4,00	4.00	1,05
Provides educational leadership to the teacher	52	3,40	.123	4,00	4.00	0,92
Motivates teacher	52	3,86	.138	4,00	4.00	0,04
Values teacher	52	3,84	.138	4,00	5.00	1,05
Gives teacher confidence	52	3,82	.123	4,00	4.00	0,93
Approaches teacher without prejudice	52	3,72	.145	4,00	4.00	1,09
Considers surrounding conditions while assessing the teacher	52	3,88	.137	4,00	5.00	1,04
Praises successful features of teacher	52	3,58	.175	4,00	2.00	1,31
Spares enough time for the teacher	52	3,17	.181	3,00	2.00	1,36

Shares opinions with the teacher after supervision	52	2,72	.127	2,00	2.00	0,95
Gives information about teaching methods	52	3,33	.157	3,00	3.00	1,18
Guides teacher in student counselling service	52	3,02	.165	3,00	2.00	1,24
Total Arithmetical Average				3,46		

When views of directors on realization of counselling roles of educational supervisors in terms of teachers' professional development are taken into consideration, directors think that educational supervisors realize their counselling roles in teacher's professional development as medium with a degree of " $\bar{X} = 3.46$ ".

When statements are considered as articulated separately, highest attendance is to the 'Considers surrounding conditions while assessing the teacher' statement as quite a lot with a degree of " $\bar{X} = 3.88$ ". According to school principals educational supervisors care for surrounding factors and conduct supervision according to surrounding factors in professional counselling and supervision while conducting their counselling roles. (Ecevit, 1996:39).

When statements are considered as articulated, least attendance is to the 'Shares opinions with the teacher after supervision' statement as 'medium' with a degree of " $\bar{X} = 2.72$ ". According to the school principals, supervisors do not make precise counselling meetings after supervision. School principals don't find the explanations and supervision assessment of supervisors for teacher adequate.

School principals remarked that supervisors are adequate when conducting their counselling roles in the professional development of teachers in terms of 'Shares responsibility with the teacher, motivates teacher, gives teacher confidence, values teacher, approaches teacher without prejudice, considers surrounding conditions while assessing the teacher and praises successful sides of the teacher' statements.

#### 4. Results and Suggestions

##### 4.1 Results

1. Education inspectors practice considerably their guidance roles on educating teachers in terms of occupation according to school administrators.
2. Education inspectors provide occupational help and guidance on supervision activities by inspecting appropriate for contingency principle.
3. While education inspectors are practicing their guidance roles on educating teachers, they are pretty sufficient in the matter of "sharing responsibility with teacher, giving teacher moral support, giving confidence to teacher, valuing teacher, approaching without prejudice to teacher, consider environmental conditions while evaluating teacher, appreciating successful aspects of teacher".
4. Education inspectors don't share their opinion sufficiently with teacher after inspections.

##### 4.2 Suggestions

1. Education inspectors should share their opinions with teacher after inspections for effective inspection. For this reason, not making limp of guidance activities after inspection for providing improvement of teachers in terms of occupation provides teachers with education and improvement in terms of occupation.
2. In order to acquiring general results of this research, opinions of other relevant employees need to be received.

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# The transferability of higher order cognitive skills

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## Abstract

An assumption of this paper is that successful adaptation to the complex and rapidly changing world of the future requires an education that places great emphasis on the development of higher order cognitive skills, especially critical and creative thinking skills. This approach to education makes sense only if such skills are transferable, both from one discipline to another, and to work and life situations. This paper claims that such skills will be transferable if certain conditions about curriculum design and reinforcement are met, and goes on to outline the nature of these conditions.

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*Keywords:* critical thinking, domain specific; cognitive heuristics, metacognition

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## 1. Introduction

It is widely recognized today that advances in technology have created rapid changes not only in society and in our personal lives, but perhaps most noticeably in the workplace. In America, for example, low skill manufacturing jobs are rapidly disappearing and being replaced by a demand for workers who have developed high levels of cognitive skills. As important as they are in the workplace, such skills are also important for countries to remain competitive with others and for citizens to participate effectively in democratic societies. Perhaps most importantly, being able to think critically and creatively is necessary in this rapidly changing, complex, information overloaded world, for individuals to live happy and successful lives as rational human beings.

Most American colleges and universities have acknowledged that they need to do a better job in developing these skills in their graduates, especially when *en masse* college education is the norm. Many have required that students take a course in Critical Thinking, for example, a course that usually focuses on general reasoning skills that are assumed to be transferable across disciplines and in everyday life and work. But are they? There seems to be some evidence that thinking skills can be developed only in domain specific areas and that such thinking is not transferable to other disciplines, let alone to everyday and workplace life. If this is true, then educating students to be critical and creative thinkers in general seems to be misguided. If we cannot carry over the thinking skills developed in one course to another, let alone transfer these skills to everyday life, then the entire liberal educational enterprise of educating people to be rational human beings in general seems to be misguided.

### 1.1. What Are Higher Order Thinking Skills?

Before addressing the question of transferability there is some preliminary work to be accomplished. Let us begin to attempt to solve this problem by deciding on what we mean by higher order cognitive skills. First, "higher order" should be distinguished from "lower" or "middle level" thinking skills. These latter are skills presupposed by higher order ones, such as reading and writing, being able to organize and the like. Next, because of time constraints, this paper will focus on the higher order cognitive skills usually called critical thinking skills and discuss creative thinking only briefly, even though a case may be made that creative thinking may perhaps our highest cognitive ability. One of the problems encountered in discussing critical thinking skills is that there are many different ideas of what they are.

The most detailed and accurate lists of critical thinking skills are usually developed from an academic perspective. *The American Philosophical Association* has developed one of the most important and influential lists of critical thinking skills. A consensus of 46 experts in critical thinking from various fields developed the following list of six core critical thinking skills (Facione, *The Delphi Report*, 1990). It is worth examining briefly how each item is described in the report.

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- *Inference*: “to identify and secure elements needed to draw reasonable conclusions; to form conjectures and hypotheses; to consider relevant information and to deduce the consequences flowing from data, statements, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation.”
- *Explanation*: “being able to present in a cogent and coherent way the results of one’s reasoning. This means to be able to give someone a full look at the big picture: both “to state and to justify that reasoning in terms of the evidential, conceptual, methodological, criteriological, and contextual considerations upon which one’s results were based; and to present one’s reasoning in the form of cogent arguments.”
- *Evaluation*: “to assess the credibility of statements or other representations which are accounts or descriptions of a person’s perception, experience, situation, judgment, belief, or opinion; and to assess the logical strength of the actual or intended inferential relationships among statements, descriptions, questions or other forms of representation.”
- *Self-Regulation*: “self-consciously to monitor one’s cognitive activities, the elements used in those activities, and the results deduced, particularly by applying skills in analysis, and evaluation to one’s own inferential judgments with a view toward questioning, confirming, validating, or correcting either one’s reasoning or one’s results.
- *Interpretation*: “to comprehend and express the meaning or significance of a wide variety of experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures, or criteria.”
- *Analysis*: “to identify the intended and actual inferential relationships among statements, questions, concepts, descriptions, or other forms of representation intended to express belief, judgment, experiences, reasons, information, or opinions.”

While this list is quite comprehensive it is more helpful to focus on its central elements and to arrange them into a problem solving format. After all, very few of us think at all unless there is some problem to solve, something to figure out. We seem to be creatures of habit more than thought, and for most of us it is only when habits break down and our usual routines no longer work, that we have to think up new answers to questions or new ways of acting. One such format is loosely based on the approach of the National Council for Excellence in Critical Thinking. It contains the following elements:

- Identify the problem
- Clarify basic concepts
- Formulate the problem
- Formulate possible solutions
- Gather information
- Recognize assumptions
- Defend possible solutions
- Form a reasoned judgment
- Examine consequences

Most of the core critical thinking skills described in the Delphi report are listed here. Many of these skills are also those that the widely used Watson/Glazer critical thinking test has singled out as representing essential critical thinking skills, such as inference, recognizing assumptions, deduction, interpretation and evaluation of arguments. It should be noted that creative thinking finds its home in this schema especially under “propose possible solutions”. It should further be noted that this type of thinking is not exclusively “philosophical” thinking, but is quite closely related to the type of thinking that goes on in science, the law and in everyday life. There will be more on that later.

### 1.2. Can Higher Order Thinking Skills Be Taught?

There are some who believe that people who exhibit high levels of problem solving skills in more than one area simply have a higher level of intelligence than others, which enables them to figure out quickly how to solve problems in various areas. According to this view, thinking skills are like athletic skills, they can be nurtured but teaching cannot create them. Others believe that thinking skills can be taught, but only by an apprenticeship method. You learn to think like a philosopher, for example, by reading lots of philosophy, taking lots of philosophy courses, writing lots of philosophy papers, getting an advanced degree in philosophy, and so on. It takes a long time, but eventually spending lots of time with philosophy and philosophers produces a philosophical mind. Unfortunately, such cognitive skills apply only to philosophy and not other domains, just as a carpenter’s skills do not make a good plumber.

While some believe that traditional classroom teaching methods cannot produce critical thinkers, others believe that such skills may be acquired by teaching, but are quickly lost when not used consistently. The reason for this is that much of our decision making is intuitive and not logical. Cognitive scientists have discovered a number of what they refer to as “cognitive heuristics” which are employed on this level of thinking. Cognitive heuristics may be understood as a type of mental shortcut. While these served our hunter-gatherer ancestors well, and continue to serve us well in some especially familiar areas that require quick decisions, they can also be obstacles to rational thought. They can be cognitive biases.

Cognitive biases can be especially troublesome because we are usually not aware of them. They guide our problem solving and decision making along the paths of least resistance if we allow them to do so. Some examples include the following (Novella, 2012). *Anchoring* is a tendency to focus disproportionately on one feature of a situation and base our judgment only on that. Marketers often use this tendency to convince us to buy their product, otherwise indistinguishable from others, by pointing out some one feature. Buy our toothpaste because it whitens your teeth,” is an example. *Anecdotal* reasoning counts personal experiences as more important than scientific studies. For example, someone refusing to believe that smoking causes lung cancer because they know someone who smoked for years and did not develop lung cancer would be guilty of using this heuristic inappropriately. *Availability* heuristics consider an event to be more likely if it is accompanied by a personal story or an emotional experience. If a rouge wave swamps my sailboat on an otherwise clear day, I may come to believe that this event is likely to occur each time I sail-even in fair weather. Various *confirmation* biases lead us to rate evidence or beliefs as more likely to be true the more we are familiar with them or the more they confirm our previous beliefs, or the more we have invested in them being true. We think of scientific studies, for example, as more likely to be true the more we agree with their conclusions.

There are many other examples of powerful cognitive heuristics that may serve us well some times, but lead us astray at others. While they may seem like common sense, and while they work much of time in our daily lives, they are often not sufficient guides for solving new problems in this complex, changing world. If thinking skills are to be taught we must be aware of our cognitive heuristics and be able to evaluate when they do and when they do not lead to correct conclusions. Part of learning to think critically is learning when our natural habits of thinking, wired in by evolution, are serving us well or not. The point for now is that they can serve as obstacles to teaching and retaining critical thinking skills. Because critical thinking is hard work, and because our heuristics bypass this work, most would rather follow their cognitive biases than engage in critical thinking. As Bertrand Russell famously pointed out: “Most people would rather die than think; in fact they do.”

### 1.3. Can Higher Order Cognitive Skills Be Transferred?

For now we will simply assume that we can be taught to overcome our cognitive biases and turn to the main question of this paper, whether or not critical thinking skills can be transferred from one domain to another. The fact that when we think we have to think *about* something has led some to the conclusion that higher order thinking skills are specific to a particular subject matter. According to this view, there are no general critical thinking skills, only critical thinking within a domain specific area. Thinking like a philosopher is not the same as thinking like a lawyer; thinking like a lawyer is different from thinking like a scientist; this in turn is different from solving problems in everyday life. The difference is not just in what it is that is thought about, but also in the types of thinking skills required. The skills required to gather evidence in a biology lab, for example, are not at all like those required by a lawyer or a philosopher when they search for evidence to support their conclusions. According to this view there are no domain independent critical thinking skills that get applied to various disciplines and to daily life. Just as “expert systems”-- computer programs created to do specific jobs such as scheduling airlines or making medical diagnoses--are domain specific, so are our critical thinking skills. No more than a medical diagnosis program could be used successfully to schedule airline travel, can our thinking skills developed in a history course be used successfully to solve philosophical problems, let alone problems in daily life.

According to an extreme view of this type even reading comprehension skills are domain specific. Being able to understand what you read in one area does not mean you will understand what you read in another area. The key to reading comprehension and interpretation seems to be familiarity with the subject matter. If you can read and you are familiar with sports you will understand written material about sports. If you are not familiar with philosophy, you will fail to understand Descartes’ *Meditations*. In general, the subject matter you are thinking about determines the type of thinking skills employed. If these vary from subject to subject then it makes no sense to talk about *general* critical thinking skills that can be taught independently of a particular subject. Moreover, if there are no domain independent thinking skills, then talking about transferring thinking skills from one discipline to another and to daily life makes no sense either. But is this not the point of a liberal education, to teach us how to think critically and to use these skills in our work, our society and in our everyday lives?

The case that higher order thinking skills are not transferable rests especially on the belief that thinking skills vary from one domain to another. While there seems to be a great deal in common between playing chess, for

example, and military strategy, there is no indication that even an expert chess player's thinking skills will make him or her a good military strategist (Perkins, 1989). The same problem of transferability is true between any domains. This is not just because, for example, philosophy and biology have different content. This is important, to be sure. Solving problems in any field requires a great deal of knowledge about the domain. You have to know a lot about a cell's structure and function, as well as many other biological phenomena, to solve problems about how DNA molecules replicate. But it is about more than just content; it is also, and especially, about the epistemological standards employed in the domain. It is about, that is, the very model of acquiring knowledge employed in the domain, and the particular model of thinking that is used to solve its problems.

The domain specific view of critical thinking, the view that denies the transferability of thinking skills from one domain to another, believes that *epistemological relativism* is true. It holds the view that each domain has its own ways of solving problems that vary from discipline to discipline. It denies that there are any universal laws of thought that are employed, with appropriate content variations, to all thinking. To think like a historian, for example, you have to know a lot about history, but you also have to know a lot about how historians gather information, draw inferences, consider implications and so on. Knowing how philosophers do this will not help a bit in your study of history, just as knowing how to play chess will not help you to win military battles.

I believe that there is something to this view that thinking requires a subject matter and that solving problems in a domain requires a rich knowledge base, a great deal of specific knowledge about a field. There is also something to the claim that many thinking skills vary from one domain to another. Forming hypotheses in astrophysics, for example, seems to be quite a different process from proposing possible solutions to philosophical problems or getting a hunch in our everyday lives, for example, about the best way to lose weight. However, it is a mighty inferential leap from this to the claim that thinking critically in one domain has *nothing* in common with the sort of thinking that goes on in another. While critical thinking skills may be best honed in a specific context, either by intentional instruction or by the apprentice method, the most important ones--the ones listed earlier in our general definition of critical thinking skills--are not relative to specific domains.

This can be seen when experts face unfamiliar problems, when their routine cognitive heuristics break down. In these situations people who are true critical thinkers routinely employ problem solving skills learned in other contexts to solve their problems about why their routine, domain specific problems solving schemata have broken down. The key to being able to perform this type of transfer of thinking skills seems to be how higher order skills were acquired in the first place. If I learn to think like a philosopher by studying lots of philosophy and acquiring the habits and methods of philosophical thinking--the apprentice method--then I am less likely to be able to transfer this thinking to other domains. If, on the other hand, I learn to think critically in an intentional way, being conscious of the thinking skills being employed, then I am more likely to understand and utilize these skills in other areas as well--to transfer them to other domains. In other words, if I not only think critically but also think about thinking critically, then I have a better chance of decontextualizing thinking skills learned in specific domains and transferring them to others. The term for this is *metacognition*.

The well known American baseball player, Yogi Berra, once famously said, "When you come to a fork in the road, take it!" If we agree that teaching higher order thinking skills ought to be an educational priority, then our fork in the pedagogical road is to teach critical thinking in domain specific ways, as in history, math, biology and so on, or in domain independent ways, such as in critical thinking courses usually offered by philosophy departments. It seems clear that we need to do both. It is difficult to see how we could avoid teaching critical thinking skills on the K-12 level in any but domain specific ways. The real task is to promote teaching for the development of thinking skills in the first place, making thinking and not memorizing facts the main educational goal. Teaching students to think in domain specific ways will tap into the concrete learning styles of younger students as well, making it a more effective way for them to learn how to think.

In higher education as well, thinking skills need to be taught in domain specific ways. If we are intentionally going to teach our students how to think critically, to be effective problem solvers and good decision makers, it should start within courses that have a specific subject matter. We should not teach history as a collection of facts, but rather we should teach students how to think like historians when historians are thinking well. The same should be the goal for all disciplines. A truly liberal arts education will teach us how to think like scientists, like philosophers, like mathematicians and humanists. In addition, however, it will teach us to think in general, so that we may apply our reason to a whole range of problems that have yet to arise within various domains and in daily life. Achieving this goal is possible, but it will take dramatic changes in curriculum design.

#### 1.4 Teaching For Transfer

Here are some suggestions to guide such a curriculum design. First, as a pilot program, develop a cluster of courses in various domains that would be taught less as lecture courses and more as problem solving courses. Start, for example, with courses in history, social science, biology, psychology, math and literature. Each will be designed to promote critical thinking in its own specific domain. Next, a course in critical thinking offered by the philosophy department should be added to the mix. This course will have two goals. First it will teach



students general critical thinking skills, utilizing everyday contexts for practicing these skills. Next, it will develop a common *metacognitive* language to be utilized in all related courses. Students who take this course and other courses in the interdisciplinary cluster will refer to this language as they practice various skills. So information gathering in the various courses, for example, will be labeled as such, as will conceptual clarification, forming and testing hypotheses, and so on through the list of critical thinking skills. In this way students will become conscious of their thinking skills and how they work to think through the content of various domains. Throughout there will be a need for instructors to work together to demonstrate to students how thinking in one course relates to thinking in others and to the everyday world. It will take this type of instruction for students to be able to transfer thinking skills from one domain to another and to daily life.

It is quite clear to me that the patterns of problem solving are quite closely related in science, philosophy, the law and everyday life. Generalized, this problem solving pattern is the one we identified earlier with critical thinking. If students are taught a metacognitive language and taught to reflect upon various thinking skills as they are used in different domains, they will develop an awareness of this pattern of thinking, and develop the habit of using it in various domains. This is important, because it is not so much the particular skills, but the *habit* of using them that will transfer. If students use them over and over again, in a self-conscious manner and in various contexts, the disposition to use them when confronted with a problem in any area will take hold. If there is a regular, conscious employment of higher order thinking skills, cognitive biases will be seen for what they are and more often than not avoided and replaced with habits of critical thinking, habits that students will carry with them throughout their lives. As a result, liberal education will get closer to what it should be--less about memorizing facts and more about educating the mind.

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# The Usage of m learning for adult education in Serbia

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## Abstract

As the answer to the need of full integration and participation of older persons in community, different types of long-life education are provided in Serbia. Education process of adults in Serbia is held though the several types of training. Since the older people are most interested in computer science, arts and foreign languages, we made a survey about the possibility of their participation in long-life education using the mobile platforms and devices. The study was held on 347 participants, age 60-75 years. The main conclusions concerning the rate of understanding and accepting new mobile platforms are presented in the paper.

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*Keywords: m learning; mobile devices; long-life education*

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## Introduction

*You need to learn as long as you do not know something, and as long as you live.*

Euripides

Older people have to be given the opportunity to learn something new or update their existing knowledge in various fields of human life. They have to have the opportunity to have fun, travel, to affirm them presenting their works in numerous exhibitions, and to participate in collective exhibitions.

In the period of demographic socially-economic and scientific-technological transforms, with the different challenges, awaiting us in the future, the importance of education and learning adults enormously increased. Conception of adult education is the idea, as well as the process, having a remarkable impact on all areas of human life and society. It is grown to build a better society, but also authentic, responsible individuals, leading to achieving the vision of learning society, as the essential civilization characteristic of the human race.

In this sense, learning methods that are evolving nowadays and are improved through the usage of mobile platforms, have to be also presented to older people. The m learning definitely range from a generation of toddlers just as comfortable with touchscreens as they are with books, to college-aged men and women, to middle-aged and elderly professionals hoping to earn new skills in their spare time to secure a new job in turbulent economic times.

The development of m learning is driven by initiatives in innovative directions, mostly driven by the need of continuous learning. Up until now, most people regarded “education” to a finite time in their lives. Education had an expiration date, and then working life began. This model, has become less relevant by the way of our lives in the connected age. The availability of tablets and other touch-enabled devices has radically reduced the perceived complexity of computers, helping older users to more easily communicate with their middle-aged children and grandkids via email, Facebook, Twitter, and Skype. Also, the range of m learning materials does not need to be limited to higher education but can easily encompass valuable, practical know-how, from grandmothers showing how to prepare traditional recipes to companies demonstrating how to install solar panels.

The m learning has much business potential, but the most rewarding aspect of these solutions is that students of any age or background can have a chance to pursue knowledge that is meaningful, relevant, and realistic to achieve in their own lives.

## Long-life education

Andragogy, or adult education is not just a theory of adult learning, it is an educational ideology that is based on established paradigms of learning and teaching. As one of the most famous pioneer of adult learning or a long-life learning was Malcolm Knowles. Knowles identified the six principles of adult learning outlined

below.

- Adults are internally motivated and self-directed  
Older people as adult learners often resist learning when they feel others are imposing information, ideas or actions on them (Fidishun, D, 2007.). The role of a modern approach of education is to encourage a student to the more self-directed and responsible learning, as well as to develop the student's internal motivation to learn and achieve knowledge.
- Adults bring life experiences and knowledge to learning experiences  
Adults like to participate in education process based on their existing base of knowledge arose from life experience, and want to insert it to their new learning experiences
- Adults are goal oriented  
Adult students become ready to learn when "they experience a need to learn it in order to cope more satisfyingly with real-life tasks or problems" (Fidishun, D, 2007.).
- Adults are relevancy oriented  
Adult students want to know the relation between the subjects that they are learning, and the achievements of that learning. The m learning helps adult students more easy to evaluate their observations and practical experiences, in the real time process.
- Adults are practical  
The usage of m learning moves from classroom and textbook mode to real, or simulation of a real situation, so they can recognize how their learning experience works on solving problems. The m learning gives an explicit way to understanding the learning is useful and applicable to the job and real life problems.
- Adult learners like to be respected  
It is important to keep in mind that the adult student is still developing occupational therapy clinical practice skills. However, with the theory and principles of adult learning in mind, you can facilitate the learning approach of the student to move from novice to more sophisticated learning methods. This facilitates greater integration of knowledge, information and experience; the student learns to distinguish what is important when assessing and working with clients; how to prioritize client needs, goals and caseload; when rules can be put aside and how/when the approach to occupational therapy practice and professional communication emerges from strict modeling of behavior into a unique therapeutic and professional expression of self. (Fidishun, D, Lieb, S. 2007.).

Knowles' theory of andragogy is an attempt to develop a theory specifically for adult learning (Knowles, M., 1984.) Knowles emphasizes that adults are self-directed and expect to take responsibility for decisions. Adult learning programs must accommodate this fundamental aspect.

Andragogy makes the following assumptions about the design of learning: (1) Adults need to know why they need to learn something (2) Adults need to learn experientially, (3) Adults approach learning as problem-solving, and (4) Adults learn best when the topic is of immediate value.

In practical terms, andragogy means that instruction for adults needs to focus more on the process and less on the content being taught. Strategies such as case studies, role playing, simulations, and self-evaluation are most useful. Instructors adopt a role of facilitator or resource rather than lecturer or grader.

Knowles provides an example of applying andragogy principles to the design of personal computer training (Knowles, M., 1984):

1. There is a need to explain why specific things are being taught (e.g., certain commands, functions, operations, etc.)
2. Instruction should be task-oriented instead of memorization -- learning activities should be in the context of common tasks to be performed.
3. Instruction should take into account the wide range of different backgrounds of learners; learning materials and activities should allow for different levels/types of previous experience with computers.
4. Since adults are self-directed, instruction should allow learners to discover things for themselves, providing guidance and help when mistakes are made.

### **The m learning and mobile platforms**

The m learning refers to the ability to access educational resources, tools and materials at any time, from anywhere, using a mobile device (World Economic Forum Report, 2010). Mobile technology devices for m learning range from basic mobile phones to tablet PCs, and include PDAs, MP3 players, memory sticks, e-book readers and smartphones. Following the latest trends in education, and the need to access education for all ages, different mobile applications are developed. The m learning can include:

1. Simple SMS messaging
2. Multimedia live classroom sessions
3. Web and podcasting to audio
4. Text recaps of lessons
5. Educational video games
6. Logical reasoning and problem solving aptitude games
7. Multiple choice tests to reinforce content learning
8. Audio- to-text or text- to- audio applications
9. Mobile whiteboards for interactive discussions

Because of m learning's ubiquity and diversity, it offers fascinating opportunities for new learning modalities.

The m learning process in Serbia is based on the several types of mobile platforms and devices, that are usually provided by a telco operators. In Serbia, m learning process would be provided on smartphones, PDAs, tablets, or other more advanced mobile devices, using, most frequently, the Android OS.

The Android O.S. has evolved very quickly with the numerous updates and new versions. During the time period of android rule in market, new applications were developed, especially in the educational processes. (N.Slavković, A.Savić,2013., [www.google.com/events/thinkmobile2011/presentations.html](http://www.google.com/events/thinkmobile2011/presentations.html), [developer.android.com/about/index.html](http://developer.android.com/about/index.html)). Android is one of the largest installed base of any mobile platform for mobile devices that are able to achieve new apps, games, and other digital content (N.Slavković, A.Savić,2013., [www.google.com/events/thinkmobile2011/presentations.html](http://www.google.com/events/thinkmobile2011/presentations.html), [developer.android.com/about/index.html](http://developer.android.com/about/index.html)). Android becomes a world mobile platform for creating apps for different purpose. Android users everywhere can reach to the open apps marketplace. It also provides tools for creating apps that look very nice and user friendly on each device.

Google Play is the premier marketplace for selling and distributing Android apps. Beyond growing customer base, it helps to build visibility and engagement across everyone's apps and brand. As apps rise in popularity, Google Play gives them higher placement in weekly "top" charts and rankings, and for the best apps promotional slots in collections (N.Slavković, A.Savić, 2013., [www.google.com/events/thinkmobile2011/presentations.html](http://www.google.com/events/thinkmobile2011/presentations.html), 2011., [developer.android.com/about/index.html](http://developer.android.com/about/index.html)).

With Google Play for Education, teachers and administrators can browse content by curriculum, grade, and standard — discovering the right content for their students. Google Play for Education is the best way for any kind of a class group using Google's classroom-ready tablets to find apps, videos and books for any classroom. Designed just for educators, Google Play for Education makes it easy to discover teacher-approved tools and content that meets the individual needs of today's students. ([developer.android.com/distribute/googleplay/edu/about.html](http://developer.android.com/distribute/googleplay/edu/about.html), <https://www.google.rs/edu/training/more/tablets/level1.html>).

Over 30 million students of all ages, faculties, and staff are already using Google Apps for Education and other Google services. Many of these schools are excited to take advantage of tablets with Google Play for Education and they look to bringing your apps into their classrooms, especially apps using Google sign-on. Google Play for Education brings the innovation of Android technology into classrooms. School districts can set up and deploy large numbers of devices in just minutes or hours rather than days. Powerful browsing tools let educators quickly discover apps, videos, and other content—with many recommended by teachers and categorized according to familiar Core Curriculum standards. After finding apps they want to use, educators can push them instantly to student devices over the air. They can send the apps to individuals or groups of any size, across classrooms, schools, or even districts. ([developer.android.com/distribute/googleplay/edu/about.html](http://developer.android.com/distribute/googleplay/edu/about.html), <https://www.google.rs/edu/training/more/tablets/level1.html>).

### **The research in Serbia**

Research was held in Serbia, through application form, where 347 people, aged 60-75 years, (who are willing to attend the variety of online courses and lessons), answered several questions, concerning topics related to m

learning.

First question was: Choose one preferred answer as lessons activity you would like to participate in. The research showed that 41 participants showed interest in dancing lessons, 60 in recreation (mostly yoga) lessons, 73 in art lessons, 94 in computer science and 79 in foreign languages lessons, Fig.1.

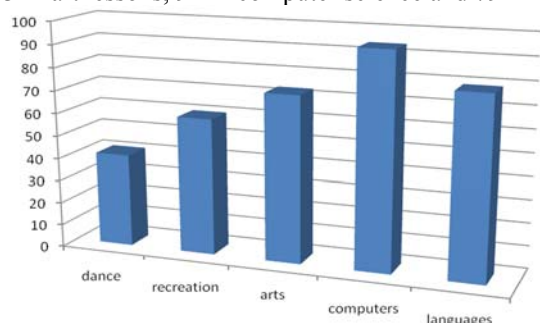


Fig. 1. Participation in lessons activity

Second question was: Do You use a mobile phone or other mobile device? The 291 of participant have mobile device, and 56 of them have not any mobile device, Fig.2.

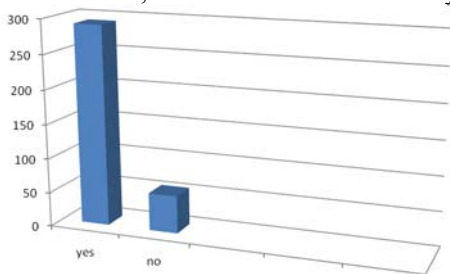


Fig. 2. Possessing a mobile device

Third question was: Do you use smartphone, tablet PC, laptop, or other mobile device, to access the internet? The answers were: smartphone – 24%, tablet PC - 18%, laptop or notebook -30%, and 28% use other devices, PDA, iPod, etc. Fig.3.

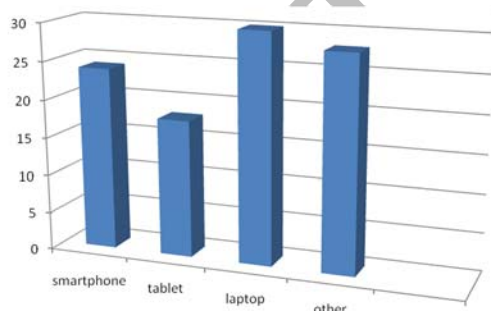


Fig 3. Percentage of usage of various types of mobile devices

Fourth question was: How do you use the internet? The answers were: go online - 37%, use broadband at home - 63%. Fig 4.

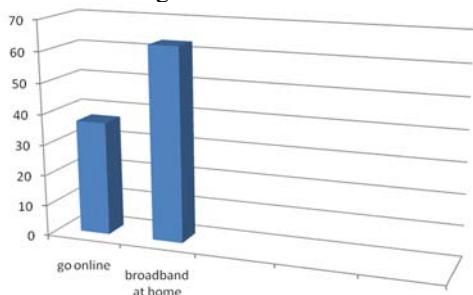


Fig. 4. Percentage of location to access the internet

Fifth question was: How often do you access the Internet? The answers were: every day -74%, once a week - 8%, twice a week- 5% , between three and six days a week- 13%. Fig 5.

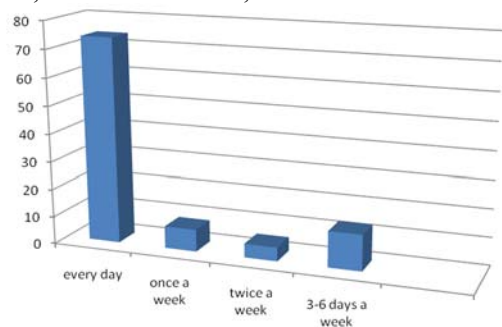


Fig. 5. Percentage of the week activity to access the internet

Sixth question was: What are your most often smartphone or other mobile device activities? The answers were: send and receive text or MMS messages -78%, accessing the Internet- 55%, listening music - 42% , watch the video contents - 33%, send and receive e-mail – 30%, download apps- 21%. Fig.6.

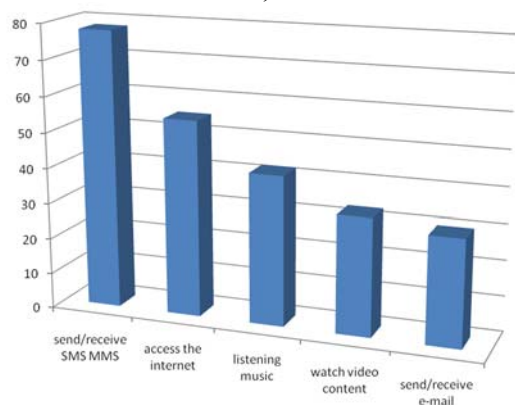


Fig 6. Percentage of types on mobile activities

## Conclusion

Mobile Learning serves as a new way of interconnecting everything and everyone: teachers, tutors, students, study groups, social networks, gaming communities, content creators and more, in a trusted way for sharing information and knowledge. Most of all, it redefines formal and informal learning and creates new platforms to reach the 140 million children and adolescents who are currently not enrolled in school [5]. Because mobile devices are typically carried at all times, individuals have immediate and constant access to libraries of the most current electronic textbooks, journals, magazines and other digital assets. Mobile applications in banking and health have already successfully combined economic and social returns. Mobile Learning has the potential to do the same, it's just the matter of time.

In Serbia, adults older people aged over 60, are, so-called, late technology adopters, but their participation into digital era is developing in every coming day, leading to the fast implementation of m learning process for adults education.

Our research was provided among 347 people who attend to participate in m learning process for further education. According to that research, most frequent fields of interest are computer science, and language lessons. This fact leads to the conclusion that could be very easy to implement the m learning education programme for the mentioned fields of interest. Most of participants, 291 of them, have mobile device, but the broadband at home is often way to access the internet, than mobile access. From the data about the frequency and types of the mobile activities, it can be concluded that adult people in Serbia have opportunity to develop their digital literacy in the purpose of adult education. Thus they will become an important subjects leading to overall quality of learning in modern society.

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# The validation of web-based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency in higher education

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## Abstract

The purposes of this research are to examine the internal and the external validation of the web based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency in higher education. The target group for the internal validation consists of 4 experts, 1 instructional designer, 2 developers of constructivist web-based learning environment, and 1 computer education lecturer. The target group for the external validation consists of 53 second year students studying in the computer education field, the Faculty of Science and Technology at Nakhon Ratchasima Rajabhat University, Thailand. The Developmental Research Phase II (Richey and Klein, 2007) that is the validation is employed in this study. The Results are revealed as follows. Firstly, for the internal validation, it is found that the web based learning design is consistent with underlined theories based on Instruction Design theories (ID Theories). Secondly, for the external validation, it exposes that the students learning with model have high levels of competency and achievements. The average scores of competency test and achievement test are 82.79% over the 70 percent threshold and 72.23% over the 70 percent threshold respectively. To extend the result to the population, this research was tested at Vongchavalitkul University, Thailand too and the results correspond to the results derived from the research experiment at Nakhon Ratchasima Rajabhat University. The students' opinions toward the web based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency show the appropriateness in all aspects and can enhance students' competency.

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*Keywords:* Instructional design; Constructivism; Collaborative learning; Scaffolding system; Cognitive process, Competency

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## 1. Introduction

Today's world which have been changing rapidly in the knowledge-based society focusing on the field of instructional design is a paradigm shift" (Chaijaroen, S., 2005). Several educators advocate the learner-centered approach in education. Currently, it is focused on construction of knowledge which is favored in the cognitive development process supporting the students in knowledge construction rather than the transmission of knowledge (Spiro, R., Feltovich, P., et al., 1995)(Amornsiraphachai, P., Inpress). This is consistent with the National Education Act 1999 and Amendment Act (No. 2) 2002 which state that the education will be based on the principle that all learners are capable of learning and developing themselves and the students are considered as the most important. So the graduates should be fostered in knowledge construction and lifelong learning. Similar to Nakhon Ratchasima Rajabhat University, the learning process must focus on learners' competency by using collaborative learning and a scaffolding system. The environment of web based learning is unlimited dimensions with distance and thus it supports learners to access diverse kinds of information and knowledge resources. Also it provides a space for learners to share experiences and knowledge as well as corporate with peers without the limitations of time and without boundary. This web based learning based on constructivism learning environments of Jonassen's Model (Jonassen, D. H., 1999) can help students construct knowledge more than transfer knowledge to students. With collaborative learning, it will focus on helping students to plan and design their problem solving strategy and guide them to evaluate the problem during the learning process (Mahfudzah O., Muhaini O., Nurzaid M.Z, Atiqqah K.Z. & Mohd Norafizal A. A., 2010). The scaffolding system based on the principle of the Zone of Proximal Development: ZPD (Vygotsky, L. S., 1962) is able to improves students' competency. Apart from above, the characteristics of media and a media symbol system meet

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students' knowledge construction and the use of the media on a network has the features of a hyperlink, hypertext and hypermedia. Thus the media symbol system is influencing in students' cognitive process while they are learning (Kozma, B.R., 1991).

However, the results of the research in phase I that is a development of the web based learning which will be published recently (Deejring, K., Inpress), lack of verification of the web based learning in the validation, a feature that indicates the reliability of the applications available to meet the goal of developing the web based learning in the study. In phase II, the validation focusing on the evaluation to confirm the quality of the web based learning consists of 1) the Internal validation, which is estimated to improve and develop the web based learning for content validity by experts in the field, the media on the network, and the web based learning design and 2) the external validation of the web based learning whose objective is to study the impact of the design web based learning with the learners. In this study, the impact comprises of 1) the opinions of learners learning with the web based learning and 2) the achievement of learners. The results of the study will help to confirm the quality of the web based learning that can be used to enhance learners' competency and intelligence of learners more effectively.

Many of problems in the school are caused by the teachers who lacking of knowledge and competency. So we'll promote the students' competency by using collaborative learning techniques and a scaffolding system. The first research phase of designing the web based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency in higher education. The research and development using instructional design (ID) theory followed the four steps of 1) to study the principle and theories 2) to study the contextual instruction 3) to synthesize the theoretical framework 4) to synthesize the instructional designing framework. The results of the first research phase has composes of 5 elements that are: (1) Problem base (2) Resources (3) Related cases (4) Scaffoldings system and (5) Community for collaborative learning. For collaborative learning, students are divided into small groups to solve the problem, based on concept of Vygotsky(1978), Honebein ( 1993) and Palloff (Palloff and Pratt, 2003) to allow students to interact with each other and provide the opportunity to articulate for multiple perspectives as well as discuss with teachers and experts. These can avoid misunderstanding or misconception and promote competency in cognitive process, problem solving, communication life skill and technology (Ministry of Education, 2008) as shown in Figure 1.

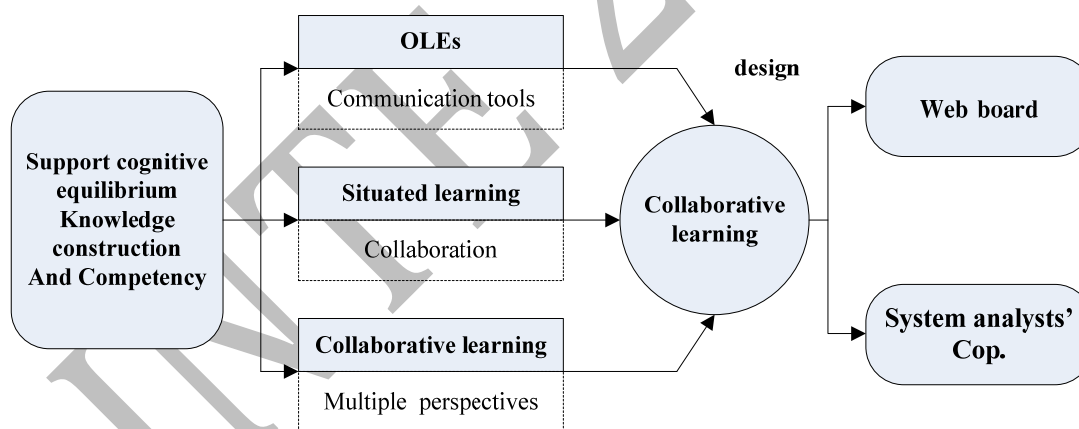


Fig.1. Designing framework of the collaborative learning

To promote and assist the students who are under the zone of proximal development based on Social constructivist theory of Vygotsky (1978), the components of enhancing learners' competency and knowledge construction is scaffolding system as follows. (1) Metacognitive Scaffolding (2) Strategic Scaffolding (3) Conceptual Scaffolding and (4) Procedural Scaffolding, as shown in Figure 2

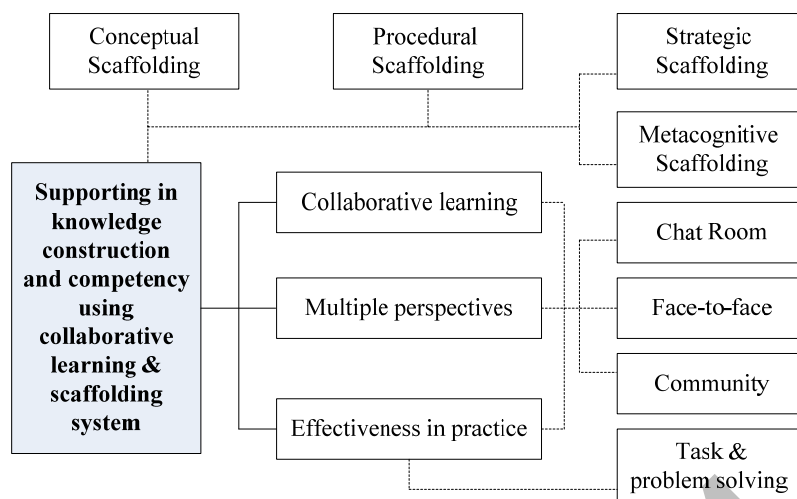


Fig.2. Framework designed for supporting knowledge construction and enhance learners' competency by using collaborative learning and scaffolding system.

## 2. The Purposes of Research

Two main purposes of this study are as follows.

- 2.1. To study the internal validation of this web based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency.
- 2.2. To study the external validation of this web based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency.

## 3. Operational Definition

The definition of operations used in this work are as follows.

- 3.1. The internal validation refers to the examination of the design and development of this web based learning in order to confirm the quality of this web based learning by experts in various fields as follows: 1) the content experts, 2) the media experts and 3) the web based learning design experts.
- 3.2. The external validation refers to the impact of the utilization of this web based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency, according to the framework of the collaborative learning techniques which help the students to exchange their knowledge for multiple perspectives and prevent students from misconception; hence we should encourage the students to build their knowledge and the concept (Driscoll, M. P., 2000). In addition, the impact of the web based learning is applied to the study of the opinions of learners learning with this web based learning and the achievement of learners.

## 4. The Target Group

The target groups used in the internal validation and the external validation are as follows:

- 4.1. The target group for the internal validation consists of 4 experts, 1 instructional designer, 2 developers of constructivist web-based learning environment, and 1 the lecturers of computer education field in the Faculty of Science and technology at Nakhon Ratchasima Rajabhat University, Thailand.
- 4.2. The target group for the external validation consists of 53 second year students studying in computer education field in the Faculty of Science and Technology at Nakhon Ratchasima Rajabhat University, Thailand and generalization to 12 students studying in Vongchavalitkul University, Thailand.

## 5. The Research Instruments

The instruments used in the study and data collection include the followings:

- 5.1. The instruments for collecting data of the internal validation of the web based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency are: (1)

The evaluation form for the quality of this web based learning (2) The designer characteristic survey (3) The developer characteristic survey and (4) The lecturer characteristic survey based on Richey, Klein and Nelson (Richey, R.C. and Klein, J.D., 2007).

- 5.2. The instruments for collecting data of the external validation of the web based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency are as follows. Firstly, the In-depth interviews used for evaluation of learners' competency using open-ended questions, created by using the framework comprised of the principle of core competency by Ministry of Thai Education (Thai basic education curriculum, 2008). Secondly, the opinions of students concerning about learning and teaching with this web based learning (Khan, B. H. and Vega, R., 1997)(Hannafin, M., Land, S. and Oliver, K., 1999). Thirdly, the evaluation of the learners' competency using rating scale questions, created by using the framework comprised of the principle of core competency by Ministry of Thai Education focuses on 1) communication 2) thinking 3) problem solving 4) life skill and 5) technology. Finally, the achievement tests of the students on the system analysis and design in education subject to evaluate the learners' competency in the issue of education that promotes knowledge construction and competency.

## 6. Data Collection and Analysis

The web based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency is used with the target group in order to study the validation of this web based learning in the details of constructing knowledge and promoting learners' competency. The data are collected and analyzed by the researcher as the following details.

- 6.1. The internal validation is the examination of the design and development of **this web based learning** in order to confirm the quality of these by experts in various fields as follows: 1) the content experts, 2) the media experts and 3) the web based learning design experts. The data are collected and analyzed by using the interpretation analytic descriptive and summarization.
- 6.2. The external validation of this web based learning is to study the impact of utilization of the web based learning in 2 aspects as follows. The first aspect is learners' competency according to the framework of core competency by Ministry of Thai Education (Thai basic education curriculum, 2008) focusing on 1) communication 2) thinking 3) problem solving 4) life skill and 5) technology. In this aspect, a post-test is conducted. The second aspect is the learners' opinions **toward** the web based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency. The quantitative data of learners' competency are collected and analyzed by using descriptive statistics (X, S.D.). The qualitative data regarding to the learners' opinions are collected and analyzed by using the interpretation analytic descriptive and summarization.

## 7. Results

From the study of the web based learning using collaborative learning techniques and a scaffolding system to enhance learners' competency, the research results can be summarized as follows:

### 7.1 The results from the internal validation

The result of examination of this web based learning by the experts shows that the designing of this web based learning is appropriate and congruent with the underlined theories and principles. Learning theories used in this research are Cognitive constructivist based on Piaget (Piaget, J., 1975), Social constructivist based on Vygotsky (Vygotsky, L. S., 1962), Bruner (Bruner, J., 1996), Doise and Mugny (Doise, W. and Mugny, G., 1997), media theory and learners' competency based on Ministry of Thai Education. Those theories used as foundation in the design of this web based learning can enhance knowledge construction and learners' competency.

### 7.2 The results from the external validation

The result of the impact of the utilization of this web based learning are as follows:  
The results from the learners' competency show as follows. For the result of the competency test score, it was found that the competency of students for learning system analysis and design was improved. For the students at Nakhon Ratchasima Rajabhat University, Thailand, the average scores of competency test are 82.79 percent over the 70 percent threshold. In case of the student at Vongchavalitkul University, Thailand to extend the result to the population, the average scores of competency test are 77.08 percent over the 70 percent threshold. The

competency and the achievement of learners are correlated. Since when students get high competency scores, they will get high achievement scores as well and when students get low competency scores, they will get low achievement scores too. In the case of the results from the interviews of the learners' competency are as follows.

Firstly, the students understand in learners' competency based on Ministry of Thai Education which focus on 1) communication 2) thinking 3) problem solving 4) life skill and 5) technology. For example, it is found that the students can solve problems in a task by retrieving prior knowledge from their experiences. For the in-depth interview, after learning with this web based learning, the students have to solve the problem about the public library system; thus they attempt to identify the prior knowledge about a library. Then the students link their prior knowledge with the problem, as shown in the empirical evidences as follows: "We think that the operations of a public library system is similar to the operations of the general library system. Both systems have book borrowing and returning; thus this problem is similar to the project about the library system that I have ever done in the database system subject in the last semester.". Another student reveals their thinking as follows: "External entities of the public library system are similar to those of a general library system. This is a key component of our system design. So, we decide to do brain storming in this task.". Another group of students said that we decide to consult with other groups via facebook about the design of a data flow diagram of the public library system. Other empirical evidences about students' conversation are as follows: "we think that facebook and web boards are the best technologies for our group to collaborate with my friends to solve the problem, thus we can plan to design the public library system.". The other groups said that "my group has no idea to solve this task, so we go into the scaffolding which advise my group to solve this task.". Moreover there is a case study indicating that the students can transfer their knowledge to a new situation appropriately and advise the students if they cannot find an answer as well as help to adaptive misconception well. The empirical evidence is the collaborative learning of the web based learning, as shown in Fig. 3.



Fig.3. the collaborative learning of this web based learning

For the learner's competency of the knowledge construction, it is found that the students can adapt, transfer and apply knowledge to a new situation appropriately by using collaborative learning and the scaffolding to enhance learners' competency. The empirical evidence is a diagram of the public library system derived from their collaboration. A process, a data flow and an external entity of the diagram are written on the papers by the students as shown in Fig 4.

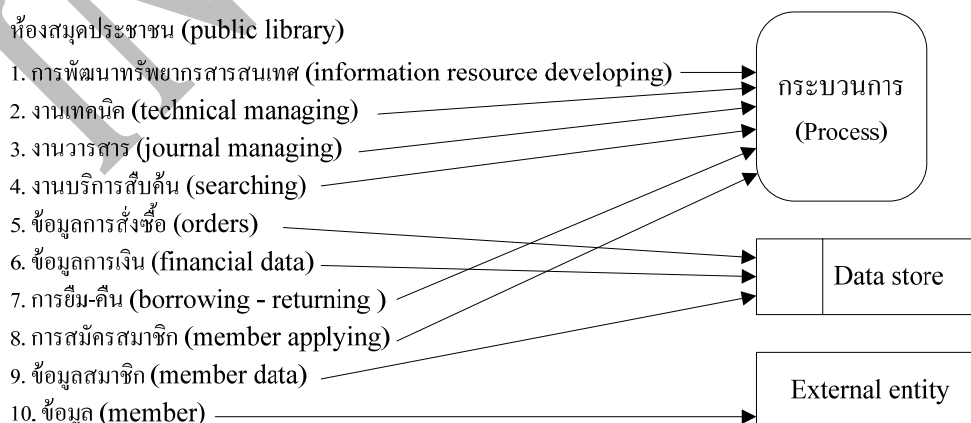


Fig 4. Elements of the diagram written by a student

After learning from the web based learning using collaborative learning techniques and a scaffolding system, student can integrated the knowledge to design a data flow diagram for the public library system. The empirical evidence is a diagram that students write on the paper, as shown in Fig. 5.

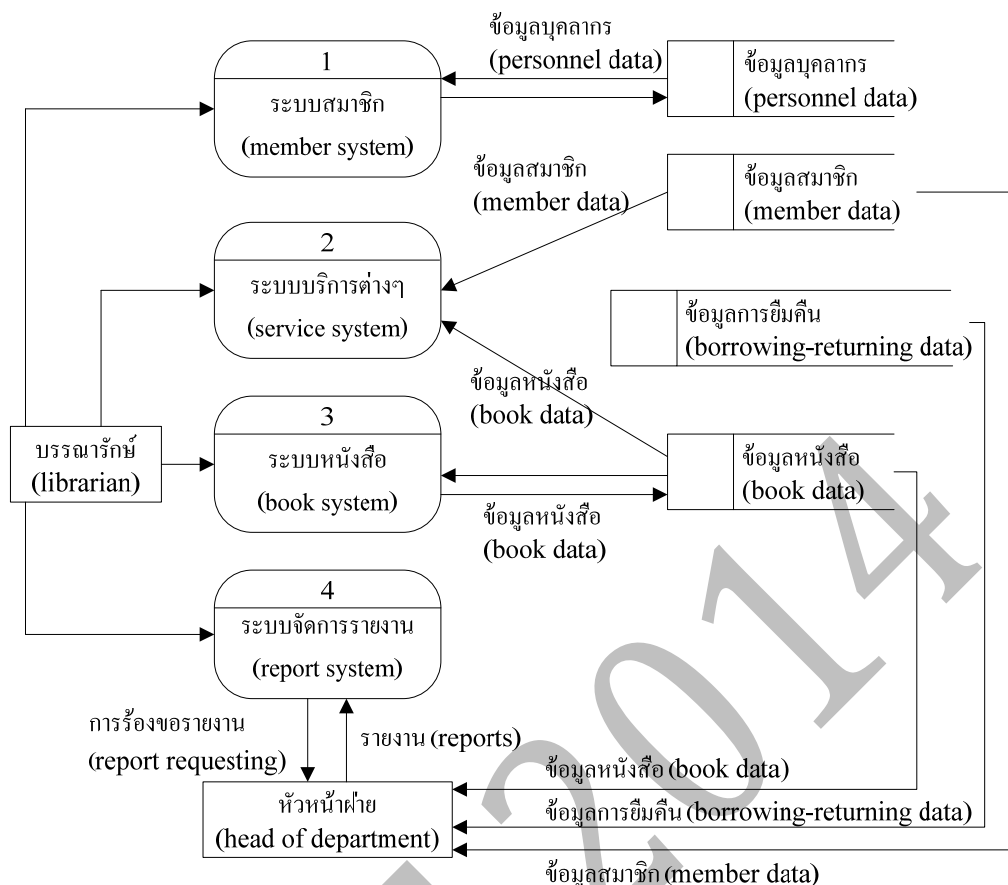


Fig.5: A data flow diagram written by a student

Secondly, from the students' opinion, the results are revealed that the learning content, the media on web and web based learning environments are appropriate for students to construct their own knowledge by using collaborative learning and the scaffolding system to enhance their competency.

Thirdly, for the students' achievement, it is found that in Nakhon Ratchasima Rajabhat University, Thailand there is the average scores are 72.23 percent over the 70 percent threshold. When generalization to Vongchavalitkul University, Thailand there is the average scores are 71 percent. In addition, it shows that the web based learning using collaborative learning techniques and a scaffolding system can enhance the competency of higher education learners.

The students indicate that the web based learning is appropriate in all aspects and it helps students develop their competency as the following details. Firstly, the learning content is up to date, very interesting and beneficial for them to learn by themselves; furthermore the design of the content format helps them understand easily. Secondly, the design of the learning resources makes it easy to access the information. This helps students to obtain the new information and knowledge easily. Thus student can learn by themselves. Thirdly, The design of the web is appropriate; thus it help students to enhance their competency in the aspects of communication, thinking, problem solving and life skill and technology. Therefore these improve the capability of students to learn in the subject of system analysis and design in education.

The above results of the research and the empirical evidences illustrate both the internal and external validations of the web based learning using collaborative learning techniques and a scaffolding system.

## 8. Discussion

The results of the internal and the external validations are revealed as follows. For the internal validation, the model has been examined by 4 experts and it is found that the web based learning design is consistent with underlined theories based on Instruction Design theories (ID Theories). For the external validation, it is found that students learning with this web have high level score in learners' competency. For the students at Nakhon Ratchasima Rajabhat University, Thailand, the average scores are 82.79 percent over the 70 percent threshold

and the standard deviation is 4.96. In case of the students at Vongchavalitkul University, Thailand, the average scores of competency test are 77.08 percent and the standard deviation is 2.95. Furthermore the student's opinions are revealed that the design of this web based learning is appropriate in all aspects and this web based learning can enhance learner's competency. These findings are consistent with the study of (Deejring, K. and Chaijaroen, S., 2012) (Amornsinlaphachai, P. and Deejing, K., 2012) and Gumlunglert Thitima (Gamlanglert, T. and Chaijaroen, S., 2011) studying about the validations of a web based learning. In addition, it is also consistent with Monica W. Tracey (Tracey, M.W., 2009) studying on the design and development for the model of multiple intelligences.

The above mentioned findings of the internal validation and the external validation of the web base learning may cause from the instructional design using ID Theory. Theories used here are learning theories that are Cognitive constructivist based on Piaget (Piaget, J., 1975) and Social constructivist based on Vygotsky (Vygotsky, L. S., 1962) indicating that collaborative learning and scaffolding systems can help the learners who are under zone of proximal development (Bruner, J., 1996; Doise, W. and Mugny, G., 1997). Moreover, the theories used in this study include cognitive theories, media theory and media symbol system. Those can enhance the learners' competency. Based on the theories used as foundation in the design of this web based learning, these leads to enhancing the learners' competency. The success of the internal validation may be caused by the specialization of the web designer since she is a lecturer in computer education for more than 20 years and also she has the educational background; moreover she was graduated in Doctor of Philosophy Program in Educational Technology focusing on Instruction Design. This success is supported by the empirical evidences from the above mentioned experts' examination and the evaluation of the web based learning. Moreover, this web based learning is designed by the combination between the theories and practices; therefore the activities are designed as problem situations with authentic tasks in the real context; thereby this increases the efficiency of the web based learning. The information and communication technology is used to promote learners' competency. This may affect on test scores; thus it improve the ability of students to learn the system analysis and design in education subject.

The various findings of this study and empirical evidences including competency the test scores, the achievement test scores and the interview results show both the internal and external validation of the web-based learning using collaborative learning techniques and a scaffolding system.

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# The vocational maturity of school of physical education and sports students

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## Abstract

The Vocational Maturity is one of the necessary conditions of person to be good at his chosen profession. Individuals who have undergone professional development process and have decided a profession have vocational maturity. The aim of the study was to examine the Vocational Maturity (VM) points of School of Physical Education and Sports (PESS) students comparatively. A total 159 college students who educated Teacher Education (TED, n=40), Coaching Education (CED, n=40), Sport Management (SMD, n=39) and Recreation (RD, n=40) departments were voluntarily participated in the study. In order to find out student's VM level was used VM scale which is constituted 40 items was used to determine attitude about choice of profession of them. The scale was randomly used almost %50 total sizes of class. As a result of VM scale; if the VM points are less than 143, VM level is below the %50; if VM points are among 143-155, VM level is in the range of %50-75 and if VM points are more than 155, VM level can be assessed as high. According to the research results, VM points of TED (154.15±10.49) and RD (151.65±7.23) was found more than 143 but SMD (135.56±6.90) and CED (134.57±9.42) VM points were found less than 143. According to the results of comparative statistics, VM points of TED students are higher than points of SMD and CED students significantly ( $P<0.01$ ). There is no any similar significant differences between points of TED and RD students ( $P>0.05$ ). Furthermore, VM points of RD students are significantly higher than SMD and CED students ( $P<0.01$ ). In conclusion, this outcome might be originated from the higher vocational replacement probability of TED students than other department after graduation.

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*Keywords:* Vocational Maturity, Physical Education Teacher, Students

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## Introduction

Vocational Maturity can be briefly described as individual's career attitudes and competence (Super, 1981). Vocational maturity concept is situated in the center of developmental theory (Akıntuğ & Birol, 2011). The concept can be affected by many factors like culture, gender, age, education level of parents, etc (Karataş & Yavuzer, 2009).

In this study, "There is significant difference between students of TE and other grades" hypothesis was tested. According to this hypothesis, the aim of this research was to determine difference between students educated in School of Physical Education & Sports.

## Material and Methods

### *Participants*

One hundred fifty nine healthy volunteers participated in the study. The subjects were educating Teacher Education (TED, n=40), Coaching Education (CED, n=40), Sport Management (SMD, n=39) and Recreation (RD,



**n=40) departments (3<sup>rd</sup> and 4<sup>th</sup> grade students). Information about purpose of this study was given before filling the VM scale.**

### *Vocational Maturity Scale*

The Vocational Maturity Scale (VMS) was developed by Kuzgun and Bacanlı (1996) was used to determine vocational satisfactoriness of students. The VMS consist of 40 items rating on a 5-point Likert-type scale from 1 (strongly disagree) to 5 (Strongly agree). High scores represent greater level of Vocational Maturity (Kuzgun & Bacanlı, 1996)

Below the 143 VM points was evaluated as less than 50%, between 143-155 VM points was evaluated in the range of 50-75% and above the 155 VM point was evaluated as over the 75%.

## **Results**

Research findings regarding the results of this study are given below. Table 1 and 3 relates to the results. Besides content of table 2 and 4 associated with comparisons.

Table 1: VMS points of classes

Classes (n=40)	Mean±Std.Dev .	Min.	Max.
Coaching Education (n=40)	134.57±9.42	112	150
Sport Management (n=39)	135.56±6.90	123	154
Recreation (n=40)	151.65±7.23	135	169
Teacher Education (n=40)	154.15±10.49	133	172

The results of CE, SM, R and TE departments are shown in the table above (table 1). According to the results students of CE and R departments may need to be developed of vocational satisfactoriness. In spite of that the VM points of TE and R students seems to be satisfying.

Table 2: Comparison of VMS points between departments

	Coaching Education	Sport Management	Recreation	Teacher Education
Coaching Education	-			
Sport Management	0.96	-		
Recreation	0.00**↵	0.00**↵	-	
Teacher Education	0.00**↵	0.00**↵	0.57	-

\*\*p<0.01 (Significant difference)

↵ (Significance directions)

If VM points compared between departments, it can be found that scores of TE and R departments was significantly higher than CE and SM departments (table 2).

Table 3: VMS points of classes

	Classes	Mean ± Std.Dev.	Min.	Max.
Coaching Education	III (n=20)	131.00±9.99	112	149
	IV (n=20)	138.15±7.44	120	150
Sport Management	III (n=19)	137.95±6.36	124	154

	IV (n=20)	133.30±6.77	123	143
Recreation	III (n=20)	148.85±6.92	135	159
	IV (n=20)	154.45±6.54	143	169
Teacher Education	III (n=20)	162.20±5.56	152	172
	IV (n=20)	146.10±7.66	133	158

It seems to be 3<sup>rd</sup> class students of CE departments has lowest VM points. But VM points of TE 3<sup>rd</sup> class students were highest according to other class.

Table 4: Comparison of VMS points between classes

	CEDIII	CEDIV	SMDIII	SMDIV	RDIII	RDIV	TEDIII	TEDIV
CEDIII	-							
CEDIV	0.04*↔	-						
SMDIII	0.06	1.00	-					
SMDIV	0.97	0.41	0.49	-				
RDIII	0.00**↔	0.00**↔	0.00**↔	0.00**↔	-			
RDIV	0.00**↔	0.00**↔	0.00**↔	0.00**↔	0.23	-		
TEDIII	0.00**↔	0.00**↔	0.00**↔	0.00**↔	0.00**↔	0.02*↔	-	
TEDIV	0.00**↔	0.02*↔	0.01*↔	0.00**↔	0.93	0.01**↗	0.00**↗	-

\* P< 0.05; \*\*P<0.01 (Significant differences)

↔ (Significance directions)

CED: Coaching Education Department, SMD: Sport Management Department, RD: Recreation Department, TED: Teacher Education Dept.

This result means that there is significant difference between TED 3<sup>rd</sup> grade students and the other classes (table 4).

## Discussion

It is stated that expected VM level should be above the 143 points. Besides the VM point under 143 is commented as inadequate vocational satisfactoriness. However, in order to reach the level of a student's desired VM is stated that to reach 155 points (Çoban, 2005)

This study is planned to compare VMS point of School of Physical Education Students. The difference between departments and classes was investigated for this purpose. PE department students have highest VMS points compared with other departments. Besides, it is remarkable that students of Recreation Department have second significantly higher VM points compared with other department students. Students of SM and CE departments may have anxiety about getting in a job as public officer.

To conclude, the results of this study support the hypothesis that VM points of PE department students is higher than other department students. The results may be due to the high possibility of settling of students as Physical Education Teacher.

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# The way to open education through the modern technology

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## Abstract

According to the European commission the participation of non-formal and informal education will be increasing. The school should be a center of a community, where a synergy between formal, non-formal and informal education occurs. That means expiring of traditional formal education system and opening it and this process will be successful as far as modern technology will be used. The article speaks about key aspects of these transformation of school role, which will deal with learning society in information age. School should be open institution and the most of its pedagogical and didactic forms have to be changed, equally collaboration must replace cooperation.

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*Keywords:* Technology in Education; ICT; cooperation; collaboration; connectivism; School 2.0

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## 1. From school 1.0 to school 2.0: Transformation of education

One of the most important characteristics of information (or learning) society is amount of data, which are publicly available (Hurchins, 1969)). Join to the MOOC mean free top education, Google Scholar provide database of new articles about different topics. There is not problem get information, challenge is their processing, understanding, analysis and finally reflecting the psychological possibilities and needs of the individual.

Moore's law is observation that every two years (or 18 months is actually period) chip performance would be doubled and withal the price does not change. (Schaller, 1997) That mean exponential growth of performance and – indirectly – massive data growth. This fact is sometimes presented by media as impending disasters, because humanity will be overwhelmed with data. But in fact it is the huge opportunity and challenge, find the way to work effectively with them.

The value of information create people, with work with them. This is the gist of the information revolution. Robert Reich in his book *The Work of Nations: Preparing Ourselves for 21st Century Capitalism* wrote, that arises a new profession: information analyst. Important is not get some information, but analyze them. Other new profession are developed: data scientist, data journalist etc.

Modern period - especially after the establishment of the letterpress printing – is the age of books. Other very significant change brought telecast, where the main is visual perception and with the Internet the digital or interactive culture was born.

It should be emphasized that any of these forms of information culture is reflected in how the teaching looks - the transition from oral teaching to work together with a text, as well as to learning books, pictures to work with tablets, computers and the Internet. It fundamentally reshaping not only form of education but also its content and understanding of the role of students and teachers throughout the education process. (Goff, 1964)

Just for demonstration how the amount of information on the Internet is increasing, we note that every sixty seconds:

- are displayed 20 million photos on Flickr,
- uploaded 72 hours of videos on YouTube,
- two million searches carried out on Google,
- granted 1.8 million likes on Facebook. (Qmee, 2014)

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The world is not possible to describe as a slowly changing or resistant to change, as for example the Middle Ages understands Le Goff, nowadays world is constantly changing organism. (Goff, 1964) This reality must be reflected in education processes by assimilation of teaching methods and content and objectives of education. The dream of Encyclopaedists described in a one book all human knowledge seems to be the utopia. All modern curricular documents tries to reflect this condition and lists of knowledge and skills are replaced by competencies (for example in Czech Republic key competencies for learning, problem solving, communication, social and personal, civil and labor). (Belz, 2001)

In the article *The Future of Employment: How are susceptible to Computerization Jobs?* wrote by Frey and Osborne (2013), is said that there is about half of the jobs, which in the next twenty years expire or change a lot. People in the Information society are not only producers of information or value, but also learners. In this paper we try to show some ways that enable the development of self-learning and its management, which teachers can use mainly for themselves, but also pass on to their pupils.

The world around as is changing dynamic and what is really useful to learn (and teach pupils) is the ability to learn and even in areas that are unknown for us and we have never understood them. The school in the twenty-first century cannot prepare students primarily for one specific profession, as at the time of their maturity will be either distinctly different or not exist at all.

Overall paradigmatic changes can be illustrated by comparing the web 1.0 and 2.0, and traditional school (1.0.) and modern (2.0). Classic web model is based on passive consumption of content reader. The content is created by authority, as in traditional education system, where teacher is the person who knows and tries to transmit some of knowledge to student. Web 2.0 and school 2.0 too are based on absolutely different approach.

Web 2.0 is based on the idea of systematic cooperation, the famous example is Wikipedia, which has no governing authority and everybody who want can create, editation or consummation a content. This leads to a fundamental change of the role of a user who is not just a passive consumer, but also co-creator. Source of knowledge it is not the authority, but a network. It happens on the Internet as well as in school.

## **2. Formal, non-formal and informal education in the ICT context**

In general, we can distinguish three kinds of learning - formal, non-formal and informal. (La Belle, 1982) Formal education is usually provided by the state licensed organizations and leads to getting a diploma or qualification to perform a profession. The greatest representative of this group is the classic (usually public) education - from primary school to university. Typical is that it educates usually children and young people who have no (or very little) work experience. Percentage of people who return to formal education is usually small.

There is a relevant discussion about using ICT in education, especially in primary and secondary schools. The main positive of formal education is a systematic approach and cognitive education, as well as the act, that it usually includes themes which are non popular for students and due to this property helps systematic growth of them. Some experts believe that the use of ICT in education would lead to a decline in the quality of teaching.

The second kind is informal education, which traditionally refers to all targeted education, which does not lead to a profit of school education, a diploma. A large part of these courses is included in the corporate training or lifelong learning. The European Commission offers a definition that informal education is any, which is not directed primarily to gain the certification.

At the intersection between formal and informal education are courses that are organized by the legislative framework and the professional community (eg lifelong education of teaching staff and education of nurses and other medical professions). For non-formal education is important that the main motivation is generally the desire of the individual who want to improve in areas of interest. It is usually largely voluntary, which is very important factor in the pedagogical work with this groups.

Non-formal education is nowadays one of the priorities of the European Commission (Bjornavold, 2000), because it seeks to respond to changes in the world. It can better answer to changes in society (includes profile of students) than classical education. At present is a major challenge to certify institutions that will offer informal education.

An interesting form of learning is informal which can be described as unconscious. It is based on the idea that man learns constantly through interactions with the variables environment. This form of training is often criticized for its vagueness, because leisure activities often included into this as reading newspapers, books, etc. But there in a fact, that for example control home electronics and mobile phones leads to a gain of skills and knowledge that are very specific and often not negligible. Critics of the concept of informal education argue that any such learning is conscious and therefore it is a non-formal education. In general, we can say that informal education is that which develops man in his environment without any course or authority.

In ICT is crucial that the most of knowledge and skills people raise in informal education, regardless of age of members of target group. Students will easily learn to use social networks, mobile phones or writing a blog, but

very problematic is obtain an awareness of context or security or technologies. And these are the areas that should be cover by formal education within their courses of Computer Science.

### **3. From collaboration cooperation**

School should teach teamwork today, it is the undeniable fact. But it is necessary to distinguish between two basic types - cooperation and collaboration as two fundamentally different approaches. (Paulus, 2005) During the cooperation, each participant in the project has the unique, clearly defined, and an irreplaceable role. Absence of a single member is usually fatal for whole task. Interaction is less important, because every unit preforms the task relatively independently and interaction with the environment is given only overtaking, or passing some results. Example of cooperation is creation of a book: one person wrote it, the second typeset, third proofed, another ensured publication, marketing, etc.

Another approach offers collaboration, which is intensive teamwork. The author of the product are not individuals, but a team. It is not so important who made the concrete part and how participated. There is possible to talk about the responsibility of the whole group but not about individuals - anybody can have a role of facilitator, somebody could theoretically be an expert who puts everything into context and so on. Implementer can then be quite average member of the group, no anybody exceptional.

In principle, we can identify four fundamental differences between collaborative and cooperative teamwork. The autonomy of individual subjects is the first characteristic values. While the cooperation is everybody strongly independent and oversight is exercised usually by supervisor or manager who must continually evaluate the activities of individuals. During the collaboration is the unit whole group and individual must focus on needs, requirements and procedures of complex. When selecting a software platform for cooperation, for example, is necessary to monitor the possibilities of behavior analysis and performance of the tasks of each individual. Cooperation is a common model of team work in traditional organization.

An important feature is also a question of homogeneity or heterogeneity of the group. While the cooperative projects diversity does not show and usually is not too much required (maximum in the Division of roles, i.e., what man can and what he likes), in the case of collaboration is the obvious assumption of considerable internal heterogeneity, which is supposed to be for work stimulating. (Kruger, 1993)

In the case of collaboration is an important dimension of the identification with the group. There is a fundamental difference between members and non-members. A platform for ensuring cooperation would in this case work with community elements offering the possibility to deepen social links and sharing. On the contrary the cooperative concept is significantly more open, it can easily enter into it. It is good to consider the strategy of cooperation, which the organization wants to watch and vote the communication channels, the documentary procedures, communication projects externally, etc.

Level of interactivity is the last important difference to which it is necessary to remember. While in the case of cooperation it is only marginal and it is rather needed to ensure the data flows within the project, so collaboration is a space for considerably less bounded by the activities of individuals. Personal pages or boxes in this case do not have such a meaning, though in cooperation are completely fundamental question.

The question of course is which variant is more effective and better. There is no clear answer, but in general it can be said that the current method of hierarchical control is more cooperative, while community or matrix organization structure encourages collaboration. Another aspect that we must consider is how you can involve, for example, users or visitors to the institution. Whether through building communities that are working together to get something done (in this case, quite naturally follows the tradition of federal activities), or to team work on various development projects such as building digital libraries, web design or preparation of the exhibition, where on the other hand offers a more cooperative model.

### **4. Connectivism as a starting point for school of the 21<sup>st</sup> century**

According to the founder of connectivism theory of education is necessary in the general bases build on the principles of constructivism, but supplemented by following principles:

- Learning and knowledge rests in diversity of opinions.
  - Learning is a process of connecting specialized nodes or information sources.
  - Learning may reside in non-human appliances.
  - Capacity to know more is more critical than what is currently known
  - Nurturing and maintaining connections is needed to facilitate continual learning.
  - Ability to see connections between fields, ideas, and concepts is a core skill.
  - Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- (Siemens, 2004)

Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision. V rámci pedagogického i společenské, analyzujeme základní roli školy. Bude se věnovat postup od uzavřeného školství k tomu

Connectivism education stands on three - for school important - pillars. The first is to build a cooperative communities that transcend the school, creating a natural bridge between formal, non-formal and informal learning. The school should play a synergistic role rather than solely educational. These communities are fundamentally cooperative. The second point is the need to use modern technology. Connectivism is not conceivable without an Internet connection for each student. And a third is the development of information education and digital literacy. (Bessenyei, 2008)

Connectivism does not focus on the lower layers of Bloom's taxonomy, since they can be easily found on the network or implement models using artificial intelligence, but seeks to synthesis, analysis and evaluation. One of the most common objections against connectivism is particularly the young - the first formulation are from 2005 and there are very few comparative literature and relevant research that should be affirmed. As already mentioned, may be perceived more as a pedagogical perspective or application of certain ICT practices on constructivist-oriented teaching than a pedagogical direction or paradigm of education. Often there is also the objection that it does not bring too new and is rather a synthesis of approaches and complaints of older and well known - whether the application of the concept of collective intelligence, machine learning, or two well-known social and collective learning.

On connectivism are based primarily MOOC courses (de Waard, 2008), which today constitute one of the major trends in teaching and learning at all. Despite the fact that the percentage of successful completion of the courses is around 5 percent. If today talking about a new trend in terms of learning communities, we can say that it is again an application the paradigm of connectivism.

## 5. Conclusion

Modern technology offers not only the opportunity to change the subject didactics and teaching methods, or to implement to the attendance education elements of e-learning, but raise the need for a fundamental transformation of education. Transition from school 1.0 to school 2.0 seems to be necessary. Teaching cooperation, working with community professionals crossing borders schools and emphasis on non-formal education are certainly trends that change the role of students as well as teachers and the actual organization of the study.

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# Theory of problem solving

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## Abstract

The article reacts on the works of the leading theorists in the fields of psychology focusing on the theory of problem solving. It contains an analysis of already published knowledge, compares it and evaluates it critically in order to create a basis that is corresponding to the current state of cognition. In its introductory part, it pursues a term problem and its definition. Furthermore, it pursues the problematic situations and circumstances that accompany the particular problem and appear during its solving. The main part of this article is an analysis of the problem solving process itself. It specifies related terms in detail, e.g. the ability to perceive the problem, the perceptibility of the problem, the willingness to solve the problem, the awareness of existence of the problem or strategies of problem solving. Published knowledge is applicable not only in fields of psychology, but also in fields of pedagogy, or education.

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## Problem and its definition

The human beings are in their lives every day confronted with the situations that are for them contradictory, containing obstructions that have to be overcome in order to achieve the aim, or the human beings experience various difficulties. To cope with these situations, it is desirable to apply the thought processes enabling generating of knowledge necessary for a successful solving or removing of the above-mentioned obstructions. Those situations, raising the inevitably thought processes, are, according to A. M. Matyushkin (1973, p. 20), in psychology called as the *problem situations* and the relevant tasks as the *problem tasks*.

The definition of the term *problem* is presented differently, therefore it is desirable to analyse it in detail and define it. Theoretically, *a problem* is understood as a difficulty of theoretical or practical nature that causes an inquiring attitude of a subject and leads him/her to the enrichment of his/her knowledge (Cz. Kupisiewicz, p. 16). This term is in the fields of education similarly understood by a Polish scientist, W. Okoń (p. 79), who defines a didactic problem as a practical or theoretical difficulty that a pupil has to solve independently by his own active research. Usually, the base of this difficulty is a systematic and deliberately organized situation, in which the pupil aspires to overcome the difficulties in accordance to the specific needs and by this he/she gains new knowledge and experience. The analysis of this particular situation leads to the formulation of a problem – to the verbal definition of the occurred difficulty.

The term problem defines J. Linhart (1976, p. 385) as:

- a) problem is an interactive relation between a subject and its surroundings, which incorporates the inner conflict that is solved by the subject by searching of transitions from initial condition to the final condition (aim),
- b) the existence of a conflict causes the dynamics of an activity and, furthermore, it establishes a source of motivated activity,
- c) during the solving of a conflict, the subject exceeds something that is directly stated, i.e. he/she exceeds the current situation and stated information and searches for new approaches.

Dunker (1945) states that a problem arises, when a person has a specific aim but he/she does not know how to achieve it. However, this statement is only one of the possible cases since a problematic relation does not have to be primarily based on the aim of the person, but also on the difficulties and inner uncertainty. The individual is aware of the problem that has already arisen and then he/she establishes the aims to remove the difficulties and uncertainty causing the burdensome feeling. The problem is defined by a relation between the subject and

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objective situation in the environment. A problematic relation has a nature (Linhart, 1976, p. 78) of:

- a) either a conflict between two contradictory tendencies which the subject sees as two incompatible alternatives, or as a difference or conflict between the current situation and the aim; the subject needs to achieve the aim but he/she does not know the means to achieve it – the result is "a perceived inconsistency" of the situation; the problem solving consists of the removal of the conflict and the finding of the desired object.
- b) a disorder in the objective situation or in the structure of an activity and subjective uncertainty that causes activating tension and motivating focus.

Appropriate conditions enable the formation of a *problematic situation*, in which the individual finds him/herself and that surrounds him/her. According to suitable statement of Cz. Kupisiewicz (1964, p. 16), this situation embarrasses the individual which causes a feeling of a difficulty superimposed by curiosity and strives to satisfy him/her. Acquired forms of behaviour of the individual find themselves in a conflict with the given situation, the individual is forced to adapt to those new situations, to create the new ways of behaviour by which a new balance of the forces is developed therefore the conflict is overcome (comparison to Linhart, 1982, p. 63). The *problematic situation* cannot be confused with a *problem*; this term will be defined later. By studying of the scientific publications we draw a conclusion that the most suitable definition is made by J. Linhart (1976, p. 385), who defines the *problematic situation* as a totality of conditions that determine the formation and specifics of the problem. It is impossible to be fully identified with another definition made by I. J. Lerner (1986, p. 91). He defines a *problematic situation* as a barrier that subject is clearly or indefinitely aware of and to its overcoming he/she needs a creative search of the new knowledge, new ways and activities. However, the barrier is not the only element of the problematic situation - this role is played by the other factors as well.

Analysing the different problematic situations, we draw a conclusion that they are characterized by diversity and it is possible to divide them in the groups based on the similar signs. Considering the understanding and subsequent problem solving, as the most simple situations occur those where necessary pieces of information are apparent and where no unnecessary data, that would have to be filtered out and analysed by concluding operations, are presented. The problem is clear and, basically, it is only a matter of finding its solution. All substantial circumstances are clearly specified: the current state, the target state and the available operators. These situations can be described as the *specific problematic situations* and as the examples can be named different types of brain teasers. It is possible to meet this kind of problematic situations very often in the field of school education, to which refer Mayer and Wittrock (2006). They state that educational materials very often prioritize well-defined problems; however, the most of the real life problems are defined wrongly. As found, an ease of preparation of those problematic situations from side of the teacher, high number of students and to that related level of the problematic situations contribute to that. Further problems may cause the relative time consuming which is advantageous mainly because of the length of the standardized teaching unit. The opposite situations that can be called as *uncertain* problematic situations are characteristic by the lack of information which has to be firstly gained. Often it is not obvious which information will be needed for problem solution and the problem is not obvious as well as it has to be firstly identified, prepared and defined and later solved. The objective uncertainty is outside the individual who finds himself in the problematic situation. Funke and Frensch (1995) refer to those problematic situations as "non-transparent".

The problematic situations are possible to be assessed in terms of statics, or dynamics, which is defined e.g. by the authors Blech and Funke (2010), Klieme (2004), Wirth and Klieme (2004). The changeability of the complex of the conditions, that determine the creation and specifics of the problem in time, is determinable. For the problem solving is more advantageous when the conditions are stable and no changes are happening – in these cases is the problematic situation called *static* problematic situation. An example of static problematic situation can be, again, a brain teaser. On the other hand, for the *dynamic problematic situations* is the change of conditions, that determine creation and specifics of the problem in time, characteristic. The conditions can change because of various influences, whose creation and effect can the individual not affect. The on-going consideration of the influences acting in time and their control is an assumption for successful problem solving process in those situations. The dynamics does not have to be in the context of problem solving understood as negative, it can operate also positively, and e.g. previously unsolvable problem suddenly becomes solvable.

## Problem solving

As it was already discussed above, the thinking of an individual begins with the awareness of the problematic situation. In this case, the problematic situation has a potential to grow into a problem that deserves a solution. Every problem is bound to the problematic situation, however, not every problematic situation turns into the problem because this reality depends on the individual. A person, who finds him/herself in a problematic situation and is aware of its existence, does not have to "see" the problem until the *ability of the problem*



*awareness* is developed. The individual, who is aware of the problem, is able to specify the difficulty or the source of the conflict which causes the problematic situation, is capable to deal with the problem. Contrary to that, the individual who is not able to be aware of the problem, is albeit experiencing the feeling superimposed by curiosity, however, does not realise what causes the difficulty, which obstacle that causes the conflict has to be removed, and, therefore, he is not able to remove it. A lot of factors affect the problem awareness and those can appear inside the problematic situation, e.g.: the inappropriate verbal utterances that should induce the situation or the lack of knowledge. They can also appear outside the problematic situation, i.a. noise, improper lighting or a visual impairment. Taking this into account, we can mention also so-called *perceptibility of the problem*. The threshold of the perceptibility is different amongst the individuals which is mainly conspicuous when more people find themselves in a problematic situations of the same parameters. The exterior conditions of the individual are the same, the conditions directly connected to the individual are different.

If the individual perceives the problem, *the willingness to deal with the problem* is very essential. This is a state when the individual approaches the evaluation of the circumstances of the problem and character of the problematic situation. He/she evaluates the particular circumstances and he/she attaches a particular importance to them. One of the opinions is that he/she is not willing to deal with the problem in the current situation or to proceed to its solution. This is very important in the educational field because the problems that are given to the pupils should be the ones that the pupils accept willingly and if not, the pupils should be motivated. The reluctance to deal with the problem is going to be obvious mainly in the situations that allow an escape because the feeling of difficulties is not pleasant for every individual.

If the individual is willing to deal with the problem, it does not mean that he/she is going to be willing to solve it. If he/she e.g. does not have the initial data for seeking the ways of overcoming the obstacles and there are no obvious possibilities to gain the data, then the situation is not accepted by him/her, therefore it will not be reflected in his/her thinking. In this case there is no will connected to the effort to solve the problem going to appear. The *willingness to solve the problem*, similarly as the willingness to deal with the problem, cannot be assumed automatically, therefore it is desirable to induce it with the help of the appropriate resources and ways, and to motivate the individual. R. E. Mayer states that the willingness is affected by motivational and emotional factors such as the interest, the conviction (self-confidence) and the conception of own abilities (1998). In the motivation of the individual can appear interests, habits, ideals or external stimuli, and others, depending on the nature of the problem. The willingness to solve the problem negatively affect three factors that cannot be neglected. M. Nakonecny (1998, p. 458) states that for the individual's willingness to solve the problem and deal with it is essential the probability that he/she achieves his aim. The value of the aim, which should be achieved by solving or the subject's expectations of possible consequences, play an important role as well.

Only two ways of being excited by motives to solve the problem are meaningful in the educational field. First case is to create a situation that excites the pupil, energises him/her, and i.e. induces a state in which the pupil experiences the impulse or forcing to the interest about the problem and its solution. The teacher has to lead the pupil to the experience of wanting to be active. The interest about the problem solving has to be aroused, which enables to satisfy the need resulting from the unfamiliarity, we can speak about so-called cognitive need. M. Nakonecny (Zaklady psychologie, 1998) states that this state is characterised by a particular tension and motive (compulsion), and for that is important to understand the problem and to perceive the obstacle that prevents the achievement of the aim. A problem always contains a conflict or a difficulty, which has to be overcome during the solution process. However, the obstacle has to be conspicuous to the individual so that the conflict or a difficulty are feelable. The mentioned state can be characterised as a disequilibrium and the individual is motivated to balance it which leads to his/her satisfaction. The need is satisfied by solving the problem and gaining the needed knowledge.

The second way is the application of external stimuli that cause inner motives and that are resources of satisfying the individual's inner needs. Instead of desire to solve the problem and satisfaction of the needs regarding its solution the individual him/herself orients to the effective solution of the problem. The purpose stays in this case outside the problem itself because the problem plays only a vicarious role. The pupil solves the problem in order to achieve the aim and the problem solving becomes only a resource. This is in terms of educational results not as beneficial as when the interest in the problem itself appears. It is typical for the school environment to apply the stimuli that are not natural, e.g. the pupil does not encounter grades in normal life.

*The problem solving* can be according to R. E. Mayer (1990) defined as a summary of the cognitive processes focused on the change of the given state to the final state where the solution procedure is not obvious. The given characteristics is among the experts of problem solving usually accepted (Klieme 2004; Mayer and Wittrock, 2006; Reef et al., 2006). The problem solving and its cause is defined in the work of Funke (2010) who stated that the person's initial knowledge of the problem are the conditions (the given state). The operations are permissible activities that can be performed in order to achieve the required final state (result) with the help of available instruments. On the way to the aim are standing obstacles that have to be overcome (e.g. the lack of knowledge or the directly obvious strategies). The process of overcoming of the obstacles can include not only cognitive but also motivational and emotional aspects.

The solution of the didactic problem begins with *the awareness of the existence of the problematic situation* followed by understanding of its essence. During the problem solving the human being faces many obstacles and meets different possible solutions among which he/she has to choose. His/her personality itself is a very complicated system of characteristics and roles - their interaction is often contradictory. Fight between the motives is conditioned by that, it is characteristic for the active behaviour: attitude and emotionally substantiated wishes of the subject very often collide with the surrounding world (compar. Linhart, 1982, p. 63). The problem solving is a personal and aimed process. That means that the activities done by an individual during the problem solving process are led to his/her personal aim (Mayer and Wittrock, 2006).

An individual has to identify the problem first and then seek for possible solutions (Mayer and Wittrock, 2006). There are typical phases used for the problem solving that are being discussed by different authors, e.g. J. Linhart (1976, p.78) suggests that the subject experiences three phases:

- the discovery of the problematic situation,
- the phase of the solution process, where the subject meets the properties of the situation and seeks for the resources that can change the situation (object) with respect to the required aim and
- the phase of verification of the discovered property or method and its use in other problems of the same order.

It is possible to agree with above-mentioned information, however, the situation is more complex and needs further analysis that emphasises the individual and his/her thinking process and behaviour. The presumptions can be found in research PISA 2012 (*Conceptual framework of the problem solving PISA 2012*) within which the activities of an individual were indicated and evaluated. Those activities are: research and understanding, representation and formulation, planning and performing, observation and evaluation. Not only those ways but also others will be characterised later on.

In literature, it is possible to encounter the efforts of problem solving ways to order the individual phases. In accordance with the authors Lesh and Zawojewski (2007), it cannot be presumed that those activities are performed in an individual order the problem solving, nor that all possible ways are applied. During structuring, representation and solving of the authentic problems that arise from the real life situations is the final problem solving reached in a way that overcomes boundaries of a linear consecution step by step. The before-mentioned authors say that current knowledge of the human cognitive system functioning actually indicates that it can process different pieces of information simultaneously.

The individual, that find him/herself in the problematic situation and is aware of its existence, has to firstly *get to know with the elements, circumstances and influences that create the situation and are a part of it*. The result of this conduct should be the creation of a mental representation of all internal and external entities that are a part of the problem or create it directly. The individual explores the situation with this aim and during this time he/she observes and affects it with an aim to learn it and understand it. It is needed to understand the given pieces of information as well as those that are being gained in the interaction with the problematic situation and the understanding of the particular elements of the problem. The representation of the elements, its bonds, acting effect and registering of the new knowledge, is typical in order to reach the better understanding. Thinking of the individual can then orientate on the insight of the problem, the memory is therefore available for other needs. That enables the creation of the coherent mental representation of the problematic situation in whole, i.e. situation model or the problem model (*Conceptual framework of problem solving PISA 2012*).

The elements, connections and influences in their nature can be formed dynamic, variable in time and space which is negative for their cognition and understanding. However, if they have been already recognised and understood, their changes can be positive in accordance to the problem solving. The changes can then induce appropriate circumstances and conditions.

The problematic situation includes circumstances and conditions that cause difficulty, conflict, unrest, feeling of uncertainty, limitation, or a concern over the disorder. Those can be of material and non-material nature and can require operations with physical objects, things or thought operations. The individual has to perform an analysis of the problematic situation and *prepare a cause of the conflict or difficulty* which causes a problematic state that tempts him to solve, remove or overcome it. The cause has to be distinguished from other entities to ensure a relation to the relating objects and to determine the character of links. The conflict and the difficulty are always impalpable, internal and experienced by subject. On the other hand, the causing reason can be palpable and also impalpable.

It remains an open question if the problem solving consists of reshaping the external circumstances and conditions, or the internal ones. J. Linhart (1976) states that the problem solving process consists of reshaping the object and its reconstruction in order to overcome the given problem and to find an objectively needed alternative of solution and negotiation. Considering the characteristics, the complexity of human psychology and the science development, the cognition of a particular situation as a problematic one can be removed by appropriate ways and resources in order to remove the conflict and the experience of difficulties. Therefore it cannot be unambiguously presumed that the problem solving is related only to surrounding world of the

individual, however, the essence of most of the problem solving remains unquestionably outside the individual.

If the individual is aware of the cause of the conflict or the difficulty, he/she accesses to the cognition about *what causes it and how can the creation be precluded* – by removal of the obstacles, reordering of the elements system, or ordering the elements into a system. He/she thinks about the kind of resources he/she has, how he/she can use them properly, and what way he/she should choose in relation to its removal. This is a complex of various acts and thought processes that (according to the character of the solved problem) contain manipulation with the objects of material nature; it indicates an interaction, an evaluation of the situation in the new conditions that are distinguished by changes made by an individual. During the problem solving process the individual has to bear in mind the knowledge of various types and operate with them (Mayer and Wittrock, 2006). During the solving the individual defines hypotheses, gains new pieces of information and finds out gradually which circumstances affect, or don't affect the removal of the cause, the conflict or the difficulty. The structuring of information and their critical evaluating is also being performed. The result of this process is the knowledge that can be transferred and used properly in problem solving of a similar nature. In this context are some problems more or less interactive, e.g. the individual has to affect one or more input variables and evaluate the effect on them. The variables can influence each other which increases the complexity of the problem solving. It is desirable to keep the individual motivated, mainly when there is no longer found the fact that causes the reason of the conflict, or when there is not sure how to remove it. The situation is then demotivating and the individual may refrain from the problem solving.

The problem itself does not show the direction of solution and it does not restrict it (I. J. Lerner, 1986, p. 91-92). It is characteristic for the *problem task* where the parameters and the requirement of the solutions are given. Thus a problem that contains parameters of its solution is a problem task.

For the successful problem solution, it is appropriate to perform the *planning* of the particular steps that lead to its successful resolution. Planning is developed from the circumstances of the problem, contexts and influences that create the problematic situation and, possibly, the stated parameters. The compiled plan does not have to be definite and it is very probable that there will be changes performed that reflect the new knowledge gained during its solving.

Considering the personality of the individual, the used ways for the solution are being settled with higher number of solved problems. It is possible to speak about the *strategy of the problem solving* that can be characterized as a plan of the sequence of steps consisting of application of proper methods and resources that lead to the successful problem solving. The distinctiveness of the circumstances of the problem is being reflected into the strategy. Furthermore, it is being judged by the individual and according to it he/she chooses the form of the individual steps. Those that did not acquitted themselves well are no longer used in the similar problematic situations. The increasing frequency of the solved problems has a formative meaning from this point of view.

*Parameters of solution* are limiting, regulative and deliberately settled factors: the individual solving the problem is being limited in the possibilities of the solution, the ways are being defined by the parameters, and the forms or resources that can or cannot be used are being defined by them as well. They can also express the resulting quality of the solution. They can be regulated in a way that the problem solving takes place according to the needs of the author of the problem task which is in a certain direction advantageous for the needs of the education; however, they limit the creativity. The given parameters can contribute to the finding of the path of the problem's solution that can be unsolvable for the individual without them.

After the fact that causes the reason of the conflict is found as well as the way of how to eliminate it, the individual tries to *remove* it. It is therefore needed to *act* and when it is successful, it removes the cause of the conflict, difficulty and the problem is solved. There are expected skills that the individual has already gained which facilitates the problem solving and mainly in relation to the shortening of the time needed for the solution.

The problem solving process includes also *cognition of progress*. If the solution ought to be successful, the individual has to perceive the aftermaths of his/her own acting in the individual phases of the problem solving, he/she has to *verify* if the action had a positive effect on the problem solving itself, if he/she gets closer to the expected aim or whether he/she gets more distant from it. The unexpected events can intervene in the way of the solving that change the problematic situation and can have an influence on the solving process.

*The resolution of the problem* can be described as a state characterized as the removal, disappearance or fading of the difficulties, conflict, unrest, feeling of uncertainty, or a concern. The two possible ways of reaching the resolution were already discussed as these are internal and external ways. The solving does not have to be based on the individual who experiences the problem and feels it - another individual or a group of cooperating individuals can contribute to those before-mentioned ways. In extreme cases does not the individual experiencing the difficulty or a conflict have to perform any action and the problem can be solved as a result of the spontaneous change of the acting circumstances or the change caused by another person.

In the literature devoted to the problem solving, it is possible to encounter with a term *competency to solve the problem*. In publication OECD (Problem Solving for Tomorrow's World, 2004) based on researches of the scientific publications is the term defined: *the competency to solve the problem* is an ability of the individual to use the cognitive skills for understanding of the problematic situations and its resolution in case when no obvious

way of solution is presented. Its part is also the individual's willingness to deal with those situations so that he/she can grow his/her own potential as a constructive and thoughtful citizen. It is not important that the competency is defined as ability - we only emphasize this fact, but it is more important to note the following fact: in the framework of PISA from the year 2003 was the competency defined similarly, mainly its first part. As mentioned in publication (Problem Solving for Tomorrow's World, 2004), whereas the definition from 2003 contained only the cognitive dimension and emphasized especially the interdisciplinarity of the evaluation. In 2012 was into the definition added also an emotional component in accordance to the competency definitions of OECD (OECD, 2003). The competency is more than a reproduction of the maintained knowledge - it contains mobilisation of the cognitive and practical skills, creativity and other psychological sources, i.e. attitudes, motivation and values (OECD, 2003).

As mentioned, it is needed to have the knowledge for the solving and successful resolution, it is also possible to speak about the cognition basis. However, that cannot be understood as something closed but as a dynamically developing process of the problem solving because the part of the competency to solve the problems is an ability to actively gain and use the new knowledge in a direct contact with a barrier or a difficulty and action performed on it, or gaining new knowledge from other sources that are also needed for the successful solution of the problem. Even the current, i.e. already gained knowledge before the start of problem solving, can be used in a new way. That enables solution of non-routine, subjectively new tasks.

*Time needed for problem solving* is a significantly undetermined variable. Time needed for finding and removing is affected by a number of internal and external factors. The external factors are given by their diversity of circumstances and their order, the inner factors are given by inherent and gained dispositions of the individual. It is important to take into account those facts during the educational process where the problem solving is used because the pupils could need a different period of time for the resolution of the problem.

## Conclusion

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# Thought and body. An activity of logic in primary school.

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## Abstract

In the recent decades, the pedagogical debate has been formerly traversed by the emergence and then by the assertion of a matured awareness on the importance of the psychomotor skills in the educational- didactic path. The interpretive bio-psycho-social matrix has today become one of the pivotal points on which the educational-didactic activity rests and develops for the training of child's personality in its full motor, mental, perceptual, emotional, sensory development. Pedagogues, educators, and training professionals are increasingly confident that, since the birth, children are sensitive to the stimuli and to the environmental intervention, therefore it's essential to know their growth allowing them to express their potential at the maximum possible level. Essential was the contribution given by Jean Le Boulch, who considering the individual in his entirety, stresses the importance of affectivity in the path of a motor, logical-communicative, psycho-physical maturity of the child (Le Boulch 2010).

This guarantees the full functional development and the acquisition of a corporeal awareness, which is basic and indispensable, both in the path of space-time orientation and in the path of logical-conceptual acquisition. Within this theoretical framework, it has been thought of a teaching proposal which would combine all the highlighted points for a project that will promote the development of language and logical thinking. The project is addressed to pupils in the first classes of the primary school. The proposed subjects, directly recall the functions above mentioned. If we consider language and motion as instruments of thought, we suggest activities meant to supply children with a rich endowment which define certain aspects and elements of the surrounding and everyday actions.

These activities will also translate emotion and perceptions in words. A child should be educated to communicate his experiences following the space and time landmarks, to describe objects, people and events. One should promote activities that help to organize logically events and circumstances. The path is articulated in different points:

1. (First step of corporeal involvement) pupils altogether start to walk following a prearranged course; teacher, illustrating what they can see around, underlines certain points and objects.
2. The second step occurs in the classroom: during a collective discussion, pupils will decide the benchmarks which will help them to recreate the path. Teacher's role will be to stimulate the discussion through questions on the features of the references chosen by pupils and on the features that don't belong to them.
3. The third step consists in the representation of references as drawings which will be reproduced in their description with affirmative and negative sentences; other questions will stimulate their perception of the body in a three-dimensional context. The questions could be: was the object at your right or at your left? In that point, have we turned to the right or to the left? Was that object before or after the other?

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*Keywords:* Psychomotor skills; Didactic; Biology; Corporeality; Elementary Logic.

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## Psychomotor skills and learning between biology and didactic

The necessity of identify an epistemological framework which is able to validate and corroborate the importance of motor skills and corporeality in motion in the processes of knowledge's acquisition, represents a recent requirement. Only during the '70 in Italy developed the idea of the importance of using curricular models based upon psycho-motor, socio-motor and psycho-kinetic dynamics in the educational processes of young generations.

However, the close relationship between the corporeal reality and the educational processes has deep and consolidated roots in the human history (though many philosophers and scholars strongly criticized motor and recreational activities.) Plato, for example, makes Socrates say in the *Major Alcibiades* that "[...] man is what uses the body [...]. And what else employs the body if not his soul?" (Mari, 2007).

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This point of view has for a long time contributed to foment a superficial and reductive idea of corporeality, mostly linked with the aesthetic standards, ignoring the concept of motion as a means of learning and as a vehicle for the establishment of social relationship.

In this perspective, the most significant functions of a human person as: language, learning, expressivity, understanding, affectivity were rigorously separated from the body, which was considered a material element through which these functions showed themselves (Gomez Paloma, 2004).

By the end of nineteenth century, a complex movement of studies started to develop and they demonstrate as certain aspects of the personality were closely related with it.

It's only with the phenomenology of perception by Merleau Ponty that it was possible to emphasize the importance of the body as a "permanent referent" of every human activity and as a "biological principle of his presence in the world" (Merleau Ponty, 2003).

For Husserl, for example, the logic is "theory of theories". It is not only a logical discourse on logic, but a meta-discourse on the logic, which, however, is not presented as a speculative superstructure (Husserl, 1996).

### **Can we “do logic” walking?**

This is what we wonder about when we started to structure this project of experimental type, based on conversations we had with Italian teachers of preschool and primary school.

Today, logic seems to have an hard role in the teaching of elementary mathematics and the reasons derive from many factors.

The aim of the work is not to establish the reasons why this field of the mathematics is not appreciated by teachers and pupils, but it is to find a method for starting to give the first concepts of elementary logic both stimulating teachers to go ahead educating, and pupils' curiosity and interest through those concepts which are the objects of study analyzed in the following years.

The basis of propositional logic are part of a logical education that rather than being an object of explicit and formalized teaching, it should be subject of reflection and continuous care of teachers, who have to promote and stimulate the cognitive development of the child, promptly discovering possible problems or deficiencies.

Particular attention will be paid to the conquest of accuracy and completeness of the language, considering that especially in the first years of school, the natural language has an expressive richness and logical potentiality adequate to the necessity of learning.

Teachers will propose, from the beginning, on the level of experience and concrete manipulation, activities rich in logical potentiality which will be employed for arithmetic, geometry, sciences, language, etc. Among the aims of the first two years of primary school, we include:

- To classify objects, figures, numbers... according to a given fact and vice versa, to indicate an attribute which can explain the given classification.
- To identify, in problematic and concrete context and in those very simple, all possible cases of combinations of objects and attributes.
- Discover and verbalize regularity and rhythms in a given successions of objects, images, sounds and conversely to follow rules - proposed orally or in writing - for constructing these successions.
- To represent with elementary schemes (for examples with arrows) spatial-temporal sequences, relations of order, correspondences related to concrete situations.

Therefore It seems to be necessary to conduct an experimentation, which could induce to the comprehension (and at a later time to the representation and formalization) of the main element of propositional logic, drawing directly on the context of everyday life or on situations which children knows well.

As we thought to structured the project: the first step is corporeal involvement. This provide that the teacher has planned an exploratory exit, which can occur nearby the school building, or in the interior space of the school, as long as they are suitable for fixing various and different benchmark.

Teacher will guide pupils in a predefined path, making them to focus constantly on the action they are performing. For example, near the white little house all children have turned to the left, or near the big green bare tree everyone went straight.

The question is to establish the characteristics of the objects that one met and remember the activities carried out in connection with them.

The second step takes place in the classroom: during a collective debate, pupils will establish again the points of reference, on which the teacher made them to focus on, in order to reconstruct the path done. Teachers will stimulate the debate with questions on the characteristics of the references chosen by them and on the features which do not belong to them.

Moreover it is possible to go further, choosing the representation of references as drawings to reproduce.

A proposition is an assertion which expresses the value of the truth, in other words if an assertion it's true or false. For example:

- "Five is an odd number";
- "Rome is the capital of France".

They are two propositions (one true the other false).

Conversely, the assertion "I would like to pass the exam without studying" is not a proposition (it expresses a desire, is not something true or false).

Propositions may be combined to construct propositions more complex using connectives as "and", "or", "not", "if... then", etc.

In the phase of description of some given references, children are encouraged to describe the objects they observed with all affirmative sentences; later, the description will be conducted using all negative sentences. The first reflection on which we can linger is that the above mentioned little house is white but at the same time it isn't red, yellow, green... In this manner they start to understand the meaning of "proposition" and what means that proposition is true or false.

If it is true that "the little house where we have turned to the right is white", then all the other sentences will be false as "the little house where we have turned to the right is red" or "the little house where we have turned to the right is yellow".

The graphic representation of the identified objects can allow a facilitation and a schematization of all these information. Near the draw will be inserted all true sentences which describe it but false sentences will be excluded.

Another type of questions will stimulate the children perception of their body in a tridimensional context.

For example: have we met the little white house on our right or our left?

Near the little white house, have we turned to the right or to the left? Is the little house located before or after the tree?

These considerations are all connected with the movement that children have performed and they can still be organized in true or false propositions.

Indeed human body has a rich symbolic structure and a special aptitude to the training/ exercise (Gomez Paloma, 2013). The physical body which experiments, it becomes a symbolic body and therefore a "logic mathematical body". Movements become gestures, signs, symbols, codes alternating the symbolic-representative functions of reality.

In this perspective, learning logic through the body is pivotal for the development of a creative life style and for a productive thinking which is emerging and divergent.

So children can easily learn logic if it is presented in a playful form: in this way they wonder about the "why" and the "reasons" of the different experiences done and they discover and learn having fun in the same time (Pesci, 1991).

It is possible to create schemes as the followings:

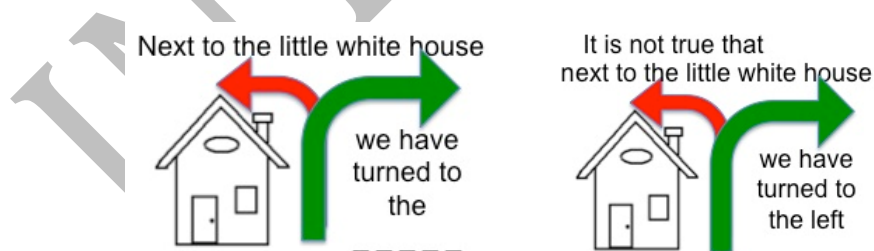


Fig. 1. Pictures for "true" and "false".

The concept of propositional logic that we want to reach is the negation of a proposition.

If it is true that the little house was white, so it is not true that the little house was red.

If it is true that we have turned to the right near the little house, so it is not true that we have turned to the left near the little house. What is not true is defined with the term "False".

Also in this case, some drawings related to the corporeal action may help children to internalize the concept associated to the action.

Since the first years of life, children create systems of logical operations based on the objects (not yet on the proposition in itself) organizing groups, classes, sets and relations through the handling.

This first group of operation does not concern completely the logic of classes or the logic of relations, establishing only some elementary structures of the groups.

We have realized that some operations, as for example the classifications, are relatively independent from the verbal language since they are defined starting from motor experiences and before of being operations of thought they are operations in the strict sense.

Therefore operations are coordination of actions, handlings of objects: then, language will be able to extend their expansions giving more mobility and universality to the conceptual articulation.

So the basis is the sensorimotor intelligence in which we have elementary and practical coordination.

Transitivity at the level of actions constitutes functionally what will be, at representative level, a serial relationships' transitivity of topological grouping and inclusion of classes. A conjunction is a compound sentence formed by joining two statements with the word "and". A conjunction is true only when both parts are true.

We start from the premise that Logic is not innate but it becomes necessary at a certain level and therefore it should be learned.

It mainly appears to the infant in the form of operating structure (acting on himself, on stuffs, on and with the others); the foundation of operative structures and the gradual advancement of the concept of reversibility, allow the processing of constants (preservation concept).

When a child is almost five years old he is able to create Logic and concrete operative structures (for example the conservation of quantities). (Piaget 1974)

Operations are not yet based on propositions or verbal definition but on the same objects grouped and classified in correspondence.

However, this concrete operation, though starting from the action, they already form reversible structures of thought (before applicable to the quantity of matter and then to the weight and volume). When a child is almost nine he will be able to base the logic of proportions on verbal definitions (hypothesis) and no more just on the objects: child will be able to find systematic methods of grouping objects according to all possible combinations and it will be created a structure of four transformation (Klein's group). So if the action intervenes structuring logical operations, it is also necessary to recognize the function of the social factor in the foundation of this structure.

The individual handling it will be gradually structured in different specific codes.

If this correspond to the truth, we can reputedly think about going beyond, coming to a more complex concept which usually is not faced by primary classes, namely "that of Implication". Conditional logic is the kind of deductive logic in which a key role is played by conditional statements, that is statements of the "if-then" form. For example, "If we meet the green tree, then will go back".

A conditional statement is a statement with a hypothesis and a conclusion. When a conditional statement is written in if-then form, the hypothesis is the "if" part and the conclusion is the "then" part ( $A \rightarrow B$ ). The converse of a conditional statement is found by switching the hypothesis and the conclusion ( $B \rightarrow A$ ). The inverse of a conditional statement is found by negating both the hypothesis and the conclusion of the statement ( $\neg A \rightarrow \neg B$ ). The contrapositive of a conditional statement is found by negating both the hypothesis and conclusion of the converse ( $\neg B \rightarrow \neg A$ ). If the original statement is true, the contrapositive is also true. If the original statement is false, the contrapositive is also false. This means that a conditional statement and the contrapositive are logically equivalent.

In the same way, the converse of a statement and the inverse of a statement are logically equivalent.

If to the original conditional ("If we met the green tree, then we go back") we added instead the assertion that we do not go back, then it would follow that we have not met the big green tree. This sort of move we have called contraposition. If to the original conditional we added instead the assertion that "we go back", it would not necessarily follow that "we have met the green tree". To think otherwise is to commit the fallacy of conversion. If to the original conditional we added instead the assertion that the "we do not have met the green tree", then it would not necessarily follow that the "we do not go back". To think otherwise is to commit what we call the fallacy of inversion.

Due to the consecutive actions, it is possible to plan, before the walking, what children should do when they will met certain determined references.

For example with a map teachers can decide that when pupils met the green tree, they have to go back. Moreover they can establish that as soon as children met the white house they will turn on the right. In other words teachers give a series of instructions which are the consequence of what is possible to encounter during the explorative walking.

So now they can give the meaning of "implication", of "necessary condition" etc.

Returning in class, they reconstruct the experience discussing all together; furthermore it is also possible to place the "actions", represented by drawings or by sentences written on papers and cards in sequence. For example if the path presupposed that they had to go back when they met the green tree, then children would place the corresponding papers and cards in order to reconstruct the action done.



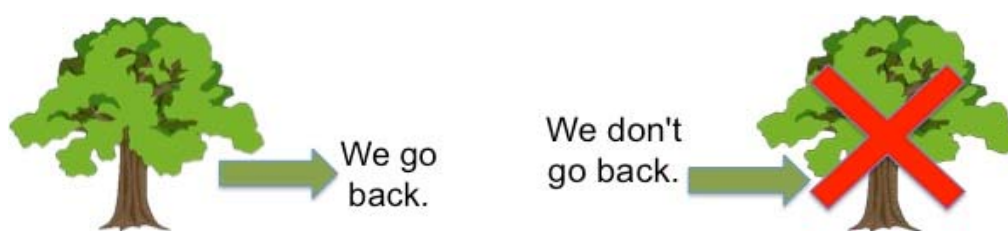


Fig. 2. Pictures for the conditional statement.

## Conclusions

Every educational-didactic process takes a double meaning: on the one hand, the subject proceeds to the rationalization of his own physical and mental development (through the discovery, knowledge, awareness and organization of his existential reality) and on the other hand, he proceeds to the acceptance of ethical-social rules and to the expressive- communicative dynamics (Pastena, 2012).

Contemporary pedagogy rejects the idea of a fragmentary and fractioned education in different branches of knowledge,

Conversely it proposes a way to learn in constant interrelation through the unification of specific goals in one unique goal which turns out to be the complete growth and education of the person as a man and as a citizen.

In this sense, the current innovative discovery of the body, corporeality and physicality has undoubtedly thrown into crisis a vision of learning too focused on the philosophic criteria of Plato, Descartes, Leibniz and Hegel who focusing on the soul, on the thought, on the interiority and on the intellect had repeatedly stifled or reduced the corporeal dimension .

Human body has a rich symbolic structure and an extraordinary attitude towards education. So it proves that the body is not only mere matter: symbolism and culture are not material qualities and they do not belong to the material extension in itself. The physical body, in this sense, becomes also a symbolic body and, as consequence, a logical-mathematical body. Movements become actions, signs, symbols, codes, integrating with all the other human languages.

In this context, Learning logic acquired for the subject who studies a connotation of crucial importance for the personal education of a creative lifestyle and for an innovative divergent thinking.

It is on the basis of these considerations that we have undertaken this study proposing, on corroboration of what it is said before, to conduct soon an experiment on a large number of children in primary schools and to publish the results.

It is necessary to consider the reason of the increasingly obvious pupils' difficulties, which are both linguistic and logical:

- at the beginning of the educational cycle, children's language is characterized by an extreme poverty of words, which have generally broader and generic meanings;
- often children don't know the meaning of many words they use;
- language is not completely structured at all levels (lexical, syntactic and textual), communication is "noisy", its production is vague and ambiguous, so comprehension results very difficult .

Furthermore, at the beginning of secondary school, students highlights difficulties in the understanding of certain concepts and of logical languages using concept acquired in a strict way.

One of the reasons lies on the lack of "construction" of logical concepts, which are presumably treated superficially, in a sporadic way and poorly structured in primary school.

The didactic offer proposed by textbooks does not provide an organic learning process but it just participate in an improvised manner, being therefore not very effective.

The aim of the studies, here proposed, is to develop, since the first years of primary school, communication skills and logical languages which are abstract by nature and difficult to understand unless presented gradually, with references to concrete and very simple contexts.

Abstract and logical concepts should be introduced gradually through activities that consider the reality in which children live and their wealth of experience, allowing to present the first elements of language without ambiguity

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# 3-dimensional analysis of asynchronous motor with finite element method

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## Abstract

In this article, it will be focused on 3-dimensional analysis of an asynchronous motor with finite element method. Analysis of finite element of an asynchronous motor was performed with the help of a program developed by Maxwell 3D software program. Analysis of an asynchronous motor was conducted by calculating magnetic flux density B, current densities and as a result moment value.

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**Keywords:** Induction Motor; Finite element Method; Maxwell 3D

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## Introduction

The two-dimensional and analytical solutions not provide enough solutions. Particularly in different type of geometry or nonlinear models cases, at magnetic saturation, end-coil designs, effective fringing field simulators three-dimensional solution gives more accurate forecasts (Chari, and Silvester, 1970). So Maxwell and similar 3 dimensional programs are more suitable for magnetic analysis (Zienkiewicz, Lyness and Owen, 1977). Analysis of finite element of an asynchronous motor was performed with the help of a program developed by Maxwell 3D software program. Analysis of an asynchronous motor was conducted by calculating magnetic flux density B, current densities and as a result moment value.

## Asynchronous Motor

Aspects of being robust, requiring little maintenance, the low cost, not being affected by environmental conditions and their power per unit volume Asynchronous motors are superior to other motors and can be used in almost every field. Motor analyzed have 18 stator and 22 rotor risers as shown in Fig 1. The air gap between stator and rotor is 0.5mm. Air gap=0.5mm

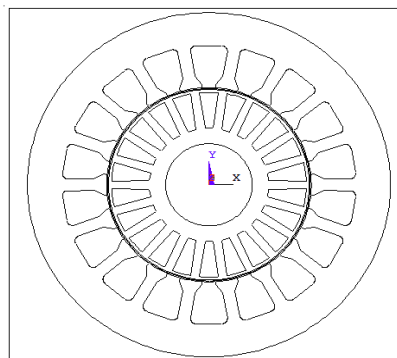


Fig.1. Front view of the motor

## Winding chart of stator

Investigated three-phase asynchronous motor wound as half-mold and winding chart shown in Fig. 2. Motor star was connected. Enamelled copper conductors have diameter 2\*0.55mm and wound as 47 windings.

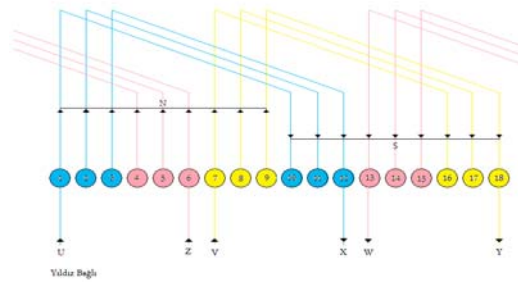


Fig. 2. Winding chart of stator

Diameter of wire: 2\*0.55mm

Number of windings: 47 windings

#### Identification of materials used in the motor

In the analysis of motor 5 materials were used. which is Air, Silicon plate (stator and rotor), Copper stator winding, Aluminum rotor winding, Rotor shaft.

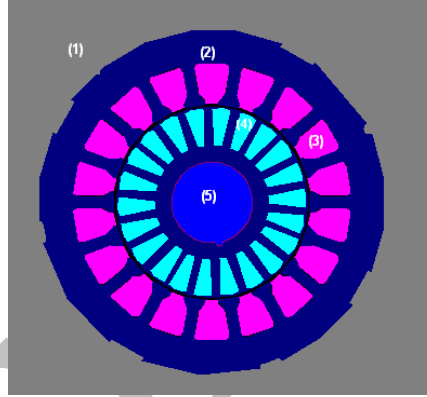


Fig.3. The geometry of the motor according to material types

#### Finite Element Method

In finite element method initially solution area is divided small triangle elements. In numerical calculation it is essential and expresses approximate solution (Silvester, Cabaya and Browne,1973). The two-dimensional analysis of elements divided into triangle based on areas and the three-dimensional analysis based on volumes. So to be uncomplicated to calculate area and volume, it is essential to divide elements which are not disrupting the boundaries of the solution. Triangle and tetrahedron areas are most preferred for providing curved boundaries. To increase the accuracy of the solution it is important that division of solution area of elements to be as small as possible and areas where potential changes in vector is more to be divided smaller elements.

#### The Theory of Finite Element Method

$$\frac{\partial^2 \phi}{\partial x^2} + \frac{\partial^2 \phi}{\partial y^2} = 0 \quad (1)$$

$$\frac{\partial^2 \phi}{\partial x^2} + \frac{\partial^2 \phi}{\partial y^2} = f(x, y) \quad (2)$$

The finite element method is a type of Laplace Eq. (1) and Poisson Eq. (2) used in solution of partial differential equations.

#### *The Finite Elements and Rayleigh-Ritz Method*

The finite element method is based on searching solution in small finite elements where it is impossible to find a potential function for all solution area because of complicated boundary conditions. For solution, all solution area is divided into same geometrical elements with the condition that shape of geometrical elements remains same (Williamson and Ralph, 1982). In this study triangle elements are used.

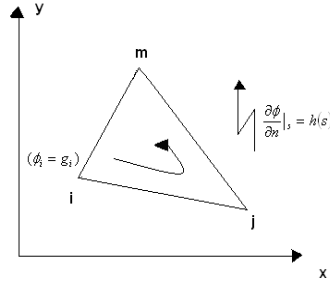


Fig.4. A triangle element

Initially a trial function is selected for solution in this method. This refers to the change in function area. First-order polynomial part of the trial function Eq. (3) provides the sensitivity for most problems:

$$\phi(x, y) = \alpha_0 + \alpha_1 x + \alpha_2 y \quad (3)$$

In this trial function,  $\phi$  changes linearly according to  $x$  and  $y$ . If potential at edge of triangle is  $\phi_i, \phi_j, \phi_m$ , the trial function should provide these values at edge points. So the expressions below can be written:

$$\phi_i = \alpha_0 + \alpha_1 x_i + \alpha_2 y_i \quad \phi_j = \alpha_0 + \alpha_1 x_j + \alpha_2 y_j \quad \phi_m = \alpha_0 + \alpha_1 x_m + \alpha_2 y_m \quad (4)$$

$N_i, N_j, N_m$  figure or interpolation functions are used to define the discussed trial function's edge values ( $\phi_i, \phi_j, \phi_m$ ) as shown in Fig. 4.

#### *Combination of elements*

*Potential function of solution must be continuous in the entire region and boundaries between the elements. Potential varies linearly within and on the sides of element of a triangle.*

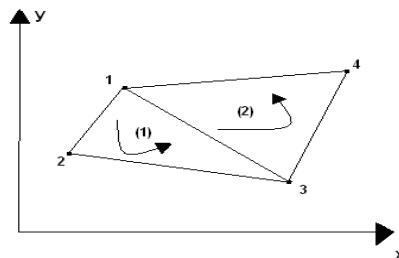


Fig.5. The combination of two triangle elements

Current may be present in some nodes due nature of the problem. In this case, the following equation system is arranged to (Chari and Silvester, 1970).

### Three Dimensional Analysis of Asynchronous Motor

Maxwell 3D field simulator, accurate, efficient, fast and flexible program used for the solution. Maxwell 3D finite element package software is powerful tools for research, design and analysis. The two-dimensional analytical solutions not provide sufficient accuracy. Particularly in different type of geometry or nonlinear models cases, at magnetic saturation, end-coil designs, effective fringing field simulators three-dimensional solution gives more accurate forecasts (Selçuk, 2003). So Maxwell and similar 3 dimensional programs are more suitable for magnetic analysis. Especially results on the three-dimensional visual analysis of geometry of the model provide more accurate and effective comments about the system (Zienkiewicz, Lyness and Owen, 1977). For this reason, using Maxwell 3D program is important for the magnetic system designer.

#### *Partition of asynchronous motor and data production*

To avoid the problem of memory, a study in order to get fast results and ease of operation at least two coil motors, a maximum of six coils, are discussed. Despite the fact that the program works for several days it does not respond when the other windings placed. Accordingly, the necessary analysis and calculations were made. According to the finite element method, Fig. 1 illustrates an asynchronous motor after partitioned by hand, each node in the x, y, and z coordinates and node numbers that make up tetrahedron, with manual operation of partition, error control is made. If the node numbers that make up a tetrahedron, if one or more of x, y, and z coordinates incorrectly entered, it is very easy to see in this section and correct.

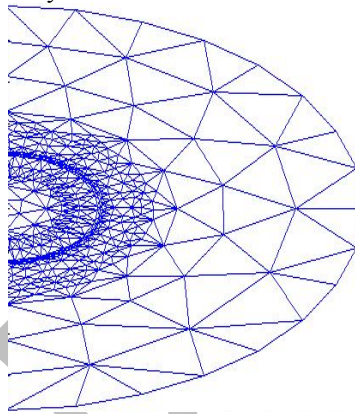


Fig.6. Manually partition of motor with Matlab.

Values of motor partitioned manually;

Number of nodes = 822    Number of elements of tetrahedron=2325    Number of border nodes=34

Appearance of solution area was drawn by writing Matlab program code. Meanwhile to read data of solution area (x,y,z coordinates of nodes and node numbers form tetrahedron) from file it must be saved as a file in C:\MATLAB7.0.1 work.

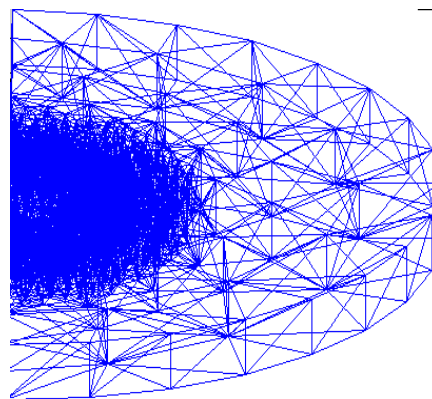


Fig.7. 3D partition of motor by Matlap

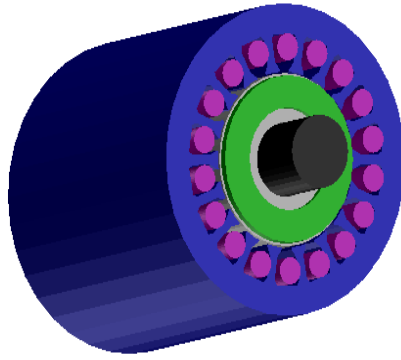


Fig.8. Appearance of asynchronous motor with Maxwell 3D

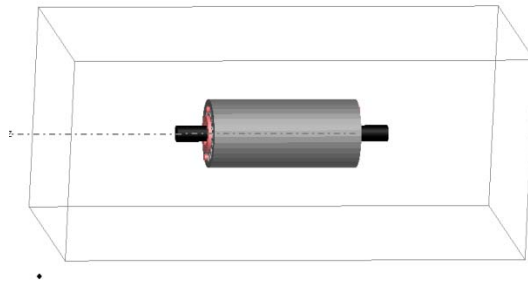


Fig.9. 3D appearance of asynchronous motor in boundary conditions

To increase the accuracy of the solution in finite element method, the number of tetrahedron reproduced in regions where the change in the potential value of vector is more. (Copper and iron etc...) The division of certain solution area to tetrahedron elements made manually or direct computer program or both.

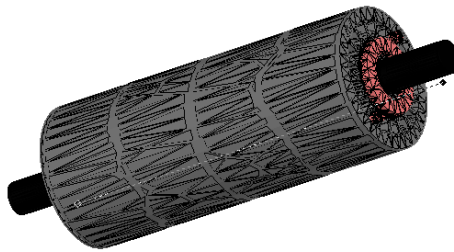


Fig.10. Automatic partition of motor

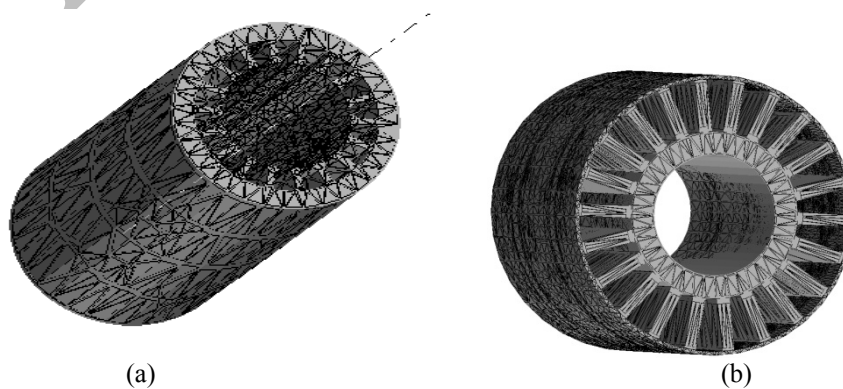


Fig.11. Automatic partition of motor (a) stator and (b) rotor

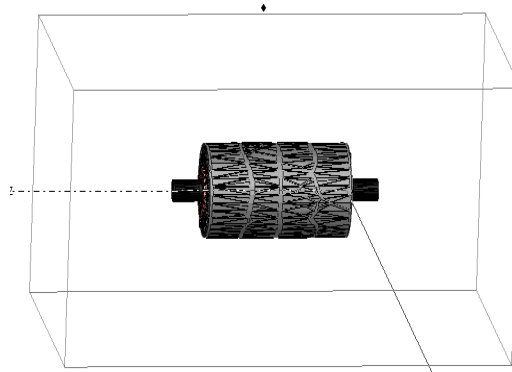


Fig.12. Automatic partitioned motor in boundary conditions

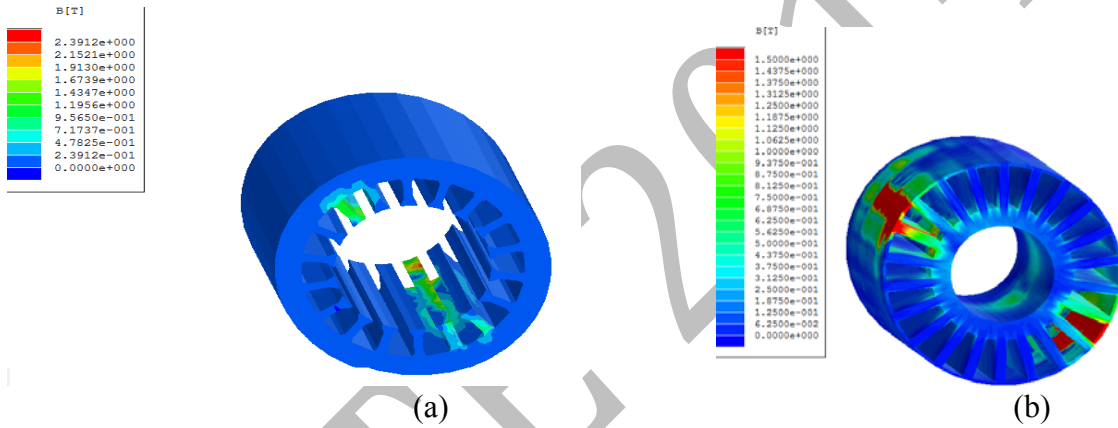


Fig. 13. The flux density of one windings of stator (a) and rotor (b) of asynchronous motor ( $B(T)$ )

## Results

As a result of this analysis, asynchronous motor was drawn a partitioned into small tetrahedrons. The partitioned stator, rotor and coils of asynchronous motor were shown separately. In this study, the calculated moment value multiplied by 9 because 1/9 of motor is handled due symmetry ( $9 \times 0.834$ ). In this case, the moment was 7.5 Nm. About 0.02% of error derived from negligence in the finite element method, experimental errors in measuring device used in this study and etc. It was seen that moment increase when shift value increase. So that the analysis of motor was conducted. In conclusion, as can be understood from result using finite element method would be beneficial while designing asynchronous motor. In next studies it is aimed that finite element method will be used for comparing three-dimensional analysis of asynchronous motors by the help of Matlab software.

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INTE 2014

# Toplumsal yaşamda farklı grupların bakışlarını etkileyen bilgi kaynakları<sup>4</sup>

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## Ozet

İnsanoğlunun dünyaya gelişiyle birlikte öğrenme süreci başlamaktadır. Sosyal-psikologlar bunu bebeğin anneye kurduğu ilişkiden başlatırlar. Fakat bu süreçte insan pasif değildir. *Asli sosyalizasyon*, bireyin çocukluk döneminde başından geçen ve onu toplumun bir üyesi haline getiren ilk sosyalizasyondur. Sürekli hareket eden bir organizma olarak *asli sosyalizasyonun* temelinde *ben* vardır. Dolayısıyla bu süreç, dış dünyayla kurulan ilk farkındalık döneminin başlangıcıdır. Asli sosyalizasyonun başlangıç noktası içselleştirmedir. *Tali sosyalizasyon* ise, zaten sosyalleşmiş olan bireyi kendi toplumunun nesnel dünyasındaki yeni kısımlara sokan herhangi bir sonraki süreçtir. Bu tebliğde bireyin sosyalleşme süreçlerinde kazandığı bakış açısının bilgi kaynakları ele alınacaktır. Birlikte yaşam farklı olanla kurulan ilişkide anlamlıdır. Bu kurulan ilişkinin rengini ise, insanın sosyalleşme sürecinde dünya görüşüne en fazla etki eden kurum ve farklı gruplara ilişkin edinilen bilgi kaynağı belirlemektedir.

**Anahtar Kelimeler:** Bilgi Kaynağı, Birlikte Yaşama, Okul, Camii, Cemevi.

## The sources of knowledge affecting the views of different groups in a social life

### Abstract

Learning process started once human being appeared on the earth. According to the socio-psychologists this process begin with the relation of the mather and baby. But in this process man is not passive. Primary socialazistion is the experience of man that makes him member of social in his childhood. Essential socialization which is as a organism has motion permanently based on ego. Therefore, this process is the begining of awareness period that is the first relation to the outer world. Starting point of essential socilization is internalization. Secondary socialization is one of the next process which socialized individual lead to the his own objektiv world. This paper consist of source of knowledge which is the point of view during the socialization process. Living together is meaningful when one was relation to the different one. The colour of this relatin shows as; the process of one's socialization is affected mostl by relation to different groups.

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**Key Words:** Information Resource, Living Together, School, Mosque, Cemevi.

## Giriş

İnsan, ontolojik olarak bir grup-varlıktır; dolayısıyla “ben kimim?” sorusuna verilen cevabın oluşturduğu “bireysel kimlik”, her zaman öyle ya da böyle, “biz kimiz” sorusuna verilen cevabı da, yani mensubiyet ve aidiyet unsurlarını da içermek durumundadır (Göka, 2005: 7-18). Bireyin ben kimimden biz kimiz sorusuna ulaşan süreçte sosyalleşme/sosyalizasyon kavramı bir-toplum ilişkisinde üzerinde analizleri gerektirmektedir. Sosyalizasyon en basit ifadesiyle *topluma hazırlanma ve katılma sürecidir*. Klasik bir tarifle sosyalleşme bireyin içinde yaşadığı toplumun kültürünü ve toplumdaki rolünü öğrenerek toplumla bütünleşmesi anlamına gelen sosyal süreçtir (Kızılcıkelik-Erjem, 1996: 483-484). Bireyin, ben kimim sorusuyla başlayan sürecine *asli sosyalizasyon*, yani dış dünyayla kurulan ilk farkındalık döneminin başlangıcı olarak tarif edilir. *Asli*

<sup>4</sup> Tebliğde kullanılan istatiki veriler, *Sosyal Bütünleşme: Farklılık ve Birlikte Yaşama (Göksun Örneği)* adlı doktora çalışmamızdan alınmıştır.

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*sosyalizasyon*, bireyin çocukluk döneminde başından geçen ve onu toplumun bir üyesi haline getiren ilk sosyalizasyondur. Kültürlenme başlığında *asli sosyalizasyon*, *kendi (self) bilincinin* (birey olarak kendini tanımlama, diğerlerine tepki verme ve kendine değer ve önem atfetme yetisi) oluşumuyla başlayan süreç olarak ifade edilmektedir (Haviland, 2002: 165-166). *Tali sosyalizasyon* ise, zaten sosyalleşmiş olan bireyi kendi toplumunun nesnel dünyasındaki yeni kısımlara sokan herhangi bir sonraki süreçtir. Asli sosyalleşme sürecinin başlangıç noktası ise, içselleştirme. Bir diğer kişiye ait olup tam da bu yüzden kişi için öznel bakımdan anlamlı hale gelen içselleştirme, öznel süreçlerin direkt olarak kavranması ve yorumlanması anlamına gelmektedir (Berger-Luckmann, 2008: 189-191).

Psikologlar bu öznel süreçleri, bireyin dış dünyayla kurduğu veya kurmak zorunda olduğu ilişkiler temelinde analiz etmişlerdir. Bu analizde ilk dikkati çeken ise, kişilik oluşum süreçlerinde dürtüye maruz kalan ve yalnızca pasif bir şekilde cevap veren değil sürekli hareket eden bir organizma olarak tanımladığı *ben'i* temele alan, *George Herbert Mead'dir*. Mead *ben* ile ilgili iki evre belirler. Birincisi, organizmanın başkalarının tavırlarına karşı örgütlenmemiş yanıtı ki bu hareket etmesi için kendiliğindenli dürtüsü olan *Birinci Ben (I)*'dir. İkincisi ise, diğerler çevrecek örgütlenmiş olan ve kişinin de kabullendiği bir dizi tavır alış olan *İkinci Ben (Me)*'dir (Mead, 1934: 175; Ruthn & Alison, 2002: 238). Mead'ın *ben* tanımlamasındaki ikili yapı, içsel ve dışsal süreci oluşturmaktadır. *Dışsal süreç*, çevrenin bireyden beklentileri ve talepleri, *içsel süreç* ise, bireyin bu taleplere karşı uygun davranış geliştirmesidir. Uygun davranışlar ödüllendirilken, uygun olmayan davranışlar sapma olarak karşılık bulur (Bauman, 1998: 36-37).

Bu diyalektikle birlikte insanlar, biyolojik bir organizma olmanın ötesinde aynı zamanda içinde yaşadığı toplumun bir ürünüdür. İnsanlar grup içinde doğarlar ve toplumsal niteliklerini gruplarda kazanırlar. Bu gruplar aracılığıyla toplumda geçerli olan bilgiler, değerler bireye aktarılır. Toplumsallaşma (sosyalleşme) bireyin toplumun kurallarını, değerlerini, tutum ve davranışlarını, uygulamalarını öğrenmesi, öğrendiklerine uygun davranmasını ve böylece toplum içinde bir kişilik, benlik kazanması sürecidir (İçli, 2008: 117).

Pozitivist sosyolojiye ve sosyal davranışın meydan gelişinde bireysel aktörler yerine sosyal güçlerin önceliğini ve etkinliğini savunan anlayışa bir tepki olarak doğan ve anlayıcı sosyolojinin bir devamında ibaret olan fenomenolojik bakış, insan davranışlarını anlamada öznelerin içerisinde bulunduğu fiziksel/sosyal çevreyi ve öznelerin o şartlarda niyetliliğini de hesaba katmayı ilke olarak kabul eden bir sosyolojik bakış açıdır. (Berger, 2000: 13; Çiftçi, 2002: 44). Bir diğer temellendirmeye söylenirse mikro sosyolojik bakışın konuları arasında yer alan simgesel etkileşimcilik ve etnometodoloji, insanın içerisinde bulunduğu toplumla dinamik ilişkini ifade eden yöntemlerdir. Çalışmada esas alınan toplum anlayışı, simgesel etkileşimciliğin sosyal ilişki temelli toplum anlayışıdır ki; simgesel etkileşimcilik *bir toplulukta insanların sahip oldukları ortak simgeler, anlayışlar takımudur*. Bu bir sosyal psikolojik bakış olup simgesel etkileşim, *bir beni olan* kişi ve bu hal de, bir insanın içsel düşünce ve duyguları ve toplumsal davranışları üzerindedir. Kişi, burada, toplumsal kurallar tarafında pasifleştirilmeyip kendi hareketini yorumlayan, anlamlandıran ve dönüştüren olarak kabul edilir (Blumer, 1969: 5).

*Simmel'e* göre toplum *sayısız ufak sentezler'den* oluşmaktadır. İnsanların birbirlerine bakmaları, birbirlerini kıskanmaları, aralarında mektuplaşmaları, birlikte yemek yemeleri, birbirlerinden hoşlanmaları ve hoşlanmamaları, adres sorma veya birbirleri için giyinip-süslenmeleri gibi, sayısız bilinçli-bilinçsiz, geçici-kalıcı, önemli-önemsiz hareketler, insanları birbirine bağlamaktadır ve bu da toplumun atomları arasındaki etkileşim olduğu anlamına gelmektedir (Frisby, 2001: 123; Jung, 2002: 77).

Gündelik hayat ilişkisi içerisinde asli ve tali sosyalleşme süreçleriyle birey toplumla diyalektik içerindedir. Bu çerçevede de etnometodolojinin gündelik hayat inşalı toplum anlayışı esas alınacaktır. *Etno*, bir üyenin, toplumu hakkında sahip olduğu, herhangi bir konuda sağduyuya dayalı bilgisini ifade etmektedir. *Etnometodoloji*, toplumsal gerçeklerden oluşan nesnel gerçeğin, *gündelik hayatın* bir aradaki (birleşik) etkinliklerinin devam etmekte olan oluşumdur (Ruth & Alison, 2012: 359). Daha genel bir tanımlamayla, *üyelerinin toplumsal dünyayı anlamlı kılma yöntemleri* (Marshall, 1999: 218; Çiftçi, 2004: 122; Kızılcık&Erjem, 1996: 182-183).

Gerek simgesel etkileşimciliğin sosyal ilişkili toplum anlayışı gerekse de etnometodolojinin gündelik hayat gerçeklik inşasında insan, yeryüzüne gelişle birlikte kendisini çevreleyen ve sürekli etkileyen bir dünya içerindedir. Bireyin dünya görüşünü etkileyen bilgi kaynakları ve farklı olana karşı bakış açısının dinamiklerine ilişkin yapılan bir akademik çalışma verileri, bu bakış açısına göre değerlendirilmektedir. *Din ve Sosyal Bütünleşme: Farklılık ve Birlikte Yaşama (Göksun Örneği)* adlı çalışmada 470 kişiye yöneltilen sorulardaki sosyal mesafe değişkenliğinin toplumsal dinamikleri verilmektedir. Yine birlikte yaşamada farklı gruplara karşı bakışın seyrini belirleyen önemli bilgi kaynakları vardır. Bunlar aynı zamanda birlikte yaşamının temel dinamiklerini oluşturan unsurlardır. *Cinsiyet, yaş, eğitim, gelir, meslek, çocukluğun geçtiği yer, şu anda ikamet edilen yer, araştırmaya katılanların birincil ve ikincil anlamda kendilerini tanımladıkları kimlik, dünya görüşüne en çok etki eden kurum ve farklı gruplara ilişkin düşüncelerini edindikleri kaynak durumuna* göre kritik edilecek olan değişkenlerden dünya görüşüne en fazla etki eden kurum ve farklı olana yönelik edindikleri bilgi kaynakları toplumsal ilişki ve eğitim açısından değerlendirilmede önem az eden hususların başında gelmektedir.

Kahramanmaraş/Göksun örneğinde *Türk, Kürt, Alevi, Çerkes, Kürt Alevi, Türk Alevi, Avar(Maarulav), Çeçen, Dindar ve Abdallar* gibi grupların birbirlerine yakınlık ve uzaklık dinamiklerini belirleyen bilgi kaynakları iki başlıkta incelenecektir: *Dünya Görüşüne En Çok Etki Eden Kurum*: Televizyon, siyasi partiler, camii, üniversiteler, gazeteler, cemevi, bağlı olduğum cemaat, üyesi olduğum dernek, okul ve diğerleri seçeneklerle hem birey ve toplum hayatındaki önemlilikleri hem de eğitim sosyal ilişkilerin dinamiğini vermesi açısından karşılaşılan sorunları tespitler sunmasından dolayı önemli görülen bir sorudur. Diğer ise, *Farklı Gruplara İlişkin Düşüncelerini Edindikleri Kaynak*: aile çevremden, imamlardan, din dersi öğretmenlerinden, siyasi liderlerden, kitaplardan, gazetelerden, gelenekten, alevi, dedelerinden, kişisel tecrübelerimden ve diğerleri gibi değişkenlerle sosyal-psikolojik boyutundan toplumsal dinamikleri belirleyen bilgi kaynağı analiz edilmektedir.

### Dünya görüşüne en çok etki kurum

İnsanların dünyalarını oluşturan birçok kurumlar söz konusudur. Kurumlar toplumdaki etkileşim halindeki bireylerin, bu etkileşimin kurallarını oluşturmada önemli bir bilgi kaynağıdır (İçli, 2008: 76). Bu bilgi kaynakları kişilik oluşumunda, bir başkasıyla kurulan ilişki de insanları besleyen ve ilişki düzeylerini-mesafesini ölçen değişkendir. Kentleşmeyle birlikte kurumsal bazdaki beslenen kaynak da değişmiş durumdadır. Özellikle bilgi edinme kaynağı olarak modern ve geleneksel kurumlar, bireyin farklı olana karşı olumlu ve olumsuz duygusunu besleyen, etkileyen kasıtlı kurumlardır.

**Tablo 1.** Araştırmaya katılanların dünya görüşüne en fazla etki eden kurum durumuna göre dağılımları

Dünya Görüşünüze En Fazla Etki Eden Kurum Hangisidir?	f	%
1 Televizyon	183	38,9
2 Siyasi Partiler	25	5,3
3 Camii	54	11,5
4 Üniversite	45	9,6
5 Gazeteler	21	4,5
6 Cemevi	25	5,3
7 Bağlı Olduğum Cemaat	10	2,1
8 Üyesi Olduğum Dernek	17	3,6
9 Okul	37	7,9
10 Diğer	53	11,3
11 Toplam	470	100,0

Tablo 1 incelendiğinde, dünya görüşlerine en çok etki eden kuruma sorusuna katılımcıların % 38,9'u *Televizyon*, % 11,5'i *Camii*, % 9,6'sı *Üniversite*, % 7,9'u *Okul*, % 5,3'ü *Siyasi Partiler*, aynı oranda *Cemevleri* cevabını vermişlerdir.

İlk dikkati çeken husus, katılımcıların, dünya görüşlerine en çok etki eden kurum olarak %38,9'la *“Televizyonu”* ilk sırada belirtmeleridir. Değişen dünyada bireylerin bilgi kaynağı olan kurumlar da faklılaşabilmektedir. Özellikle iletişim çağında kitabi kültür, televizyonla seyirlik kültüre dönüşmektedir. *Televizyonun* aile hayatında ortamsal ve seyirlik kullanılış, kişiler arasındaki ilişkiyi yine kendi teknolojik formatıyla belirlemektedir. Her şeyin görselliğe ve hikayeleştirilmeye dönüştürerek anlatılması, zihinsel tembelliğin imdadına, kurumsal bazda bilgi kaynağı olarak yetişmektedir (Postman, 2000: 164-165; Hall, 2005: 73-121). Geleneksel kurumlardan cami ve kentleşmeyle birlikte daha da görünür olan cemevinin dünya görüşüne etkisinin az olması yine dikkatleri çeken hususlardandır. Çalışmada katılımcılara bu sorular, her bir grup için ayrı ayrı yöneltilmiştir. Karşılaştırma yapabilinmesi açısından bu soruyu *Türklerle, Kürtlere, Alevilere ve Sünnilere* karşı sıralamasını vermek daha metodik olacaktır.

Katılımcıların *dünya görüşlerine en fazla etki eden kurum* değişkenine göre *Türklerle* karşı sosyal mesafe puan sıralaması: *Siyasi partiler, Camii, Televizyon, Okul, Cemevi, Üniversite, Gazete, Diğer, Bağlı olduğum cemaat ve üyesi olduğum dernek* şeklinde sonuçlanmıştır.

Katılımcıların *dünya görüşlerine en fazla etki eden kurum* değişkenine göre *Kürtlerle* karşı sosyal mesafe puan sıralaması: *Cemevi, Bağlı olduğum cemaat, Üniversite, Gazeteler, Okul, Diğer, Siyasi partiler, Camii, Televizyon ve üyesi olduğum dernek* şeklinde sonuçlanmıştır.

Katılımcıların *dünya görüşlerine en fazla etki eden kurum* değişkenine göre Alevilere karşı Sosyal mesafe puan sıralaması: *Cemevi, Üniversite, Gazeteler, Okul, Bağlı olduğum cemaat, Diğer, Siyasi partiler, Camii, Televizyon ve üyesi olduğum dernek* şeklinde sonuçlanmıştır.

Katılımcıların *dünya görüşlerine en fazla etki eden kurum* değişkenine göre Sünnilere karşı Sosyal mesafe puan sıralaması: *Bağlı olduğum cemaat, Siyasi partiler, diğer, Camii, Cemevi, Okul, Üniversite, Gazeteler, Televizyon ve üyesi olduğum dernek* şeklinde sonuçlanmıştır.

Her bir grup için ilk üç sıra asli ve tali sosyalizasyon süreçleri için oldukça önemli sonuçlar vermektedir. İnsanın içinde bulunduğu dünya ve gündelik gerçeklik üzerine inşa edilen süreç, her şeyden önce retorik düzlemde gözükmemektedir. Nitekim Alevilere yönelik sorularda ilk sırayı cemevinin alması, yine Sünnilere karşı ilk sırayı *bağlı olunan cemaat*'in alması ve Türklere karşı ilk sırayı *siyasi partilerin* alması, grupların varlıksal temellendirilişi açısından önemli verilerdir.

### Farklı gruplara ilişkin düşüncelerini edindikleri kaynak

Bu sorunun alternatif cevap şıkları ise şu şekildedir: Aile Çevremden, İmamlardan, Din Dersi Öğretmenlerinden, Siyasi Liderlerden, Kitaplardan, Gazetelerden, Gelenekten, Alevi, Dedelerinden, Kişisel Tecrübelerimden ve Diğerleri.

Farklı gruplara ilişkin bilgi edinme kaynaklarını ölçmek için katılımcılara yöneltilen soruyla ölçülmek istenen nokta, sosyal gerçekliğin inşasında insanı etkileyen unsurları tespit etmektir. Dinamik toplum ilişkisi boyutuyla sübjektifliğin-nesnellığe, nesnellüğünde sübjektifliğe dönüşmesiyle farklı olana karşı sosyal mesafe düzeyinin, bilgi kaynağı çerçevesinde incelenmesi önemlidir. Çünkü kişiliğin oluşmasında, kalıtsal yapıların yanında, daha birçok etkenler de söz konusu olmaktadır. Asli ve tali sosyalleşme çerçevesinde insanların kazandığı tutumlar, hem çevreden gelen telkinlerle hem de kişisel tecrübeyle şekillenmektedir.

**Tablo 2.** Araştırmaya katılanların farklı gruplara ilişkin düşüncelerini en çok edindikleri kaynak kurum durumuna göre dağılımları

Farklı Gruplara İlişkin Düşüncelerinizi En Çok Hangi Kaynaktan Edindiniz?		F	%
1	Aile Çevremden	180	38,3
2	İmamlardan	20	4,3
3	Din Dersi Öğretmenlerinden	8	1,7
4	Siyasi Liderlerden	13	2,8
5	Kitaplardan	71	15,1
6	Gazetelerden	15	3,2
7	Gelenekten	47	10,0
8	Alevi Dedelerinden	16	3,4
9	Kişisel Tecrübelerimden	82	17,4
10	Diğer	18	3,8
11	Toplam	470	100,0

Tablo 2'ye göre katılımcıların farklı gruplara ilişkin düşüncelerini en çok % 38,3'le aile çevrelerinden almışlardır. Bunu % 17,4'le kişisel tecrübeleri takip etmiştir. Üçüncü sırada ise % 15,1'le kitaplar yer almıştır. % 10,0 oranında gelenek ise dördüncü sırada yer almaktadır.

Burada ailenin farklı gruplara karşı bakışı belirlemede ve hayata dair ilk bilgilerin ailede alındığı gerçeği, unutulmamalıdır. Çocukların davranışında ebeveynler tarafında oluşturulmuş rezervuarlar (hazneler) vardır. Ebeveynler ve diğer etkili kişiler tarafından önceden belirlenip onaylanmış olan bu hazneler, çocukla grubun psikolojik süreçleri arasındaki karşılıklı etkilenmeleri biçimlendirmektedir (Çevik, 2010: 51-72).

Farklı gruplara karşı bilgi edinme kaynaklarının sıralamasında, katılımcıların tümüne göre kişisel tecrübenin ikinci sırada ölçülmesi, birlikte yaşamada dış gruplara karşı bakış açısı oluşturmada, ilişki kurmanın önemini belirtmesinden dolayı dikkat çeken bir ölçümdür. Çünkü kişisel tecrübe sayesinde kişiler farklılarla (anlamalı ötekilerle) yüz-yüze olmaktadır. Bu da insan ilişkileri esnekletirmekte ve bu etkileşimde kalıplar dayatmanın mümkün olmamaktadır (Berger & Luckmann, 2008: 45).

Katılımcıların farklı gruplara karşı bilgilerini edindikleri kaynak değişkenine göre Türklere karşı sosyal mesafe puan sıralaması: İmamlar, Din Dersi Öğretmeni, Gazetelerden, Kitaplardan, Aile Çevremden, Siyasi Liderlerden, Alevi Dedelerinden, Kişisel Tecrübemden ve Gelenekten şeklinde sonuçlanmıştır.

Katılımcıların farklı gruplara karşı bilgilerini edindikleri kaynak değişkenine göre Kürtlere karşı sosyal mesafe puan sıralaması: Alevi Dedelerinden, Siyasi Liderlerden, Diğerleri, Kitaplardan, Gelenekten, İmamlar, Aile Çevremden, Gazetelerden, Kişisel Tecrübemden ve Din Dersi Öğretmeni şeklinde sonuçlanmıştır.

Katılımcıların farklı gruplara karşı bilgilerini edindikleri kaynak değişkenine göre Alevilere karşı sosyal mesafe puan sıralaması: Alevi Dedelerinden, Siyasi Liderlerden, Kitaplardan, Gazetelerden, Gelenekten, İmamlar, Aile Çevremden, Kişisel Tecrübemden ve Din Dersi Öğretmeni şeklinde sonuçlanmıştır.

Katılımcıların farklı gruplara karşı bilgilerini edindikleri kaynağına değişkenine göre Sünnilere karşı sosyal mesafe puan sıralaması: İmamlar, Siyasi Liderlerden, Kitaplardan, Alevi Dedelerinden, Kişisel Tecrübemden, Gazetelerden, Gelenekten, Din Dersi Öğretmeni ve Aile Çevremden şeklinde sonuçlanmıştır.

Hem farklı gruplara ilişkin edinilen bilgi kaynağındaki cevapların gruplardan bağımsız sıralaması hem de her bir grup özelinde sıralamalar birey çevre ilişki açısından öneli sonuçlara işaret etmektedir. Bu aynı zamanda bireyin gruplaşma süreçlerini göstermektedir. İnsanların farklıya ilişkin bilgi kaynaklarında İmamlar, Alevi dedeleri, din dersi öğretmenleri gibi değişkenleri işaretlemesi, sorunların kaynağına ve çözümüne yönelik sonuçlar anlamına gelmektedir.

## Sonuç

İnsanın, "ben kimim?" sorusuyla başlayan süreçte ilk önce annesiyle daha sonra en yakındaki çevresiyle ve en nihayetinde geniş toplumsal dünyasıyla açılanan dinamik bir ilişki ağı vardır. Bu dinamik yapı içerisinde bireyin dünya görüşünü etkileyen birçok değişkenler söz konusudur. Hayata bakış açımızı belirleyen geleneksel ve modern kurumlar, yine farklıya ilişkin bilgi kaynağını şekillendiren sayısız bilgi kaynaklarıdır. Bunlardan kurumsal etkiler, kasıtlı ve bilinçlidirler. Cami, okul, cemevi ve yöneltilen sorudaki diğer şıklar belli bir felsefesi ve disiplini olan, kasıtlı kurumlardır. Aile, çevre, gelenek ve sorudaki diğer bilgi kaynakları ise, bireyin farkında olmadan etkilendiği ve kurumsallıkların da temelini oluşturmaktadır. İnsan bu bilgi kaynakları ve kurumları sayesinde ilk önce kendini tanımakta/tanımlamakta daha sonra ise, ait olduğu dünyayı tanımakta/tanımlamaktadır. Bu noktada tespitleri yaparken bu ilişki sürecinin dinamikliğini unutmamak gerekir. Diğer türlü insan, kendisine verilen rolü yerine getirmekten başka bir işlevi olmayan robota dönüşür ki, bu hem gündelik hayat gerçekliğinin nesnel tanımlamalarına hem de sayısız ilişkiler ağıyla dönüşen/dönüştüren sosyallığe tezatlık oluşturur. Nitekim farklıya karşı edinilen bilgi kaynağı değişkeninde *aile çevresi ve kişisel tecrübe*'nin art arda sıralanması anlamlı bir veridir.

*Dünya görüşüne en fazla etki eden kurum* sorusuna katılımcıların % 38,9'u *Televizyon*, % 11,5'i *Camii*, % 9,6'sı *Üniversite*, % 7,9'u *Okul*, % 5,3'ü *Siyasi Partiler*, aynı oranda *Cemevleri* cevabını vermişlerdir.

*Farklı gruplara ilişkin düşüncelerini en çok hangi bilgi kaynağında aldınız* sorusuna katılımcıların % 38,3', *aile çevrelerinden*, % 17,4'i *kişisel tecrübeleri*, % 15,1'i *kitaplar* ve % 10,0'u *gelenek* cevabını vermişlerdir. Bu veriler, birlikte yaşamaya ilişkin bilgi kaynaklarının analizinin yanında eğitime ilişkin bireyin dünyasının da önemliliklerini göstermektedir. Yine bu veriler, hem okul veya eğitim politikaların hem de toplumsal yapının ve dinamiğin yönünü belirten sonuçlardır.

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# Toplumun Bilim Kültürü: Bir Sistem Teorik Yaklaşım

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## Abstract

Discussions and intense debates about the perception that science is in crisis are still existing in modern societies. Nowadays, as a result of evolutionary achievements, scientific knowledge gains a great importance. Different concepts such as the concept of knowledge or the concept of information society have been placed in the modern literature and were also discussed from different aspects. By observing comparatively, all related subjects can be involved in the concept of culture and this concept can be formed with the assistance of communication. In semantics, the whole social facts have been shaped by observing the society or through science and communication. Knowledge and education have a mutual function to reveal culture. In this sense, it is supposed to place the scientific culture in the sub-systems of the society, so that the society is able to improve. If the scientific culture is not placed in a society, this society will not gain the nature of a modern society. Therefore, this paper aims to analyze with a systems theoretical point of view, how the scientific culture can function in a society.

**Keywords:** Science, Culture, Society, Systems Theory, Niklas Luhmann

## Özet

Modern toplumlarda bilimin krizde olduğuna dair söylemler, araştırma ve tartışma konusu olduğu gibi, olmaya da devam etmektedir. Günümüzde evrimsel kazanımlar sonucu ortaya çıkan bilimsel bilginin gittikçe önem kazandığı da ortadadır. Bilgi veya bilim toplumu gibi kavramlar, modern literatüre yerleştirilmiş ve çeşitli yönleriyle tartışılmıştır. Eğer karşılaştırmalı olarak gözlemlenirse; bütün konular kültür kavramı içerisine dahil edilebilir ve bu kavram iletişim yardımıyla yapılandırılır. Semantik olarak bütün sosyal olaylar, toplumun gözlemlenmesi veya toplumun kendini gözlemlemesi bilim üzerinden, iletişim olarak da şekil almıştır. Bilgi ve eğitim, kültürü ortaya çıkartmak için önemli işlev üstlenmektedir. Toplumun ilerlemesi için bilim kültürünü toplumun tüm alt sistemlerine yerleştirmek gerekmektedir. Eğer bilim kültürü bir toplumda yerleşmez ise, o toplum modern toplum özelliğini kazanamaz. Bu çalışmanın amacı, bilim kültürünün toplumda nasıl işlev göreceği varsayımından hareketle sistem teorik açıdan analiz edilecektir.

**Anahtar Kelimeler:** Bilim, Kültür, Toplum, Sistem Teori, Niklas Luhmann

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## 1. Giriş

Toplumun bilim kültürünü, toplum teorisi varsayımlarıyla ele aldığımızda, tüm sosyal işlemleri içine alan toplum, (Luhmann, 1999: S.78) öz üretimli bir sistem olarak kendi işlemlerini, işlemsel olarak kapalı bir şekilde kendisi meydana getirir. Diğer sistemleri içine alan geniş bir sosyal sistem olarak toplumun kendinden ürettiği işlemleri ise, iletişimdir. (Luhmann, 2002: 13) Sosyal sistem öz üretimli bir sistem olarak iletişim temelinde kurulan bir sistemdir. Bu temelde sosyal kavramı tek başına yeni ortaya çıkan ve gelişen bir oluşumdur. (Kneer, Nassehi, 1997: 80)

İşlevsel farklılaşmış modern toplumlarda toplumun alt sistemlere ayrılması sonucu; eğitim sistemi bu işlevsel sistemlerden biri olarak, bir yandan iç toplumsal çevrede başka işlev sistemleri üzerinden farklı işlevleri algılayarak, diğer yandan, eğitim sisteminin yükünü hafifleterek işlev görür. (Luhmann, 2002: 14) Eğitim insanların yeteneklerini geliştirir ve sosyal hayata bağlanmalarını destekler. (A.g.e., 2002: 15) Çevreyle iletişimde sosyalleşme açısından psikolojik ve sosyal sistemlerin entegrasyonunda eğitimin rolü yadsınamaz.

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Psikolojik sistemler kendi yapılarını sosyal beklentilerden kurarlar.(Lenzen 2004: 94) Bunu gerçekleştirirken öz üretimi kullanırlar ve gelecek hadiseleri düzenlerler. Bu işlev için beklentilerin eğitimi gereklidir. Kendi sosyalizasyon süreci hangi hadiselerin sistem için mümkün olduğunu düzenlenebilmesi için, bu beklentilerin eğitimi süreci üzerinden kavranabilir. (A.g.e., 2004:115)

İnsan, çok çeşitli ve farklı sistem türlerinin birleşmesinden meydana geldiği için, öz üretimli bir ünite değildir. İnsanların psikolojik sistemi canlılar sistemi ve nöropsikolojik sistemler sosyal kavramı içinde değil, dışında bulunur. Fakat o iletişimi cezbetmek ve yanıltmak için sosyal sistemlerin çevresinde imtiyazlı bir konuma sahiptir. (Kneer, Nassehi, 1997: 80)

Luhmann bilgi kavramının toplumun kurucu ögesi olduğunun altını çiziyor ve aynı zamanda sözlü iletişim ortak bilgiyi şart koştuğunu vurguluyor, bilgi olmadığında da öz üretim başarısızlığa uğruyor. (Luhmann, 1992: 122) Eğitim ne üretirse, bilgi olarak adlandırılır. Şekil olarak bilgi, araç olarak hayat akışının aracını üretir. Başka hayat akışlarına yön vermek için, bilgi temelinde diğer olanaklar kazanılır. Toplum teorisi açısından değerlendirildiğinde Luhmann, bilgi nedir? sorusuna verdiği cevapta, modern toplum bilgi toplumu olarak tanımlandığında, kullanılabilecek bilgi kavramı yoktur. Bu durumda bilişsel / normatif veya bilişsel / duygusal ayrımları yeterli değil, çünkü hem normatif taraf ve hemde duygusal tarafta bilgi içermektedir. Kültür bütün konuların iletişim yardımıyla kurulmasıdır. Bilgi ve eğitim ise kültürü görünür kılar. (Luhmann, 2002: 97) Sistem teorik olarak kültür toplumun hafızasıdır. Hafıza, arşiv veya bilgi deposu değildir. Toplumun hafızası olarak kültür, unutmama/ hatırlamayı filtreleme, geçmiş ve geleceğin belirlenmesidir. (Burkart, Runkel, 2004: 22) Toplumun tüm alt sistemleri öz üretimli bir sosyal sistem olarak bilgiyi kullanır. Bilgi olmadan toplum kurulmayacağından, toplum olmadan da bilginin olmayacağı bir gerçektir. Bilginin ve bilimin yerleşmediği kültür haline gelmediği toplumlarda ne modernleşme tamamlanabilir ne de vatandaşlık kültürü temelinde demokrasi gelişir. Bu genel değerlendirmeler sonucunda, bilim kültürünün toplumda nasıl işlev göreceği varsayımından hareketle bilim sistemi, sistem teorik açıdan analiz edilecektir.

## 2.Sistem Olarak Bilim

Bilim, modern toplumun işlevsel farklılaşmış alt sistemidir ve iletişim aracı olarak hakikati (gerçeği) kendisini tekrar üretmek için kullanır. Bilimin toplumsal işlevi ise toplumun evrimi için, yeni idraklerin, algıların kurulmasını ve kazanılmasını oluşturmaktır. Luhmann'a göre bilim sisteminin dışında da gerçeklik mevcuttur. Zaman içinde bilim sistemi toplumun diğer alt sistemlerinden farklılaşarak, gerçeklik kodu hakikati üretme işlemleriyle ilişkili olarak, gerçek ve gerçek olmayı ayırt etmek, doğrulamak ve yanılsamak için test etmek, her iki değer üzerinden bilimsel olarak her iletişimin, gözlemlenebilmesini mümkün kılar. Bu durumda bilimsel hakiki olmayan gerçeklik, bilimsel olarak analiz edilmesi gerekir. (Baraldi Claudio, Giancarlo Corsi Elena Esposito: 1997: 211, Luhmann, 1992: 274)

Sistem teorik olarak hakikat sembolik genelleştirilmiş iletişim aracıdır. Hakikatin, diğer bir ifadeyle gerçekliğin ortaya çıkarılması hipotezlerin oluşturulması bilimsel metodlar, teoriler temelinde test edilmiş bilgileri mümkün kılar. (Baraldi Claudio, Giancarlo Corsi Elena Esposito: 1997: 202)

Gerçekliğin ortaya çıkarılmasında, belirlenmesinde, ayırt edilmesinde, adlandırılmasında, gözlemlenmesinde, tanımlanmasında, açıklanmasında, doğrulanmasında veya yanılsanmasında bilim kavramlara bağımlıdır. Bilimin bütüncül lisanı sadece kavramları kullanmadığı, hangi dereceye kadar bilimin kavramları kullanacağı ve kavram kullanımlarını kendi açısından teorik olarak koordine edeceği, toplumsal iletişim dilinden farklılaşmaktadır. Bir gözlemci kavramlar sayesinde diğer iletişimlerini ayırabilir. (Luhmann, 1992: 124) Diğer taraftan Luhmann bilginin iletişimsel üretimini, bilginin hakikat gerçekliğini işaretlemekten birlikte iletişim gerçekleştiğinin altını çiziyor. İletişimde bilginin gerçekliği vurgulanabildiği gibi, kuşku da dile getirilebilir. İletişim içeriği, hakikat değerinden ayrılabilir. Hakikat sorusu evet ve hayır ekseninde bilgi hakikat değeri belirlenmeden doğrudan gerçek/ gerçek değil şemasını üretir. Bu bağlamda bilim daima üretilen bilgiyi düzeltmek için işlev görecektir. (A.g.e., 1992: 134)

Luhmann bilim sisteminin yapıları normatif beklenti tarzında ve/veya bilişsel (kognitif) beklenti tarzında oluşacağını ifade ediyor. O'na göre eğer iletişimde beklentiler hayal kırıklığı ile sonuçlanırsa, normatif beklenti stili, iletişimde beklentiler hayalkırıklığı durumunda düzeltilmesi gerekiyorsa bilişsel beklenti tarzını seçiyor. (A.g.e., 1992: 212)

Bir araştırmada yeni bilinmeyen sonuçlar meydana çıkarıldığında, beklentilerin değişmesi durumunda bilimsel bilgi de değişiyor. Bu sonuç yeni teoriler ve kavramların formüle edilmesini zorunlu kılar. Buna göre bilimsel yapılardan başka beklentilerin ortaya çıkması ihtimalini artırmaktadır.. (Baraldi Claudio, Giancarlo Corsi Elena Esposito: 1997: 212)

Sistem teorik olarak bilim temelinde farklılaşma gerçekleştiğinde; ayrım, öğrenme/ öğrenmemeyi değiştirme veya saptama değil, bilakis sonuçların kazanılmasının farklı yolları vardır. (Luhmann, 1992: 139)

Bilişsel öğrenmeye hazır olma ve normatif öğrenmeye hazır olmama bilginin vasıflandırılması dikkate alınması gerektiğinde, diğer bir ayrım ortaya çıkar. Bu ayrım tecrübe ve eylemdir. (A.g.e., 1992: 140) Eğer bir sistemin durum değişimi (=davranış) çevresine atfedilirse, tecrübe kavramıyla ilişkilendirilir. Eğer bir sistemin durum değişimi kendisine atfedildiğinde ise eylem kavramı ortaya çıkar. Atfetmeler, daima bir gözlemcinin gözlemidir. Bu durumda gözlemciden gözlemciye yanılma sözkonusudur. Bir gözlemci diğerinin eylem olarak gördüğünü, diğeri tecrübe olarak görebilir veya bu tersi içinde geçerlidir. (A.g.e., 1992: 141)

Genel anlamda bilgiyi, modern bilimin yapısı olarak kavramak güçtür. Bilinmesi gerekli olan ve bilgi her alanda mevcuttur. Her tekil aktivite bilgi şartı taşır. Her tecrübe ve iletişim için bilgi kaçınılmazdır. Toplumsal iletişimin her alanında da bilgi şarttır. (A.g.e., 1992: 147)

Sistem analizi açısından, diğer bir ayrım da bilginin kalitesini ortaya çıkarmak için yapılan ayrımdır. Örneğin; gizli bilgi ve kamusal bilgi, hakiki (istenç) bilgi (episteme) ve fikir bilgisi (doxa) v.b. gibi. (A.g.e., 1992: 148)

Bilim, yinelemeli işlem yapan (A.g.e., 1992: 275) ve öz referanslı kapalı işleme tabi olması nedeniyle, özerktir. (A.g.e., 1992: 289) Yinemeli kapalı sistemlerin kendi öğeleri ağ oluşturma nedeniyle, yine kendi öğelerinden üreteceklerdir. Sadece sistemin kendi ürettiği üniteler, sistemin öğeleri olarak ele alınır. (A.g.e., 1992: 275) Özerklik kavramı ise, kendi ünitelerini sistemin kendi işlemleri üzerinden üretimidir. (A.g.e., 1992: 289)

Luhmann özerklik/ yaderklik (kendisinin dışında, başkasının koyduğu yasaya bağlı olma) yerine bağımsızlık/ bağımlılık kavramını tercih ediyor. İletişim aracı olarak hakikat/ gerçekliği bilim sisteminin gerçek/ gerçek değil kodunun yönlendirmesiyle farklılaştırması sonucu, özerk sistem ortaya çıkıyor. (A.g.e., 1992: 292)

Luhmann gerçeklik söz konusu olduğunda, hangi şartlar altında isabet eden ilgili ifadeler gerçek olmadığı hakkında sorulması gerektiğini vurguluyor ve bilim sistemi içinde iletişim bu şekilde vukubulduğunu dile getiriyor. 'İletişimler gerçek/ gerçek değil şeklinde işaretlendiğinde, bunun üzerinden kendi ileri kullanım kapasitesi belirlendiğinde, bunlar bilim sisteminin işlemleridir. Sistemin finansmanı, dışardan yönlendirme ihtimalini ortaya çıkarır. Fikir özgürlüğünün siyasi belirlenme ihtimaliyle birleştiğinde de, sistemin işlemleri efektif sınırlandırılır veya kendine bağlanır. Bilimde sansür uygulanması, araştırma sonuçlarının manipüle edilmesi, bilginin insanların yararına kullanılmaması, etik/ moral problemleri ortaya çıkarır. İletişime katılan insanlar kendi ilgilerini gündeme getirmeyi severler. Örnek olarak, itibar veya kariyer ilgisi. Kitle iletişim araçlarının kamuoyu oluşturmada ve kamuoyunda dikkat çekmek için belirli konuları gündemde tutarlar. Bu bilim sisteminin başarısı için önemli olsa da, bilim sisteminin sistem olarak işlem yapmasında özerk işlem yapması gerçeğini değiştirmez.' (A.g.e., 1992: 293) Bir araştırmacı veya bilim insanı sadece gerçeğin ve hakikatin peşindedir. Hakikatin ortaya çıkartılmasında, kendi ideolojisini ve/veya inancını amaç ve araç açısından sonuçları manipüle etmek ve çarpıtmak için kullanamaz.

### 3. Kültür Olarak Bilim

Niklas Luhmann modern kültür kavramının 18.yüzyılın ikinci yarısında kurulduğunu, semboller ve değerlerden değil, genel karşılaştırma ilgisine bağlı olarak ayrımlardan, karşılaştırma işleminden meydana geldiğini ifade ediyor. (Burkart, Runkel, 2004: 15) Luhmann 1980'li yılların sonunda kültür kavramını anlambilim (semantik), kendini betimleme, veya toplumun hafızası olarak adlandırmıştır. (A.g.e., 2004: 17) 'Luhmann toplumun işlev sistemlerini anlambilim açısından, kendini betimlemeyi üretme mekanları olarak görüyor. Her işlev sistemi kendi yansıma teorisini ve semantiğini, konuları ve araçları, kodunu ve programını kendi geliştirir. Bu nedenle kültür (semantik/ kendini betimleme) kendi işlev sistemine dahil değildir. Fakat sosyal ve kültürel yapılar işlev sistemleri dahilinde sistematik olarak ayrılacaktır. (A.g.e., 2004: 28)

Bu ilişkide işlev sistemlerinin kültürel önceliği temelinde alt sistemler söz konusu olduğunda toplumun kendini betimlemesine kültürel üstünlük temelinde ulaşabileceğini vurgulayabiliriz. Burada bilim önemli bir role sahiptir. Kendini betimleme teori olarak ele alındığında, alt sistemlerin kültürlerini bilimselleştirmeye yorumlanabilir. (A.g.e., 2004: 30)

Luhmann'ın altını çizdiği diğer bir problem de, bilimin yeni algılamalar üretmede daha az toplumun kendini betimlemesinde güncel ihtiyaca cevap verecek şekilde aktaracak olmasıdır. Bu durumda güncel dünyayla bağlantı eksik kalacak, bilimsel bilgi güncelde önemini kaybedecek, yönlendirme bilgisi olamayacaktır.

Yeni bilginin aktarılmasında kitle iletişim araçlarının önemi yadsınmaz. Kitle iletişim araçları modern kültürün kurulmasında ikinci düzenin gözlemlenmesini hızlandırır. (A.g.e., 2004: 31) Modern kitle iletişim araçları belirgin bir kültürel işleve sahiptir ve kitle iletişim araçları olmasaydı kültür, kültür olarak tanınması

mümkün olmayacaktı. Bu işlev sistemi modern toplumların kendini gözlemleme, kendini betimlemede öncü rolü üstlenmektedir. (A.g.e., 2004: 32)

Toplumun alt sistemleri kendini yenileyebilmesi, kendini aşabilmesi, değişimi yakalayabilmesi ve gelecekteki sorunlarla mücadele edebilmesi için bilim kültürüne sahip olması gerekir. Toplumun tarihsel süreçlerde semantik ve kendini betimlemesini dikkate aldığımızda da bunu bilimsel bilgiyle şekillendirdiğini gözlemleyebiliriz. Bilim kültürünü toplumun alt işlev sistemlerine yerleştiremeyen ve geliştirmeyen toplumlar, bilgi üretilmediği gibi siyasal ve toplumsal kurumlarını çağın gereksinimlerine göre geliştiremez. İşlevsel farklılaşmış modern Batı toplumlarıyla ne yarışabilir, ne de kendini uluslararası sisteme entegre edebilir.

#### 4.Sonuç

Bu çalışma Niklas Luhmann'ın sistem teorisi temelinde bilim ve kültürün bir sosyal sistem olarak modern toplumlarda nasıl işlev yapacağı, bilişsel temelde analiz edilmeye çalışılmıştır. Sistem olarak bilimin toplumun alt sistemleri açısından nasıl farklılaştığı, bilimsel bilginin öneminin modern toplumlar için daha arttığı gerçeğini ortaya çıkarmaktadır. Bilimin toplumun alt sistemlerinde bir kültür haline gelmesi şarttır. Çalışmanın sonucuna göre bilim sisteminin bu işlevi yerine getirebilmesi için yeni projeler geliştirilmesini zorunlu kılmaktadır.

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# Towards comprehensive religious education (a trial for new research ways within the frame of liberalism and multiculturalism concepts)

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## Abstract

Humanism is a concrete result of the battle which the Western civilization made with Catholic Church. Church and God was tried to be weakened since they are regarded as tools of oppression which tries to estrange people to the values that turns a human being into a person, and these tools were tried to be replaced with human, directly. This change in ontological paradigm paved a way to enlightenment, also by affecting information, and enlightenment paved a way to fast technological developments. In this study, in order to understand the concept of humanism, which we consider as the condition for understanding today and future and creation of new values upon this understanding, and in order to present the connection of humanism to our root values, I will try to think out loud within the context of the effects of the relation between the concepts of liberalism, pluralism and multiculturalism, which I think have a close relation to humanism, on religious education perceptions. In a world in which cultures, religions and races spread freely and which is smaller than before what kind of a multicultural society model can we build up? How ready are we to practice these models in historical and intellectual senses? I will try to discuss the answers to these questions.

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*Keywords:* Religious Education; Liberalism; Multiculturalism; Comprehensive Religious Education.

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## 1. Introduction

In fact, our basic assumptions about life are effective on our approaches concerning religious education. Beyond our statements as of our traditions and actions, no matter whether we have a pluralist or monist approach, or as the people who assimilate do we prefer ashoura (a mosaic) or soup (a mixture)? As the people who represent majority and as intellectuals, do we want the minorities to be protected in an uncontrolled changing process? Or does the imposition of the hegemonic (sexual, cultural, religious or denominational) lie behind our point of views and evaluations?

When we talk about teaching religions, do we plan to raise the soldiers of the world that we dream to build or do we expect the religion to contribute to our world? These questions also point out the main problems that have to be overcome in the field of religious education. By pointing out the relations between these problem fields which seem irrelevant to each other, I will try to make some determinations about the future of religious education.

## 2. Main Text

### 2.1. Shell Change from Traditional Values into Universal Values

The traditional religious education of Islam has been effective on religious education activities in Turkey throughout centuries. In religious education activities, which are carried out at various levels, teacher-centered and content-centered applications have emerged. The first step of religious education consist of teaching Quran with Arabic alphabet, memorizing prayers and short suras which are necessary for worship, giving necessary religious information to worship and a brief summary of the life of Prophet Muhammad. Among those who developed Koran reading skills, the talented ones were taken an education including memorizing the Koran to

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become a hafiz, and the ones who completed this education successfully and had the opportunity and the interest were directed to madrasahs which had the characteristics of higher religious education institutions. Meanwhile, vocational training in the form of master-apprentice training was continued with on-the-job training and moral and values education at work.

Ottoman Empire's efforts to follow the developments in the west, starting from the 18th century, could not make a progress in the field of education. While institutional structures were changing, traditional understanding styles and content continued to be decisive on human training model. Especially in the field of religious education, presentation of a religious education, which was limited by catechisms in new educational institutions, was followed. The main purpose of this traditional education is to provide the basic information which Muslim people need in their daily life.

Despite some structural changes, religious education could not follow either the social or the scientific developments until 2000s. This change and development in the sense of religion is important for its being the first. Because the teachings in the religious education taken from theology were made suitable for education and so theology, which could not follow the developments, was not able to make a contribution to the development of religious education. Second one is the developments in the field of education. Third one is new understandings and applications in religious education. The individuals from different faiths and cultures has become closer and interacted with each other more than before and this interaction has caused new models such as phenomenological, intercultural, interdenominational and multicultural understandings to be introduced in addition to sect-centered understanding.

In Turkey, there is a discussion which has increasingly been talked over starting from 1980s about what should be the model to be adopted in religious education. Since 2000, Turkey has quickly subjected the model to change on which religious culture and moral knowledge course, which is one of the compulsory courses in schools, is based in a manner that it can appeal to differences. In Turkey, it is stated that compulsory religious education courses in primary and secondary education are based on a model which is interfaith and supra-sectional.

Liberal view point is observed clearly in all these aspects. Liberal view point requires supporting the individual's personal development and enabling him to adapt to the society in which he lives by minimizing institutional oppression in religious education (churches or similar religious hierarchical structures). In a sense, liberalism means that on secularism, individualism and freedom principles should be activated on educational and religious educational understandings.

## *2.2. Towards Comprehensive Religious Education*

The planning of the courses in the field of religious education (in particular I mean religious culture and moral knowledge classes) will start with setting purposes. Especially, Islamic educators argue that the most important determinant on religious education activities is the basic Islamic sources and other educational processes cannot be organized independently of these sources. This approach persists that purposes of religious education should be organized with reference to content of traditional Islamic education. Indeed, when curriculum of the religious education and religious culture and moral knowledge courses of primary and secondary education of early republic period is analyzed, you can clearly see that they were developed with reference to content of Islamic Catechism.

When we speak upon the concept of educational purposes, in reality we're talking about our intentions. There is no difference between saying: "Education's purpose is to educate good citizens" or "Education's intention is to educate good citizens". At the same time, as well as the intentions, purposes are closely attached with values. Similarly, there is a strong relationship between the purpose of education and our belief in the functions that the education needs to undertake. Therefore, goal setting process for a subject that we will teach is not independent from our value judgment. As well as this value judgment affects our goal setting process, more specifically, it affects our education definition, arrangements of curriculum in other aspects, course flow charts which will be followed for each subject and our applications in the education process.

That's why, educational purposes are arranged to help us in response to the question "Why?" (Why do I teach this subject, these concepts and skills?). Also these purposes help us to response to the question "How" (How will I teach this issue, concept, facts and skills?). Because, the response of the questions of how will we teach this issue and which approach will we use, directs us to the educational purposes that we expect to reach. Then the base of the education aims comes into question which depends on a good superstructure (subjects, expansions, working plans and content). When we take time to think about the purposes of education, content is transformed into a secondary material for us. We give more priority to personal development of the individual and his freedom and minimize all the institutional and social oppressions over the individual. We also give priority the skills which are necessary in the solution of the problems arising when the individual encounters with differences. This liberalizes the religious education process and makes it multicultural.

Moving from the purposes and centralizing the individual do not mean giving up the content completely. As I

underlined above, a religious education acting upon purposes both centralize the individual and it is in relation with the content in order to provide the individuals to adapt to the society in which they live. Here the key feature making liberal religious education different from traditional education is the replacement of the central content with the individual that is in the environment. In liberal religious education, while the individual takes part in central, content is carried to the environment. Therefore, the content will become usable and beneficial as long as it becomes meaningful for the development and freedom of the individual.

The most important part of the reasons that are put forward by the ones defending that religious education should be included in curriculum is not grounded on educational reasons. The matter is generally grounded on religious, historical, ethical and cultural reasons. In this grounding there are some points which are ignored such as the reason that we determined in order to include an area in curriculum, adopted teaching approach and also content of the area is determinant. The key feature of these groundings which are made with religious, historical, ethical and cultural reasons is that educated generations convey a standard content to oncoming generations. This provides us a significant framework related to the content and to the method. Educated generations want such individuals who read Koran, know some Arabic prayers and short suras from Koran off by heart, have enough skills and information to help them worship in their daily life, know Prophet's life generally. On behalf of the moral and values, a process proposing to respect for elders, show love to minors, convey values based on social utility such as social cooperation, sharing and togetherness is expected. This content comes with the methods which are teacher and content centered, giving particular importance to verbal transfer and memorization. We mention such a procedural process that there is no asking and questioning; questions are answered according to the content by the way of rationalization.

The expressions used in unit titles and explanations of religious culture and moral knowledge course books clearly refer to the teaching approaches that will be used. The learning domains such as faith, worship, moral and values, life of Prophet Mohammed emerge as the product of traditional religious education. Last words of the attainments such as recites, tells the meaning, states, understands the importance, gives examples, knows, explains present a procedural framework aiming at filling the minds of the individuals accepted as tabula rasa according to adults. That's why, teachers give priority to memorize prayers and suras and have a tendency to use old methods which even lost traces from educational processes such as making students write notes, verbal presentations and readings from the book. Even, it is encountered such teacher profiles giving priority to memorize prayer and sura as the basic requirement for the evaluation and evaluate the student's success in religious education according to the success in memorizing the prayer and suras.

When the religious education applicators' statements and applications grounding religious education are analyzed, a silent hypothesis defending that religious education should be Islam-centered emerges. An important part of the claims suggests that the result of the religious education requires directing the individuals towards Islamic way of life and faith either implicitly or explicitly. This hypothesis identifies the school tasks in religious education area with the task of the mosques in religious education area. However, on the basis of the groundings above, when we defend that the religious education should be given in schools, we need to be prepared to response the question: "Why don't the mosques fulfill this responsibility?"

There are some people stating that an Islam-centered religious education as an education area in schools will help individuals to make sense of themselves and their environment. It is thought that they will not have much difficulty since such a religious education contributes them with the help of cognitive learning. Also there are ones who think that the methods of such a religious education can be improved within the process. Including Islam, which makes a big contribution to society's dominant culture, all religions claim themselves as the only representative of the reality by force of their nature. With these claims, religions can make contribution to the development of critical thinking skills and increase of alternatives by offering different view points to help individuals make sense of their life and environment. There are answers given to vital questions of human by religions as well as science and philosophy.

The ones who defend that religious education should be given in the schools made this association with the educational reasons and this association has critical aspects when it is looked from different perspectives. As well as there are ones accepting that this area should be taught as a course at schools, there are ones objecting to it, which shows the difference of this area from other areas. This opposing is faith-based, just like it is in belief. On the basis of this acceptance, there might be some people defending that various philosophical understandings which give priority to human and even divinize the human such as atheism, political ideologies, sorcery and magic should be taught at schools as a course.

Another critical aspect emerges at the point of the decisiveness of the religious education as a shaper of the society. When we approach to the subject in terms of Turkish society, there is an Islamic way of religious understanding penetrating each cells of the culture. However, this way of understanding is not the only way of explaining the religion. Meeting with different religions as a result of both meeting of different socio-cultural differences and cultural differences factually introduces pluralist religious understandings. If the ones making this criticism can mention more than one alternative for the reality's understanding of religion, they defend that these alternatives need to be included in curriculum.

This criticism should be thought and discussed upon. Don't the religious beliefs of the majority of the society deserve to take part in the teaching system more than other belief systems do? Of course if the education takes the responsibility of transmission of the cultural heritage by enriching it, an Islamic religious-based educational arrangement should be acknowledged. On the other hand, this effect doesn't justify ignoring the other belief systems and religions. When you legitimize a religious education process that is under the government's control, you cannot ignore the religious and cultural development of a great community to whom the government has to bring services. However, such a process shouldn't give the government the right to build its own understanding of religion and form the differences in this building process.

### 3. Conclusion

In a word, religious education is related to the life that our children are knowledgeable with, to the depth of the life that our children learn superficially, to the whole life our children learned in pieces in different disciplines. In fact, religious education is a speech between adults and the growing generations on a simple question: "What is the life like?" Life is a dialogue between the experienced and inexperienced ones in life. This dialogue will make them reach to the things that they have just found or to the things that they can find together."

The most important issue in the statements that I quoted above is teachers' accepting the children's own experiences as a starting point of religious education. Traditional religious symbols are expressed with the help of the individuals' own language and symbols of that culture. Starting from the introduction of religious literature into human world of meaning, religious terms have divine qualifications and they are rebuilt on the life experience of its own and of society that it makes sense of life together. If considered in this way, in a sense, religious concepts emerge as a result of human thought. To include the growing generations in this thinking process is the responsibility of religious education. By this way we include the individuals in building of the religious understanding that they live in. By this means, they can experience the religion in which they include by making sense of it. Such a building process requires interpretation skill and for an interpretation skill a content is needed allowing them to make comparisons.

When the individuals compare the values they have with the others, their own values are under threat of "exhaustion" and "extinction"; maybe this is the most important issue that we encounter. In fact the society can deactivate the non-functional values in life automatically. If we evaluate the issue with regards to the values such as "faith of God" which couldn't communicate with the individual, an understanding of worship which is ineffective on the behaviors, justice, compassion, responsibility, love, cleanliness, respect the rights of other people and sharing which exists literally but we cannot see their traces in social life. We can clearly see that background of these values' becoming invisible in the social life is that the individuals are not given an opportunity to build their own values.

While pedagogy encourages the individuals to ask, seek and find in all subject areas, it cannot be thought that religious education doesn't pursue the same goal. Religious education, as well as in all areas of education, should direct individuals to discover the religious aspects of human experience. In this sense, Islamic tradition is the student's laboratory in this discovery process. Religious education must present a framework to the growing generations that they need on the basis of Islamic tradition. When children defend the explanations of life based on Islamic explanations; they will find an opportunity to see that these interpretations are the results of the experiences this life has provided to us.

Here, we are faced with an important proposition which comes into the minds of most of us. A student's having a belief which will guide him throughout his life is a situation which is both necessary and desired by religious tradition. Here, two separate opinions may arise. First, if the word "faith" is used as a synonym of the concepts "life itself or philosophy of life", rather than providing a child one single religious situation. We see it as a necessity to give the religious education an opportunity to provide a child to meet with the largest possible chain of thoughts and to give him opportunity to discover. If the word "faith" is equalized with a faith which only belongs to Islam in a specific sense, it means that we expose the child to only one world view and confine him to the necessities of that faith. Such an instruction is not a desirable situation in terms of a liberal education understanding. On the other hand, though education is a concept observed on the child's behaviors related to his whole development, education's expressing an opinion in favor of a belief, emphasizing the superiorities of having that belief is considered as putting barriers to individual development.

The mission of religious education is not only to help the child to make his own way and look from different perspectives to the life about religious understanding as a form of explaining the life, but also to prepare a ground which provides him to benefit from the tradition if the individual assumes a religious attitude. When we approach to the subject in terms of teacher attitudes and approaches in the schools, it is not possible to observe that this responsibility is taken into consideration. However, the situation of religious education here looks like a shop owner who has goods for sale in his shop window. But while this shop owner allows his customer to view, evaluate and even "try" the goods in the windows, will he avoid the attitudes and behaviors obliging them to buy

or will he be in a position directing and obliging them to buy? Even if religious education curriculum development doesn't appreciate such an attitude, teachers can take the role of shop owner who is obliged to sell his products. The mission of teacher to contribute to improve students' skills providing them to buy the goods they need cannot be ignored.

When we consider the religion as a study and application field of pedagogy, we need to talk about a framework "which can be thought over and provide awareness". When we start to think over this framework, it will be inevitable for us to encounter with the searching for the truths among differences. In such a process, I think that the purposes of religious education as an application area of pedagogy should be discussed and improved on the basis of the points below:

1. As a method of describing personal experiences, the purpose of religious education is to develop an understanding on the nature of religion itself.

2. The purpose of religious education is to form a basis providing students to think about the religion and develop an understanding. Just as mathematics and history teachings help students to think mathematically and historically, religious education should improve students' religious thinking skills.

As long as the religious education achieve these targets, it will become liberal by making a major contribution to the individuals' development and it will gain a multicultural qualification by embracing the differences.



# Tradition of notation in the history of Turkish Music

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## Abstract

Notation which is expressing of writing musical tones by using some type of special signs has changed into the many phases up to now which is widely used. Although different knowledge placed at the different sources about when and where the musical writings were came into existence. Notation in the tradition of Ottoman music era had become widespread from the beginning of 19<sup>th</sup> century. Within the traditional musical understanding as a method of education and transference, Notation was used mostly in the edvar books especially for explaining of theory of music. In opposition to implementation of traditional educational method (meşk), the books written for saving repertoire are the most important historical music resources from centuries they belong. It has a vital necessity for the musical observations and researches on recognizing and learning of different notations used in the history and reading the most important notation heritage of Turkish Music.

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*Keywords:* Turkish Music; Musical Writing; Notation; Ebced; Hamparsum

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## 1. Introduction

Notation is the most important document in the musical studying and searching areas and its importance still continue even the sounds could be recorded nowadays. Also its priority in the old eras is indisputable. Especially it has a vital necessity for the researchers to recognize and learn the special types of notations used in the history of Turkish Music.

Many type of musical writings had been improved in the different ages and cultures to write the musical sounds by using some special signs. Although there is different knowledge in many resources about when and where the first musical writing was to come out, mainly accepted approach in the science of history that the Sumerians had succeeded to write their music about 2000 (B.C); such as Phoenicians, Babylonians, old Egyptians, Hebrews, Ethiopians and other Semitic societies had generated musical writings; likewise Uyghur, Chinese and Indians also had presented their musical writings about first years of the birth date of Christ; ancient Greeks and Romans also had improved different kind of musical writings about 5<sup>th</sup> century before D.C.(Agayeva, 2007)

In the mean time meşk method used for the traditional education and transference of Turkish Music, notation is mostly utilized in the edvâr books which explain theoretical systems. In opposition to implementation of meşk – traditional educational method– the books written for saving repertoire are the most important historical music resources from centuries they belong. Because of many cases especially incapacity of human memory and remembrance, getting harder and increase of the number of compositions, inadequate of the meşk method, to be forgotten of the compositions, potential of repeating and the necessity of teaching to others made the musical determining and writing needed. Different notation experimentations faced in the history of Turkish Music can be classified as follows.

## 2. Notation Experimentations Based on the Letters

These notation systems mainly based on expressing every sound by using letters. All letters focused musical writings that sometimes Arabic letters or different letters derived from another alphabet are encoded in a special serialization can be classified under this title.

## 3. Musical Writings Developed by Using Ebced Serialization

In the 9<sup>th</sup> century begining from el-Kindî, after instantly him Safiyyuddin Urmevî, Kutbeddîn Şîrâzî and

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Abdulkâdir Merâgî used ebced letters for explain and show the notes in edvâr books written about the characteristic of music is called as “notation of ebced” in the contemporary Turkish Music literature. (Ayangil, 2014) In these types of musical writings theorists used letter notation according to the ebced serialization for theoretical system explanations instead of playing music.(Bardakçı,1986) Each letter or letter group corresponds to a note. Length of the notes is generally showed by the numbers below. The method for determining the notes if carefully surveyed, it is clearly noticed that the system is composed of the sounds existed before and the sounds are not generated from an existed system.

Differing from contemporary Turkish Music theory there is not big and little type of mücennep interval. This mücennep interval is used to show both types. So interval of mücennep should be thought as both types. Transference of the musical writings are not implemented correctly because of the note scales in the most of ebced system are not indicated. Especially there is a disagreement about the first note letter “elif” shows which tune at the present. Elif generally accepted as the tune of sol in the western music although there is no la tune of steady diapason which prevents certain estimation.

Musical writing is only used in the traditional theory books called edvâr for explaining intervals, makams, tuning of instruments and partly methods of composing by melodic examples. But using the notation for recording the repertoire and transferring it to the next generation, or saving the masterpieces of composers is never became wide. Some theorist of Turkish Music such as el-Fârâbî (d.950), İbn Sînâ (d.1037), Safiyyüddîn Urmevî (d.1294), Abdülkâdir Merâgî (d.1435), Kutbunnâyî Osman Dede (d.1730), Abdülbâkî Nâsır Dede (d.1821) used different types of ebced notation systems in their theoretical explanations. The consideration of “*Arabic ebced notation was unknown by the musicians and performers or never used by them; but it was certainly belonging to scientist and philosophers.*” (Öztuna, 1974) is a fact that should be evaluated according to the theory and performing sense of the centuries that the books were written.

### 3.1. el-Kindî (d. 874)

Although there is no certain evidence about the derivation of ebced notation, some of the oldest examples were encountered in the books of el-Kindî. In the 9<sup>th</sup> century he used Arabic letters to indicate the tunes in a special systemizing. Being specialist in different kind of sciences, el-Kindî had wrote ten books in music including subjects like combination of tunes, methods of composition, components of music, rhythms, instruments, relation between music and poetry. Four of his books *Risâle fi Hubr-i Sînâ ‘ati’t-Te’lif* (The book on composition), *Kitâbu’l- Musavvitâtî’l-Veteriyye min Zâtî’l- Veteri’l-Vâhid ilâ Zâtî’l-Aşreti’l-Evtâr* ( The book on instruments), *Risâle fi’l-Luhûn ve’n-Nağâm* (The book on components of music), *Risâle fi Eczâ Hubriyye fi’l-Mûsika* (The book on tunes and melodies) has reached to the present. Subsequently by the translation of his books from Arabic to Latin, he became famed honorably in the Western world. (Turabi, 1996) After the translation works of Beytû’l-hikme, he is thought to be drawn inspiration from oldest musical writing method and developed a new notation system using the Arabic letters. In this system he used twelve Arabic letters in a chromatic scale. Variously from Greek notation, he used same letters in every scale and never indicated the octave differences. His theorist predecessors also preferred to utilize this notation system sometimes the same or by little changes.

### 3.2. el-Fârâbî (d.950)

One of the famous philosophers in 10<sup>th</sup> century Abu’n-Nasr el-Fârâbî is accepted as “muallim-i sâni” second teacher of philosophy. He is also accepted as “muallim-i evvel” first teacher of music by the most of the theorist and Turkish musical historian. (Jebrini, 1995) Especially he confirmed his fame by his theory book of *Kitâbü’l-mûsikâ’l-kebîr* which is accepted as the most important writing on eastern musical theory and the most comprehensive one. In his work he exceeded old Greek theorist by his studying method on explanations on physical and physiological principles of music. Additionally it includes a lot of organology knowledge raising its importance. (Farmer) His other books on music are known by the name of *Kitâbu İhsâ’i’l-ikâ’ât* and *Kitâbun fi’l-ikâ’ât* which are mainly including his explanations on rhythmic structures in music. In his musical writing system el-Fârâbî, indicates scales and octaves according to the letters’ series and the system is mainly focused on showing the key position on instrument instead of showing the tunes and melodies. Different kind of Fârâbî’s musical writings in some European libraries are published by Henry George Farmer with briefly translation in to English in the name of *al-Fârâbî’s Arabic-Latin Writings On Music*. (Jebrini,1995)

### 3.3.İbn Sînâ (d.1037)

Being authorized in many kind of science like medicine, logic, philosophy, physics, botany and psychology, İbn Sînâ (Özcan, 2001) accepted music as a mathematical science and gave place his musical understanding in his two books of *eş-Şifâ’* and *en-Necât*. (Turabi, 1999) His scientific standing in music, not only his time but also later were a center of attention. Also the thoughts he suggested in his books guided to musical theorist during the centuries. (Turabi, 1997) Although he didn’t write an individual book on theory of music, he clarified his considerations in the

music chapters of eṣ-Şifâ' and en-Necât where the influence of el-Fârâbî obviously can be seen. (Özcan, 2001)

### 3.4. Safiyyüddîn el-Urmevî (ö.1294)

The most detailed ebced notation system based on Arabic letters is explained by Safiyyüddîn el-Urmevî. His notation system analyzed and examined by the predecessors of him and gave them his musical understanding at that period. His famous two musical theory books *er-Risâletü 'ş-şerefiyye fî Nisebi't-te'lifiyye* and *Kitâbü'l-edvâr fî Ma'rifeti'n-negam ve'l-evtâr* – briefly known as *Kitâbü'l-Edvâr*– were the main resources of his theorist followers. His theoretical approach based on 17 scale in one octave which is standing up to now. Only one of his compositions, which he wrote by using ebced notation in makam nevrûz and rhythmic structure of remel with Arabic words, fortunately has reached to now. This composition is also accepted the first oldest example of beste form in the Turkish musical history. (Özcan, 2001)

### 3.5. Abdülkâdir Merâgî (ö.1435)

It is easy to say that in the tradition of Islamic Middle East before modern music era never a composition is saved in notation by reason of auditorial transition. At that time the most authentic way of repertoire saving was to write word of songs which are serving as a substantial message without including any melodic definitions in the anthologies.(Wright, 1994) In this way there are about forty three songs words in many different anthologies attributed to Abdülkâdir. (Kent, 1995) Nearly thirty notes with repeated ones from his compositions came up to now. Additionally, belonging of these songs to him is uncertain because of the possibility of changes during the centuries and using the meşk method for transference.

Merâgî accorded six different books on musical theory. Although they seem the same, his six books are completing each other. (Shiloah, 1979; D'éranger, 1949) Content of *Şerh-i Kitâbü'l-edvâr* is a detailed explanation of theoretical system of Safiyyüddîn. Other book of him, *Makâsıd'l-elhân* is including brief explanation of his musical theory. In some subjects for detailed explanations he is also referring to his other books *Câmiu'l-elhân* and *Risâle-i Fevâid-i Aşere*. This is an evidence of his six books are not the same, but his books written by a gradational method on explanation some subjects. His other book *Kenzü'l-elhân*, generally to be thought that holding his compositions written by his ebced system notation, is never found up to now. (Bardakçı, 1986) One of the most famous Turkish music theorist of the 20th century, Hüseyin Sadettin Arel (d.1955) in his book of *Türk Mûsikîsi Kimindir* claimed that Merâgî in his books declared that *Kenzü'l-elhân* full of notes of his compositions (Arel,1969) which can't be reached by the present music researchers. Either in *Câmiu'l-elhân* or *Makâsıd'l-elhân* his references to *Kenzü'l-elhân* proved that it is written earlier than others and mainly including detailed theoretical subjects conversely general opinion. (Karabaşoğlu, 2010)

In the 15<sup>th</sup> century and earlier the Turkish music system was based on 17 intervals in one octave. Generally one octave divided to 17 unequal intervals and by this way 18 tunes obtained. This 17 intervals system belongs to Safiyyüddîn. Later him it is improved by some theorist like Kutbeddin Şirâzî (d.1311), Muhammed B. Mahmud el-Âmulî (14<sup>th</sup> century) and Mehmed Lâdikî. Merâgî is also one of the biggest contributor of this theory and musical system. (Bardakçı, 1986) Here the tunes in the system of Merâgî are given in the table 1. (Karabaşoğlu, 2010)

Table 1. The table of division of two octave in the 17 intervals in the system of Merâgî

Column A (tune names and letters of 1rst octave)		Column B (letters of 2rst octave and tune names)	
Râst	A ( ا )	YH ( ح )	Gerdâniye
Şûrî	B ( ب )	YT ( ط )	Nim Şehnâz
Zengûle	C ( ج )	K ( ك )	Şehnâz
Dügâh	D ( د )	KA ( ا )	Muhayyer
Kürdî	h ( ه )	KB ( ب )	Sünbûle
Segâh	V ( و )	KC ( ج )	Tiz Segâh
Bûselik	Z ( ز )	KD ( د )	Tiz Bûselik
Çârgâh	H ( ح )	Kh ( ه )	Tiz Çârgâh
Sabâ	T ( ط )	KV ( و )	Tiz Sabâ
Uzzâl	Y ( ي )	KZ ( ز )	Tiz Uzzâl
Nevâ	YA ( يا )	KH ( ح )	Tiz Nevâ
Beyâtî	YB ( بب )	KT ( ك )	Tiz Beyâtî
Hisâr	YC ( بيج )	L ( ل )	Tiz Hisâr
Hüseyinî	YD ( يد )	LA ( لا )	Tiz Hüseyinî
Acem	Yh ( يه )	LB ( لب )	Tiz Acem

Evc	YV(٢٧)	LC (لج)	Tiz Evc
Mâhur	YZ(٢٨)	LD (لد)	Tiz Mâhur
Gerdâniye	YH (٢٩)	Lh (له)	Tiz Gerdâniye

### 3.6. Kutbunnâyî Osman Dede (d.1729)

One of the different varieties of ebced notation inventor in the 18<sup>th</sup> century was Kutbunnâyî Osman Dede, composer and theorist of Turkish Music. In the *Sâlim Tezkiresi* is mentioned that Osman Dede was able to use ebced notation skillfully in these lines: “...*Kelimât ve hurûf kitâbet eder gibi nağme ve savtî kitâbet ederdi. Zîr u bâm ve tîz ü pest şîve-i harekâtı idâre-yi mahsûs üzere yazıp bir vech ile zapt ederdi kim...*” –He could write notes and melodies as if write words and sentences. He could also wrote dawn shrill and heavy sounds by using special signs. (Karabaşoğlu, 2012) – His edvâr book which is including information on his notation and some examples unfortunately didn’t reached up to now. From different resources as we know the edvâr book of Osman Dede was including about seventy instrumental notation of his compositions which most of them also repeated in the books of Cantemir and Kevserî. (Judetz, 1998)

### 3.7. Abdûlbâkî Nâsır Dede (d.1821)

One of the most remarkable suggestions of ebced notation was invented by Abdûlbâkî Nâsır Dede, a Mevlevî theorist and one of the shining composer of 19<sup>th</sup> century. While he focused on theoretical subject in *Tedkîk u Tahkîk*, in his other book of *Tahrîriyye* he explained details of his ebced notation and wrote dawn four of his own compositions by using this notation.

## 4. Other Musical Writings Developed by Using Letter Serialization

### 4.1. Dimitrie Cantemir (d.1723)

As being a theorist and a composer Cantemir lived in the same period of time with Kutbunnâyî Osman Dede. Because of education he came to Istanbul in his early ages. His teacher in music and instrument was Tanburî Angeli. His book with the name of *Kitâb-ı ‘İlmü’l-mûsikî ‘alâ Vechi’l-hurûfât* was including knowledge on Turkish Music theory and the notation examples of musical forms played at that period. This book also was presented to II.Ahmed, sultain of the era. By his book Cantemir tried to collect disorderly musical knowledges and methods in a systematic base. Additionally his book also was including three hundred and fifty one note examples of instrumental form like peşrev and semâî. Beside including many different notes which belong to 16<sup>th</sup> and 17<sup>th</sup> centuries, his work can be accepted as a characteristic book of basic Turkish Musical theory, also an anthology of instrumental compositions, education of solfeggio, instrument (method of playing tanbur) and a book of musical forms. (Tura, 2001; Ayangil, 2014)

Differing from classical ebced serialization in his system durations of the notes indicate by putting little numbers upside of letter or sometimes below. Cantemir followed ebced system partly and he indicated tunes with using letters –Arabic letters but not in ebced serialization– and the measurements with numbers.

The most important characteristic which differs his system from ebced is his specify the letters reminding of the tune names. “*Bu yüzden, Kantemiroğlu notasını ‘bir çeşit ebced notası’ diye adlandırmak yanlıştır, onun notası bir ‘harf’ yada ‘kısaltılmış perde adları’ notasıdır.*” –For this reason classifying his notation system as a kind of ebced notation is wrong, because it is a type of letter or reduced names of tunes.– (Tura, 2001)

Nearly fifty years later after Cantemir, Nâyî Ali Mustafa Kevserî had copied his book. He also added in his edition about fifty new notes that he wrote following the Cantemir’s writing system.(Judetz: 1998) This copied edition known as *Kevserî Mecmuası* and it can be an evidence that Cantemir’s writing system had been used temporally to protect musical savings.

### 4.2.Hamparsum Limonciyan (d. 1839)

In the first quarter of 19<sup>th</sup> century by encouragement of the Ottoman Sultan III.Selim, Hamparsum Limonciyan managed to invent a kind of musical writing method which is called by his own name “Hamparsum Notası”. Although it has not enough sufficiency to indicate whole tunes in Turkish Music, because of its practical specialties like no necessity for stave, easiness to write and learn it was widely used before today’s notation. There are seven sign for seven main tune. Shrill octave tunes are indicated by using short line under the these seven main tune. There is no alteration or special signs for makams, these are determined depending on makam using and performing. The measurement of the tunes are also indicated by using little lines and circles on the tune signs. Notation of Hamparsum is the most reliable and extensive musical writings used in the history of Turkish Music.

## 5. Musical Writing Trials for Graphical Notes

There are different note trials instead of writing with ebced lining or letter coding in Turkish musical history. Within these, the techniques developed by Ali Ufkî Bey provided notation of much more songs comparing with ebced system. The graphical western notes started to be used with the help of the teachers coming from abroad to make lessons for the students of Muzıka-yı Hümâyûn established to replace with Muzıka-yı Hümâyûn in the term of Sultân II. Mahmud.

### 5.1. Ali Ufkî Bey

One of the major sources of Turkish music in 17<sup>th</sup> century is *Mecmûâ-i Sâz ü Söz* which is copyright by Ali Ufkî Bey. This is the first book used in Turkish music history for note writing in western style with stave. He reflects us his musical understanding by recording the songs in forms of species in Turkish music in a style developed by him. "Note of Ali Ufkî is same as the stave note composed of five lines used in west. Alterations and signs are used in status in west. No extra mark was added to show the tunes in Turkish music and no explanation took place indicating tunes and interval in Turkish music." (Karamahmutoğlu, 2014) The famous copyright of Ali Ufkî including more than 500 songs in all species and forms prevented loss of these songs.

### 5.2. Dârülehân

The use of graphical notes of western style in Turkish music appeared as in the nature given in Dârülehân. Writing style stave in here were written in western note style but the words were as syllables from left to right as opposite of writing style in Ottoman Turkish. The lack in showing the alterations in this system was tried to be removed especially by the studies of Hüseyin Sadettin Arel and Suphi Ezgi and then the system used in Turkish music today was composed. Notes on stave stood in line with direction of word writing because of the writing style from right to left in Ottoman Turkish. Writing of western notes used by Dârülehân in 20<sup>th</sup> century was from left to right but the words were aligned across the writing direction as syllables.

## 6. Conclusion

Today, not widely use of notes in Turkish musical history brings criticism about not having notes in Turkish music or loosing compositions because of not having notes. On the other hand, the reasons for choosing meşk by a music culture, which is a conservation and transition method in verbal culture, should be investigated in detail. The real reason for widely use of notes can be interpreted in a health manner.

Especially note systems in edvâr books were created for teaching and remembering their performers the voice structure of the term that the notes were constituted and showing the right intervals by mathematical methods to the performers. So, it was not in a style that makes a system or rules to an existing music but developed for only explaining the existing music by not affecting the evolution of the music.

Transfer of collections composed of note writings that were developed in Turkish musical history in different libraries to today's notes provides us understanding the musical style in different terms in Turkish musical history in addition to appearance of most of the songs that are thought be lost.

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# Training teacher trainees of the Slovak language and literature teacher in a minority environment

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## Abstract

Forms and methods of teaching a second language in a minority environment are reviewed and incorporated in new textbooks and teaching guides. Research and many studies are being conducted in order to form textbooks with a more effective impact on the communicative competence acquisition. Therefore the outcome of teaching and learning the Slovak language may be in accordance with the interest in a second, language of minority students. The aim of minority community education in Slovakia is to develop communicative competence in the Slovak language in addition to keeping the mother tongue as ethno-significant factor with its specific features and linguistic-cultural specificities of a certain ethnic minority.

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**Keywords:** Foreign language learning strategies, minority communities, language pedagogy concept, intercultural specifics, cognitive approach, communicative approach.

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## Language background in Slovakia

Globalisation and integration processes cause the interest in the Slovak language not only within the Slovak republic. The evidence may be various research studies within the field of applied linguistics on Slovak as a foreign language. The issue of research is effective dissemination of the Slovak language in the form of foreign language teaching. Methods to acquire the Slovak language efficiently have become the subject of applied linguists' and Slovak language methodologists' research. The emphasis is put on learner's individuality and the diversity of the types of learners (memory, analytical, visual, auditory types, impulsive or reflective types, etc.) with respect to effectiveness of the adopted target language. Activities that help develop basic communicative skills and a general approach to teaching minorities the target language in a majority environment are being modified. New and modern approaches that take into account dominant individual learning styles are being searched for.

The Slovak population varies - which has been associated with the position of Slovak borders with five countries and also with migrating population. The largest minority group of all is the Hungarian minority with a share of 8.5%, followed by the Roma minority with a 2% share and the remaining 8.8 per cent is completed by Ruthenian, Ukrainian, Czech, Polish and German nationalities. This fact has an impact on learning and teaching Slovak (national) language. In Slovakia, there are also schools where language of teaching is Slovak as well as a language of national minorities and as Gregorík (2007, p. 54) has it: Language is one of the most important sources of national and state identity. Teachers in such schools do not only educate in a minority language but also try to build a positive relationship with the majority language, culture and people of the majority group. Training future teachers, the so called teacher trainees in such environment is thus as specific as their performance in the minority school environment. Today, however, such training takes place as a two-subject-education: the Slovak language and literature and a Minority language and literature. This kind of education, however, does not focus on the fact the Slovak language is the second target foreign language. Therefore the subject Slovak language and literature must be taught with the use of methods that are different from those that we use when teaching Slovak as a mother tongue. Let us take Hungarian students of Slovak as an example. Because of the fact that the Slovak language is fundamentally different from the mother tongue of minority groups (in our context Hungarian) – in a geneological as well as typological way – and social environment of the students is predominantly Hungarian, objectives specification, learning content selection and structuring as well as educational process modelling is governed by principles of foreign language teaching (Píšová, 2013, p. 246). Therefore the training of future teachers of the Slovak language in a minority environment must be adapted to the above mentioned fact because effectiveness of teaching the Slovak language as a target language of minority students will depend on that. The contemporary training of Slovak language teacher trainees in a minority environment is inappropriate since it disregards the fact that learners do not have the same language level as their

mother tongue. Many students, even though they are familiar with the Slovak language, do not use it, do not think in it and cannot communicate in it fluently.

Didactic interest in the Slovak language has intensified also in the minority community in Slovakia. Forms and methods of teaching are reviewed and incorporated in new textbooks and teaching guides. To develop textbooks with a more effective impact on the acquisition of communicative competence, many researches and studies have been done so as the outcome of learning the Slovak language was in accordance with the interest of the second language of minority students. Sociolinguistic approach by which student is able to react flexibly to external stimuli and improve his/her language expression according to current determiners of communication situation is preferred in language education today (Luptáková, 2013, p. 2).

The aim of minority communities' education in Slovakia is to develop communicative competence in the Slovak language but keep and preserve their mother tongue as an ethno-significant factor with its specific features and linguistic-cultural aspects of a certain ethnic. Due to the specific objectives of the educational process in a minority environment, it is necessary to base the teaching of Slovak from teaching principles that are applied when acquiring Slovak as a foreign language. When training teacher trainees in a minority environment, it is important to highlight the specific objectives of this course and to create a methodologically appropriate teaching material adequately to the need. The aim of such education is to teach future teachers how to present the language system to learners with appropriate forms and methods to acquire communicative and linguistic competence as well as intercultural competence in Slovak, as well as to highlight the communication barriers and the methodology for their removal and their evaluation (Pekarovičová, 2002).

When creating the programme of teaching the Slovak language and literature in a minority environment in combination, it is necessary to take into account the principles of cognitive-communicative concept of foreign language language teaching which supports a functional link between linguistic knowledge and communicative competence (Pekarovičová, 2002, p. 13). The specific fact is that - unlike foreign languages teaching, to teach to speak Slovak in a minority environment is to present knowledge about the Slovak language in the existing different-level language background of the Slovak language learners. When mediating linguistic knowledge about the Slovak language, full course content is being reduced and only a partially regulated system of grammatical rules and principles comes into being. At the same time, various methods for making this content available through various tasks take place. The tasks reflect minority language (in the form of comparing, contrasting and alternative description of the properties of linguistic phenomena) in order to fix and make learners understand better linguistic phenomena. Different processes are preferred, usually those that overlap linguistic phenomena of various language levels in order to fix aspects of grammar within the area of communication. For example, J. Bednářová (2007) notices into her publication on progressive methods working with text.

Training students for their future teaching profession in a specific minority environment means purposeful acquisition of methods and forms suitable for learning Slovak as a foreign language. The teacher trainee will acquire a "package of knowledge" about the system of the Slovak language and will be able to transform this information into such a form that his/her learners could effectively acquire the Slovak language as a second language of minorities in Slovakia. The difference between teachers of other Slovak schools will emerge from the methodology of foreign language teaching. Such a teacher - in addition to his/her professional and pedagogical profile - should have properties such as communicative skills and intercultural competence, knowledge on historical, geopolitical and ethno-cultural facts related to the language of the majority group and finally creativity and pedagogical sensitivity to assess the selection of appropriate teaching methods. When comparing the past, the teacher was mostly taken as a source of information for learners; nowadays teachers at all educational levels are required to teach learners where and how to find information and how to implement and use it for their own personal development. Teachers should develop learners' competencies that are necessary for their personal and professional lives. Teachers should also influence acts and behaviour of their learners in the society (Sirotová, 2014, p. 15 - 16). Initial teacher training will mainly be focused on finding suitable methods for the step-by-step language system acquisition and its functional use in the practice. Efficiency of language acquisition largely depends on the presentation of linguistic information. The aim of undergraduate education is to prepare future teachers - professionally and methodologically - to teach minorities (minority language groups) to a national (Slovak) language.

Foreign language learning may be affected by acquired models of mother tongue learning. Also knowing the system of any other foreign language may help get familiar with a target foreign language - the learner uses his/her previous language knowledge. Therefore, an adult learns a foreign language faster and more effective than a child. Methods to acquire a mother tongue, however, do not always need to be appropriate when acquiring a foreign language. There must be mutual relationships and connections between the two compared languages - this all relates to typology and genealogy of the languages. This is most clearly reflected in the difference between the two genealogically and typologically different languages: Slovak, together with Czech, Polish,



Ukrainian (Indo-European branch – Slavic languages that are similar in their typology) and Hungarian (Indo-Iranian branch of the Finno-Ugric languages, typical agglutination of prefixes and suffixes). Tibenská (2012, p. 54) draws attention to the negative impact of contacting genealogically and typologically different languages, especially on an objective criterion of morphological type of language diversity.

### **Methods and forms of foreign language acquisition**

When testing effectiveness of foreign language acquisition, according to various criteria, foreign language learning styles have been selected (Lojová – Vlčková, 2011, p. 45 – 90). We may present visual, auditive and kinaesthetic styles. Those are styles where perceptive organs are dominant – that means that students generate those stimuli that subconsciously prefer. The visual type prefers to link presented information with visual helps such as various schemes, charts, pictures, posters that make remembering easier. That is why it is essential to have picture material in textbooks – it helps understand new words and phrases. Those visual tools are very often implemented in books for foreigners, topics such housing or food describe various rooms in a house or mind maps connected with eating. Creators and authors of textbooks understand various types of learners, however, more effective for minority students would also be to have new modern topics that are attractive, shocking, motivating, interesting and so on. It is the same with silent and regular reading of foreign-language-texts – it helps fix visual shape of words and phrases and learners learn also grammar principles of a written text. Therefore it is necessary to implement texts in textbooks but with topics that are interesting and favourite among children and young learners. We may choose for example topics connected with non-traditional or unusual sports, art (graffiti), music (hip-hop) or lyrics of songs, fashion (fashion extremes), etc.

When teaching Slovak to minorities, it is advisable to work with various visual stimuli that could motivate learners to their own oral creativity. "...The student must be able to express his ideas verbally; thus the student should select appropriate vocabulary, he/she should use a correct grammar structure and tense; it is important to choose a style and register (formal or informal) that would suit the situation" (Smetanová, 2011, p. 382). It is useful to work with pictures, photographs or audio-visual records that learners are supposed to compare, organize, describe, comment on situations, notice changes. The teacher may let his/her learners work with their own images or experiences that may be recollected when asking motivating questions (e.g. What do you imagine when we say "My dream house"? or What do you see when you close your eyes and visualise your friend/enemy?) or inspiring topics (my dream birthday party, flying in the hot-air balloon, in New York alone). To practice and develop written skills, filling in the missing words and word expressions in comics may be interesting, to extend vocabulary through word games such as crosswords could be appropriate. Learners prefer lively tasks and exercises to dull ones, innovative topics, their own creativity, e.g. creating postcards, their own menu, programme, maps and so on. And also grammar exercises that are creative and not isolated from the previous text. To practice reading with comprehension, activities such as reading authentic texts, learners' own texts (from postcards), watching short shots and consequently comment on them.

Those types of learners who prefer audio stimuli (auditory types) search for situations such as lectures, discussions and their peers' answers. They learn from loud reading and opinions formulating, which may be recorded and then played again and again. These are learners that can acquire their pronunciation and other paralinguistic means such as pause, rhythm, pace of the speech easily. They can easily remember many phrases and a structure of a foreign-language-sentence. Therefore, such learners are supposed to have chances to hear various audio stimuli, they should be given space to ask questions and answers, create dialogues, reproduce a text that has been heard before or "give voice" to a mute film. When practicing writing, after-listening filling in tasks, getting key words from a heard text or making notes or a scheme according to a heard text would be appropriate.

The last type of learners is the kinaesthetic one. Those learners need to connect learning with movements and moving. That is why those types of learners need to be educated through the so called "experiential learning" that enables the learners their own creative physical activities. Those ones may be for example role plays, describing 3-D objects, changing rooms, interactive tasks and games, presenting learners' own projects, filling in charts, maps, finalizing pictures, writing scripts, drama activities etc. These activities may be used to teach dimensions, shapes, direction, parts of the body and so on.

Textbooks are therefore created and written with the use of various activities and tasks so that the learner could understand the system, paradigm of the target language in isolated language phenomena. The learner thus is able to use linguistic means in various communicative situations. Therefore, a basic change is preferred: how to link school education with real life, how to make educational process more vivid and involve a learner in a maximum way – we do not need to teach every learner everything (Hincová, 2006, p. 32).

This is a traditional - but effective - type of foreign language education as there are many different types of learners and different types of foreign languages with their own paradigm systems. That is why it is not possible to confuse grammar exercises (formal learning) for communicatively focused tasks (interactive and

communicative learning) when acquiring foreign languages because one way focused education would cause errors in grammar, formality or content of learners' statements. Even though research and many studies show that formal education is preferred to non-formal, spontaneous language acquisition we consider important to teach both of the parts equally and in a balanced way – which makes learning more meaningful and practical.

The selection of methods of foreign language learning is influenced by factors such as the length of study or foreign language level, previous experience and language knowledge. There are great differences between learners who come from various socio-cultural environments. It is related to belonging to ethnic groups, nationalities, social differences and so on.

Methodology of foreign language learning and teaching is divided into: direct ones (oriented primarily on communication – the process is similar to mother tongue acquisition) and indirect ones (oriented primarily on grammar and translation – they are used to bridge communication. When using indirect methods, a foreign language is permanently confronted with a mother tongue (Choděra, 2006, p. 94). Direct and indirect methods have different preferences of individual signs of language system. Direct methods prefer manipulation with a sentence, speech, content, syntax and pragmatics at a level of an oral utterance and out of logic processes they prefer synthesis and induction. Indirect methods, on the other hand, have the tendency to prefer words, system, structure, translation, analysis, deducing, form, paradigm at a level of a written text. It is, however, just a preference of individual signs of system and direct methods may work with language material of indirect methods and vice versa.

Direct methods that comprise of communicative and activating methods (games, role plays, group activities) are appropriate for teaching foreign languages. Communicative method has been stated by The European Council suitable for foreign language education since 1982. Its design is aimed at productive and receptive skills development. From a methodological point of view, such methods are more demanding and require a long term teacher preparation and training (and also not every teacher is suitable for these types of activities) as well as original, authentic teaching materials. Many teachers – despite their difficulties – like to use communicative methods as learners react positively and actively.

The choice of methods depends on the language level of learners: beginners prefer direct methods and intermediate indirect ones. Direct methods preference is also related to the number of students in a group, ideally, a small group is more appropriate; when having a larger one, mostly indirect methods are used. One of the indirect methods of foreign language education, grammar-translation method is preferred – this one highlights the language system more than its functioning.

The differences of intentions and approaches in language acquisition – from a point of view of learning environment and target language aims – are offered in the following table:

Table 1. Slovak language teaching – from a point of view of learning environment and target language aims.

Slovak as a foreign language	Slovak language in a minority environment	Slovak language as a mother tongue
Temporary or none Slovak environment with no existing language background of learners	Natural Slovak environment where minorities with partially existing language background of learners live	Natural Slovak environment where minorities with developed existing language background of learners live
A key point is to gain mostly communicative competence and language minimum (Hendrich's term, 1988) = basic level of language teaching	A key point is to gain mostly communicative competence overlapping language knowledge = language/communicative standard	A key point is to gain knowledge on language system and its implementing into communicative practice = language and communicative competence
<b>Tool to communicate in various communicative situations</b>		
Language acquisition is related to the aim to gain language knowledge and communicative skills in a foreign language Selected language phenomena = Slovak language minimum <b>Methodology of Slovak as a foreign language</b> <b>Target language</b> <b>Mostly direct than indirect methods</b> <b>Intercultural components</b>	<b>Language acquisition is related to the aim to be fully employed in a labour market in Slovakia</b> Partially full or full curriculum Methodology of Slovak as a mother tongue Prime language Mostly indirect than direct methods Cultural components	

In the new design of language education – regarding needs of learners with minorities' teaching language – we focus on specifics of such education and according to that we modify teacher training in a minority environment. After analysing educational documents, dominating tendencies in a minority show the need to aim at methods and forms of teaching the Slovak language and literature that are typical for foreign language education. According to the fact, we will try to modify and accomodate new teaching materials in a teacher training programme.

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# TÜRKİYE’DE 1980-2012 DÖNEMİ EĞİTİM SAĞLIK İLİŞKİSİ: MAKİ EŞBÜTÜNLEŞME ANALİZİ

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## ÖZET

Bu çalışmada yapısal kırılmaları dikkate alan Kapetanios Birim Kök Testi ve Maki Eşbütünleşme Testi ile Vektör Hata Düzeltme Modeline dayalı Nedensellik Analizi kullanılarak 1980 – 2012 dönemi itibarıyla Türkiye için eğitim düzeyi ile sağlık harcamaları arasında bir ilişkinin olup olmadığı test edilmiştir. Yapılan ampirik uygulamalar sonucunda her iki serinin de seviyede durağan olmadığı, aralarında eşbütünleşme ilişkisi olduğu sonucuna ulaşılmıştır. Nedensellik analizi sonucunda ise değişkenler arasında eğitimden sağlığa tek yönlü nedensellik olduğu belirlenmiştir.

**Anahtar Kelimeler: Eğitim Endeksi, Sağlık Harcamaları, Kapetanios Birim Kök Testi, Maki Eşbütünleşme Testi**

## THE RELATIONSHIP BETWEEN EDUCATION AND HEALTH IN TURKEY THE PERIOD OF 1980-2012: MAKI COINTEGRATION ANALYSIS

## ABSTRACT

This study examines whether there is a relation between education index and government health expenditures for Turkey between 1980 and 2012 using the Kapetanios Unit Root Test based on structural breaks, the Maki Cointegration Test and Causality Analysis based on Vector Error Correction Model. Empirical practices in the study showed that neither series were stationary in level and there is long-term relation between them. As a result of the causality analysis, unidirectional causality was determined from education to health.

**Key Words: Education Index, Health Expenditures, Kapetanios Unit Root Test, Maki Cointegration Test**

## GİRİŞ

Eğitim kişilerin ve bir bütün olarak toplumun sağlık konusundaki davranış ve tutumu üzerinde farklı kanallar vasıtasıyla pozitif etkiler ortaya çıkarmaktadır. Kişilerin yaşam beklenti düzeylerinin artmasına, sağlığa zararlı madde kullanımı alışkanlığını azaltarak, fiziksel sağlığın korunmasına katkı sağlayarak, obezite riskini azaltarak, akıl ve ruh (zihinsel) sağlığının korunmasına katkı yaparak, bulaşıcı hastalıklara karşı duyarlılık ve düzenli spor yapma alışkanlığı gibi diğer birçok unsuru da

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etkileyerek, ölüm oranlarını azaltarak ve doğuştan beklenen yaşam süresinin artmasına katkı sağlayarak (Yardımcıoğlu, 2013: 51).

Ayrıca eğitim, ekonomik faktörlerdeki iyileşmeye katkısı yoluyla da sağlık üzerinde olumlu dışsallıklar ortaya çıkarmaktadır. Benzer bir şekilde sağlık da eğitim üzerinde olumlu etkilere sahiptir. Eğitim ve sağlık arasındaki bu karşılıklı pozitif ilişki kişinin beşeri sermaye birikimine katkı yapmakta, bu ise ekonomik büyüme, kalkınma, gelir dağılımı, ekonomik etkinlik, sosyal refah ve diğer birçok unsuru etkilemektedir (Yardımcıoğlu, 2013: 51).

Literatürde kalkınma carileri içinde gösterilen eğitim ve sağlık hizmetleri ve harcamaları bireyin beşeri sermaye birikiminin artmasına katkı yaparak toplam faktör verimliliği ve ekonomik büyümeyi artıran faktörlerdir. Aynı zamanda bireyin verimliliği artırmakta olan bu hizmetler gelir dağılımı üzerinde de pozitif etkiler meydana getirmektedir. Dolayısıyla eğitim ve sağlık hizmetleri ve harcamaları hem mikro açıdan hem de makro açıdan önemli birer unsurdur (Yardımcıoğlu, 2013: 50).

Feinstein ve diğ., (2006 : 173)'ne göre kişilerin sağlık konusundaki tutum ve davranışları üzerinde ortaya çıkardığı etki eğitimin sağlık üzerindeki en güçlü etkilerinin başında gelmektedir. Bireyin sağlık konusundaki tutum ve davranışlarını pozitif anlamda etkileyen eğitim, bireyin kendisi ve ailesi ile ilgili sağlık konusunda daha iyi seçimler yapmasına etki etmektedir. Eğitim harcamalarının artması kişilerin kişinin sağlıklı beslenmeye ilişkin davranış değişikliği, düzenli olarak spor aktiviteleri yapması, sigara ve alkol tüketimi azaltması gibi davranış kalıplarının değişmesine sebep olarak daha sağlıklı hale getirecek davranışlara yönlendirecektir (RWJF, 2009: 5).

Literatürdeki birçok çalışmada eğitim seviyesi ile sağlıklı yaşam tercihi arasında doğrusal bir ilişki olduğu sonucu vurgulanmaktadır. Bu sonucun ortaya çıkmasındaki en önemli neden olarak eğitimin, kişilerin sağlıklı yaşam ve sonuçlarına ilişkin bakış açısını geliştirerek kişilerin daha iyi bir yaşam tarzı seçmesine yaptığı katkı gösterilmektedir. Sağlıkla ilgili kişinin sahip olduğu bilgi ve eğitim düzeyinin artması uyuşturucu, sigara ve içki gibi zararlı madde kullanma oranlarını azaltmaktadır (Kenkel, 1991: 288; Johnston, 2004: 9). Kısaca, eğitim ile sağlığa zararlı madde kullanımı alışkanlığı arasında negatif bir ilişki vardır (Johnston, 2004: 9).

Bireylerin sağlıklı beslenme alışkanlıkları üzerinde de etkili olan eğitim Obezite riskinin azalmasına da katkı sağlamaktadır (Yardımcıoğlu, 2013: 52). Bireyin verimliliğini olumsuz etkileyen obezite, bireyin milli gelirden daha az pay almasını beraberinde getirebilmektedir. Bir ülkede obezitenin artması ise toplam faktör verimliliği ve gelir dağılımı üzerinde olumsuz etkiler meydana getirebilecektir. Yapılan birçok çalışmada eğitimin, fiziksel sağlığın korunması ve obezite riskini azaltmaya yönelik etkileri olduğu sonucuna ulaşılmıştır (Yardımcıoğlu, 2012: 130).

Eğitimin bir diğer faydası kişinin fiziksel sağlığının yanı sıra akıl ve ruh (zihinsel) sağlığına yaptığı katkıdır (Johnston, 2004: 10). Stresi azaltarak sağlık üzerinde olumlu etkiler meydana getiren eğitim (Lochner, 2011: 49) bireyin bireyin verimliliğine etki etmekte, dolayısıyla da toplam faktör verimliliği bağlamında ekonomik büyüme ve gelir dağılımı üzerinde pozitif etkiler meydana getirmektedir.

Eğitim bulaşıcı hastalıklara karşı duyarlılığı artıran önemli bir unsurdur. Kişinin bulaşıcı hastalıklara karşı duyarlılığının artması, bu hastalıklara yakalanma riskini ortadan kaldırarak kişinin beşeri sermaye birikiminden ekonominin ve toplumun daha etkin bir şekilde faydalanabilmesine de katkı sağlamaktadır. Yapılan birçok çalışmada eğitimin bulaşıcı hastalıklara karşı duyarlılığın artmasına katkısı olduğunu sonucuna ulaşıldığı (Yardımcıoğlu, 2012: 131) görülmektedir.

Sağlıklı yaşamın en önemli koşullarından bir diğeri ise kişinin düzenli bir spor alışkanlığına sahip olmasıdır (Yardımcıoğlu, 2012: 131). Kenkel (1991: 288) eğitim düzeyinin artmasının bireyin spor yapma alışkanlığını artırdığı belirtmektedir. Fiziksel olarak aktif insanlara nazaran fiziksel aktivitesi az olan insanlar hastanelerde daha fazla zaman harcamakta ve daha fazla sağlık hizmetlerinden

yararlanmaktadır. Aktif olmamanın sağlık sistemi üzerindeki, ekonomik büyüme ve gelir dağılımı üzerindeki sosyal maliyeti ise oldukça önemlidir. Birçok uygulamalı çalışmanın sonuçları düzenli spor yapan bireylerin diğerlerine oranla daha sağlıklı ve uzun bir ömür yaşadıklarını göstermektedir. (Yardımcıoğlu, 2013: 54).

Eğitimin sağlık üzerinde ortaya çıkardığı pozitif etkiler bireyin ortalama yaşam süresini uzatan unsurlar olarak değerlendirilebilir. Ortalama yaşam süresinin uzamasının bireyin beşeri sermaye birikiminden yararlanma süresini arttığı dikkate alındığında eğitimin ekonomik büyüme ve gelir dağılımı [gibi makro ekonomik değişkenler] üzerindeki önemi daha fazla ön plana çıkmaktadır (Yardımcıoğlu, 2012: 132).

Bu çalışmanın temel hipotezi eğitim ve sağlık arasında uzun dönemli karşılıklı bir ilişkinin olduğudur. Bu kapsamda çalışmada Türkiye özelinde eğitim ve sağlık arasındaki ilişkinin ve bu ilişkinin yönünün ve boyutunun ortaya konulması amaçlanmaktadır. Eğitim ve sağlık arasındaki ilişki, yapılmış olan çalışmalar da özetlenerek ortaya konulduktan sonra 1980-2012 dönemine ilişkin Türkiye’de eğitim ve sağlık ilişkisi Maki Eşbütünleşme testi ile araştırılmıştır. Daha sonra eğitim ve sağlık arasındaki ilişkinin katsayıları FMOLS yöntemi ile tahmin edilmiş ve son olarak nedensellik ilişkisi VECM yöntemi ile belirlenmiştir.

Çalışmada kullanılan yöntemlerden Maki eşbütünleşme analizinin literatürde bu alanla ilgili yapılmış çalışmalarda daha önce kullanılmadığı görülmüştür. Bu açıdan çalışma özellikle kullanılan bu yöntemler bakımından daha önce yapılmış olan çalışmalardan farklılık arz etmektedir. Ayrıca incelenen dönemin genişliği bakımından da literatürdeki diğer çalışmalardan ayrılmaktadır. Bu nedenle elde edilen sonuçların literatüre katkı sağlayacağı düşünülmektedir.

### **Literatür Taraması**

Literatür incelendiğinde yapılan birçok uygulamalı çalışmada eğitimin sağlık üzerinde farklı kanallarla pozitif etkilerinin olduğu sonucuna ulaşılmıştır.

- Kenkel (1991: 302), Baum vd. (2010: 27), Lantz ve diğ., (1998), Walque (2007), Grimard ve Parent (2007), Brunello ve diğ., (2011), Fagan ve diğ. (2005), Tenn ve diğ. (2010), HÜ (2009: 57) yapmış oldukları çalışmalarda eğitimin zararlı madde kullanımı alışkanlığını azalttığını göstermektedir. Kenkel (1991: 302) ve Baum vd. (2010: 27) yapmış oldukları araştırmalarda yüksek eğitilmiş insanların daha az eğitim almış insanlara nazaran daha az sigara ve içki tükettiklerini belirtmektedirler.
- (Baum vd. 2010: 29), Martin ve diğ. (2008), Moreira ve Padrao (2006), Lantz ve diğ., (1998) yapmış oldukları çalışmada eğitimin obezite riskini azalttığı sonucuna ulaşmışlardır.
- Parsons ve Bynner (1998), Dench ve Regan yapmış oldukları çalışmalarda eğitimin bireyin akıl ve ruh (zihinsel) sağlığının korunmasına yönelik olumlu etkileri olduğu sonucuna ulaşmışlardır.
- Vandemoortele ve Delamonica (2000: 7,8), UNESCO (2011: 26), Walque (2004: 15) çalışmalarında eğitimin bulaşıcı hastalıklara yakalanma riskini azalttığı sonucunu belirtmektedirler.
- Lantz ve diğ., (1998), Kenkel (1991: 302), Feinstein (2002: 8), Leigh ve Dhir (1997), Tatar ve diğ. (2009), Brunello ve diğ., (2011) çalışmalarında eğitimin bireyin fiziksel aktivite yapmasına daha fazla katkı sağladığı sonucunu belirtmektedir.
- Sorlie ve diğ., (1995: 949), Lleras-Muney (2005), Lantz ve diğ., (1998), Oreopoulos (2003: 18), Bour (2003), Kravdal (2008), UNESCO (2011: 18), Albouy ve Lequien (2009), Yardımcıoğlu (2013) çalışmalarında eğitim seviyesi ve gelir seviyesi düşüklüğü ile ölüm oranlarının fazlalığı arasında bir ilişki olduğunu belirtmektedirler.

Lantz ve diğ., (1998) ABD özelinde yaptıkları çalışmada ise gelir seviyesi düşük olan kişilerin sigara içme oranının fazla olduğunu belirtmektedirler. Walque (2007) eğitimin kişilerin sigara içme kararlarını etkilediğini, eğitilmiş bireylerin eğitimsiz bireylere nazaran sigara içme eğilimlerinin daha az olduğunu ve sigaraya başlamış bireylerin ise sigarayı bırakma eğilimlerinin daha yüksek olduğunu, Grimard ve Parent (2007) eğitime katılım oranının artmasının sigara içme alışkanlığını azalttığını, Brunello ve diğ., (2011) 12 AB ülkesi üzerinde yapmış oldukları çalışmada eğitimin sigara içme, alkol kullanma tutum ve davranışlarını azalttığını belirtmektedir. Fagan ve diğ. (2005) ABD özelinde yapmış oldukları çalışmalarında ailelerin eğitim seviyeleri ile bu ailelerin çocuklarının sigara içme oranları arasındaki ilişkiyi araştırmışlar ve düşük eğitime sahip olan ailelerin (blue-collar) çocuklarının eğitim seviyesi yüksek olan ailelerin (white-collar) çocuklarına nazaran sigara içmeye daha eğilimli oldukları sonucuna ulaşmışlardır. Çok az da olsa bazı çalışmalarda eğitim ve sigara içme alışkanlığı arasında herhangi bir ilişki bulunmayan çalışmalar da mevcuttur. Tenn ve diğ. (2010) ABD özelinde yapmış oldukları çalışmada eğitim ile sigara içme davranışı arasında herhangi anlamlı bir ilişki bulunamamıştır. Türkiye için yapılmış bir çalışma ise kadınlar arasında eğitim arttıkça sigara içme oranının arttığını göstermektedir. Benzer şekilde yüksek refah düzeyindeki kadınlar düşük düzeylere göre daha fazla sigara kullanmaktadırlar (HÜ, 2009: 57).

ABD’de yapılan bir çalışmada her yaş gurubunda kolej eğitimi almış bireylerin daha alt seviyede eğitim almış olan bireylere göre daha az obez olduğu sonucuna ulaşılmıştır. Bu çalışmaya göre eğitim seviyesi yüksek yetişkinlerin yanında yetişen çocukların diğer çocuklara nazaran obez olma ihtimalleri de azalmakta, obezitenin yetişkinler arasında görülme sıklığı eğitim seviyesi yüksek olan kişilerde azalırken, eğitim seviyesi daha düşük olan kişiler arasında ise artmaktadır. Çalışmada çocuklarda obezite görülme oranının ailenin eğitimi ile ilişkili olduğu belirtilmektedir. (Baum vd. 2010: 29) Martin ve diğ. (2008) İspanya özelinde yapmış oldukları çalışmada obezitenin düşük eğitim seviyesi ile ilişkili olduğunu belirtmektedirler. Moreira ve Padrao (2006) Portekiz özelinde yapmış oldukları çalışmalarında eğitime katılım oranının artmasının obez olma riskini azalttığını belirtmektedirler. Benzer şekilde Lantz ve diğ., (1998) eğitim ve gelir seviyesi düşük olan kişilerin sigara içme oranının fazla olmasının yanı sıra obez olma ihtimallerinin de fazla olduğunu belirtmektedirler. Buradan da görüldüğü gibi eğitim düzeyinin artmasıyla birlikte obezite riskinin azaldığı söylenebilir. (Yardımcıoğlu, 2012: 130).

Yapılan birçok çalışmada eğitimin akıl ve ruh (zihinsel) sağlığının korunmasına yönelik olumlu etkileri olduğu sonucuna ulaşılmıştır. Parsons ve Bynner (1998) okuryazarlık oranı düşük olan bayanların % 36’sı ve erkeklerin % 18’inin depresyon problemi yaşadığını, bu oranların okuryazarlık düzeyi yüksek olan kişilerde sırasıyla % 7 ve % 6 olarak gerçekleştiğini belirtmektedir. (Feinstein ve diğ., 2006: 241) Dench ve Regan İngiltere’de yaptıkları araştırmada kişilerin % 80’inin psikolojik sağlıkları/refahları üzerinde eğitimin olumlu etkiler ortaya çıkardığını belirtmektedirler (Feinstein, 2002: 8).

Vandemoortele ve Delamonica (2000: 7,8) 32 ülke ile ilgili yapmış oldukları çalışmada hemen hemen okuma yazması olmayan (illiterate) her iki kadından birinin, HIV/AIDS ile ilgili temel gerçekleri göz ardı ettiğini belirtmektedir. Bu kadınların AIDS hakkındaki bilgi seviyesi eksiklikleri ilköğretim sonrası eğitim almış olan bayanlardan beş kat daha fazladır. Ayrıca okuma yazması olmayan kadınların AIDS’ten korunmanın mümkün olmadığına karşı inançları eğitilmiş olanlara göre dört kat daha fazladır. Ayrıca eğitimsiz kadınların AIDS’in anneden çocuğa bulaştığını eğitilmiş olanlara göre üç kat daha fazla oranda bilmedikleri tespit edilmiştir. Malawi’de eğitimsiz olan kadınların % 27’si hamilelik döneminde ilaç alınarak HIV bulaşma ihtimalinin azaldığını bilirken, lise ve dengi eğitime sahip olan kadınlar arasında bunu bilenlerin oranı % 59’a yükselmektedir. (UNESCO, 2011: 26) Zambiya’da

yapılan diğer bir çalışmada ise eğitimsiz kızlar arasında AIDS'in iki kat daha hızlı yayıldığı, sıtma gibi hastalıkların da yayılma ve bulaşma ihtimali eğitim düzeyi düştükçe arttığı belirtilmektedir (Vandemoortele ve Delamonica, 2000). Uganda'da yapılan bir çalışmada ise kızlar için yapılan bir yıllık eğitim artışının bu kızların HIV virüsü ile temasa geçmelerini yüzde 6,7 oranında azalttığı tespit edilmiştir (Walque, 2004: 15).

Lantz ve diğ., (1998) çalışmalarında eğitim ve gelir seviyesi düşük olan kişilerin fiziksel aktivitelere daha az önem veren kişiler olduğunu belirtmektedirler. Kenkel (1991: 302) yapmış olduğu araştırmada yüksek eğitilmiş insanların daha az eğitim almış insanlara nazaran daha fazla spor yaparak sağlıklarına daha fazla dikkat ettiklerini belirtmektedir. İngiltere ile ilgili yapılan bir araştırmada eğitim seviyesi yüksek olan kadın ve erkeklerin düzenli ve etkin spor yaptığı ve bunun sigara içme ihtimalini yarı yarıya azalttığı ve fazla kilolu olma ihtimalini de yüzde 20 azalttığı belirtilmektedir (Feinstein, 2002: 8). Leigh ve Dhir (1997) ABD özelinde yaptıkları çalışmada okullaşma oranları ve spor yapma arasında güçlü bir ilişki bulmuşlardır. Tatar ve diğ. (2009) Türkiye özelinde yapmış olduğu çalışmalarında eğitim seviyesi yüksek olan kadınların daha çok spor yaptığı sonucuna ulaşmışlardır. Brunello ve diğ., (2011) 12 AB ülkesi üzerinde yapmış oldukları çalışmada eğitimin kişinin spor yapma davranışlarını olumlu etkilediğini belirtmektedirler.

Sorlie ve diğ., (1995: 949) yapmış oldukları çalışmada eğitim seviyesi ve gelir seviyesi düşüklüğü ile ölüm oranlarının fazlalığı arasında bir ilişki bulmuşlardır. Yazarlar eğitim seviyesi yükseldikçe hem kadınlarda hem de erkeklerde ölüm oranlarının azaldığını belirtmektedirler. Yazarlara göre gelir ve eğitim seviyesinin ölüm oranlarını azaltması; kişinin sağlık hizmetlerini satın alma gücü, sağlıkla ilgili alışkanlıkları ve davranışları ve eğitimin sağladığı bilgi ve bilinç düzeyindeki artışla ilişkilendirilebilir. Çalışma sonuçları yoksul bireylerin eğitim seviyesi düşük, sağlık yardımına en fazla ihtiyaç duyan, bakıma ve korunmaya muhtaç bireyler olduğunu göstermektedir (Sorlie ve diğ., 1995: 954). Lleras-Muney (2005) ABD özelinde yapmış olduğu çalışmada bir yıllık ilave eğitimin gelecek 10 yılda ölüm oranı ihtimalini yüzde 3.6 oranında azalttığını belirtmektedir. Ayrıca yazar bir yıllık ilave zorunlu eğitim artışının 35 yaşından sonra ölüm oranını yüzde 3 oranında azalttığını, yaşam beklenti düzeyini ise 1.7 yıl kadar artırdığını söylemektedir. Lantz ve diğ., (1998) çalışmalarında eğitim ve gelir seviyesi düşük olan kişilerin ölüm oranının yüksek olduğunu belirtmektedirler. Oreopoulos (2003: 18) yapmış olduğu hesaplamada ABD zorunlu eğitim seviyesinin 1 yıl artırılmasının maluliyet/özürlülük (disability) oranını % 1.7 oranında düşüreceğini, bir yıllık okullaşma oranındaki artışın ise İngiltere'de sağlıklı bir birey olma oranını % 3.2 oranında azaltacağını ve sağlıklı bir birey olma oranını ise % 6 oranında artıracağını belirtmektedir. Bour (2003) Gana üzerine yapmış olduğu çalışmada annenin eğitim seviyesinin artması ile çocuk ölüm oranlarının azalması, anne eğitim seviyesinin düşmesi ile çocuk ölüm oranlarının artması arasında bir ilişki olduğu sonucuna ulaşmıştır. Kravdal (2008) 1980-2003 yıllarını kapsayan ve 1950-1973 yıllarında doğan Norveç vatandaşı bayan ve erkekler üzerine yapmış olduğu çalışmada eğitilmiş eşler arasındaki ölüm oranının eğitimsiz eşler arasındaki ölüm oranlarından daha az olduğunu belirtmektedir. Ayrıca yazar ailelerin eğitimi ile bu ailelerdeki çocuk ölüm oranları arasında ters ilişkili olduğunu belirtmektedir. Aşağı Sahra Afrika'da (Sub-Saharan Africa) 2008 yılında anneleri en az lise ve dengi eğitime sahip olan çocuklardan 1,8 milyon çocuğun hayatının kurtarıldığı belirtilmektedir.(UNESCO, 2011: 18). Çok az çalışmada ise eğitim ile ölüm oranları arasında herhangi bir ilişki olmadığı sonucuna ulaşılmıştır. Albouy ve Lequien (2009) tarafından Fransa özelinde yapılan çalışmada ölüm oranları ile eğitim arasında herhangi bir ilişkinin olmadığı sonucuna ulaşılmıştır.

Eğitim bazı ekonomik kanallar vasıtası ile de sağlık üzerinde olumlu dışsallıklar ortaya çıkarmaktadır. Eğitim seviyesinin yüksek olması, istihdam edilme ve daha yüksek gelir düzeyinde iş bulabilme imkânını artırmaktadır (Feinstein, 2002: 7; RWJF, 2009: 6). Ayrıca daha iyi çalışma şartlarına sahip olmayı da etkileyerek (RWJF, 2009: 6) ekonomik faktörlerde iyileşmeler ortaya çıkararak sağlığı



dolaylı olarak etkilemektedir (Feinstein, 2002: 7). Özellikle eğitim tarafından etkilenen gelirin, sağlık üzerinde etkili olan önemli faktörlerden biri olduğu belirtilmektedir (Feinstein ve diğ., 2006: 173; Lochner, 2011: 49). Bu bağlamda değerlendirildiğinde eğitim seviyesi yüksek olan [bireylerin] gelirleri de yüksek olduğu için sağlıkla ilgili harcamalara daha fazla kaynak ayırabilirler (Currie ve Moretti, 2003: 1496; Murray, 2007: 7; RWJF, 2009: 5; Lochner, 2011: 49). Gelir seviyesi artan bireyler ailelerini daha sağlıklı besleyebilirler ve daha iyi koşullarda yaşatabilirler. Ayrıca istedikleri zaman hem kendileri hem aileleri için daha iyi sağlık hizmeti de satın alarak (Feinstein, 2002: 7; RWJF, 2009: 7) yaşam koşulları daha güvenli ve düzgün bir çevrede ve daha az stres altında yaşayabilirler (RWJF, 2009: 7).

Eğitim seviyesi kişinin çalışma ortamını da etkilemektedir. Resmi eğitim almamış çalışanların büyük çoğunluğu hem maaş hem çalışma ortamı hem de iş güvenliği (hayati tehlike risk ve yaralanma ihtimali) anlamında eğitilmiş kişilere nazaran daha kötü durumlarda çalışmaktadırlar. Bunun yanı sıra eğitim seviyesi düşük olan işçilerin çalıştıkları işlerde psikolojik anlamda stres içerisinde bulunmaları da söz konusu olmaktadır (RWJF, 2009: 7). Eğitim düzeyi düşük çalışanlar [gelir düzeylerinin düşük olmasına paralel olarak] hastalık ödemesi, kişisel bakım, işyerinin iyileştirilmesine ilişkin programlar, çocuk ve yetişkin bakım hizmetleri, emeklilik ile ilgili tahsisat, imkan ve fırsatlardan daha az yararlanmaktadırlar. İşverenler bu kişiler için daha az işsizlik yardımı payı ödedikleri için sosyal güvenlik ve sağlıkla ilgili diğer faydalardan da daha az yararlanmaktadır (RWJF, 2009: 7). Tüm bu etkenler toplu olarak değerlendirildiğinde kişilerin istihdam imkânlarının artmasının, çalışma ortamının iyileştirilmesinin, çalıştıkları işlerde psikolojik anlamda stres içerisinde olmamalarının kişisel verimliliğe, dolaylı olarak da ekonomik büyümeye (Yardımcıoğlu, 2012: 134) ve yaşam beklenti düzeylerinin artmasına pozitif katkılar sağlayacağı belirtilebilir.

Yukarıda ayrıntılı olarak belirtildiği gibi eğitim ve sağlık arasında karşılıklı bir ilişki söz konusudur. Eğitime yönelik yatırımlar sağlığa yapılan yatırımların geri dönüş oranını artırırken, sağlığa yönelik yapılan yatırımlar da eğitime yapılan yatırımların geri dönüş oranlarını artırmaktadır. Bireyin sağlıklı olması okula devam etmede ve öğrenme sürecinde etkili bir faktördür. Bunun yanı sıra sağlıklı insanların yaşam süresi arttığı için bu kişilerin eğitime yönelik yapılan yatırımların da etki süresi artmaktadır. Birçok sağlık programının öğrenilmesinde temel eğitime sahip olmak önemlidir, sağlık personelinin eğitimi de dikkate alındığında eğitim yatırımları benzer şekilde sağlık yatırımlarının geri dönüş oranlarını artırmaktadır. (Sab ve Smith, 2001: 7) Sab ve Smith (2001) eğitim yatırımları ile sağlık arasında sıkı bir ilişki olduğunu ve okullaşma oranları ile yaşam beklenti süresi ve doğumda hayatta kalma arasında koşulsuz bir yakınsama olduğunu belirtmektedirler. Ayrıca yazarlar beşeri sermaye birikiminin yaşam beklenti süresini etkilediğini ve de sağlıklı bir çocuğun okulda daha başarılı olduğunu, aynı zamanda eğitim seviyesi yüksek bir bireyin de okulda edindiği bilgiler dolayısıyla sağlığına daha fazla dikkat ettiğini belirtmektedirler. Peters ve diğ. (2010), Gana örneğinde yaptıkları çalışmada sağlığı korumaya ilişkin kişilerin davranışlarının eğitim seviyesi ile paralellik taşıdığı sonucuna ulaşmışlardır. Yazarlara göre eğitim seviyesi yüksek olan bireyler sağlıklarına daha fazla önem göstermektedirler.

Yardımcıoğlu (2013) tarafından seçilmiş 25 OECD ülkesi üzerinde, 1975-2008 dönemi için eğitim harcamaları ve sağlık (yaşam beklenti düzeyi) arasındaki uzun dönemli ilişkinin araştırıldığı çalışmada her iki değişkenin uzun dönemde eşbütünleşme ilişkisine sahip olduğu sonucuna ulaşılmıştır. Yazar yapmış olduğu panel nedensellik analizinde kısa dönemde sağlıktan eğitim harcamalarına doğru tek yönlü bir nedensellik, uzun dönemde eğitim harcamaları ve sağlık arasında çift yönlü uzun dönemli nedensellik ilişkisi olduğu sonucuna ulaşmıştır. Yardımcıoğlu tarafından yapılan çalışmada eğitim harcamaları ve sağlık değişkenleri arasında uzun dönemde karşılıklı olarak anlamlı bir ilişkinin olduğu belirtilmektedir.

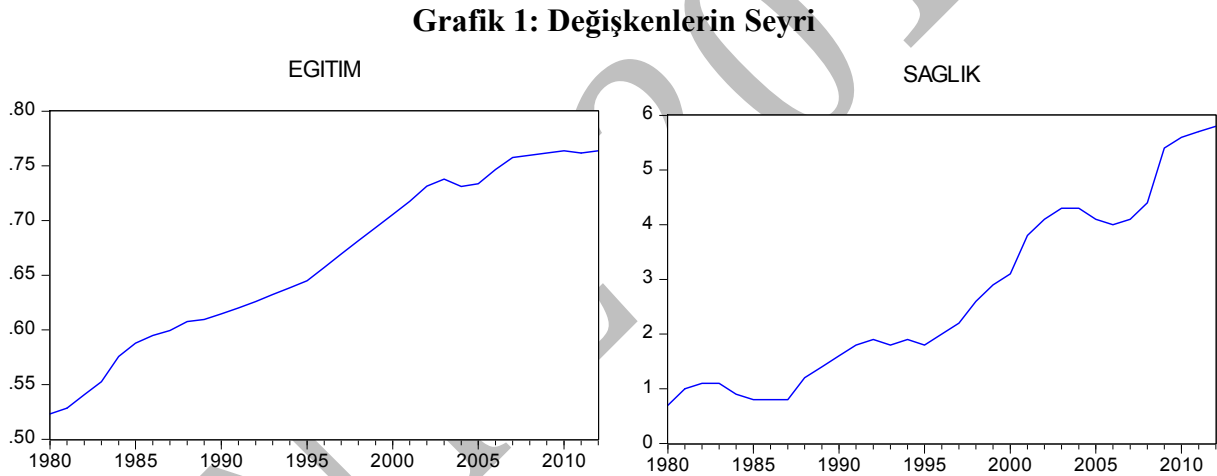
Ayrıca eğitim düzeyi yüksek olan kişilerin sağlıklarına daha fazla önem vermeleri dolayısıyla kamu ekonomisi tarafından kendilerine sunulan sağlık hizmetlerinden yararlanma oranları da artmaktadır. (Yardımcıoğlu, 2012: 134). Eğitimin ortaya çıkardığı tüm bu olumlu dışsallıklar birlikte değerlendirildiğinde eğitimin kişinin yaşam beklenti düzeyini artıracaktır. Benzer şekilde sağlıklı bireylerin ise sunulacak eğitim hizmetlerinden daha etkin yararlanmaları mümkün olacaktır.

### Ekonometrik Uygulama

Bu kısımda ilk olarak makalede kullanılan veri seti ile ilgili bilgiler verilecek, daha sonra kullanılan ekonometrik yöntem tanıtılacak ve son olarak da sonuçların değerlendirilmesi yapılacaktır.

### Veri Seti ve Yöntem

Çalışmada, 1980-2012 dönemine ait *eğitim endeksi (EGITIM)* ve *sağlık harcamalarının GSMH'ya oranı (SAGLIK)* veri setleri kullanılmıştır. *EGITIM* veri seti, United Nations Development Programme tarafından hazırlanan Human Development Report'tan, *SAGLIK* veri seti ise OECD Statistics'ten elde edilmiştir. Değişkenlerin seyri görsel olarak Grafik 1'de sunulmuştur.



Ekonometrik analiz öncesinde çalışmada kullanılacak değişkenlerin birim kök içerip içermediği test edilecek daha sonra değişkenlerin uzun dönemde birlikte hareket edip etmediğini belirleyebilmek amacıyla eşbütünleşme testi uygulanacak ve değişkenler arasındaki nedensellik ilişkisinin varlığı ve yönünü tespit etmek için nedensellik analizi yapılacaktır. Ampirik uygulamanın ele alındığı 1980-2012 döneminde ekonomik ve siyasi değişikliklerin yaşandığı gerçeğinden hareketle analizde yapısal kırılmaları dikkate alan yeni testler uygulanacaktır.

### Kapetanios Birim Kök Testi ve Sonuçları

Kapetanios (2005), temel hipotezi serinin birim kök içerdiği, alternatif hipotezi ise serinin m kırılmalı ancak durağan olduğu yeni bir birim kök testi geliştirmiştir. Bu testte diğer yapısal kırılmalı birim kök testlerinden farklı olarak kırılma sayısının önceden belirlenme zorunluluğu bulunmamaktadır. Uygun kırılma sayısının içsel olarak belirlendiği bu testte

sadece maksimum kırılma sayısı tespit edilerek analiz yapılacaktır (Yılancı, 2013:103). Bu testte kullanılan model şu şekildedir:

$$y_t = \mu_0 + \mu_1 t + \alpha y_{t-1} + \sum_{i=1}^p \delta_i \Delta y_{t-i} + \sum_{i=1}^m \phi_i DU_{i,t} + \sum_{i=1}^m \varphi_i DT_{i,t} + e_t$$

$$DU_{i,t} = \begin{cases} 1 & t \geq TB \text{ iken} \\ 0 & \text{diğer durumlarda.} \end{cases}$$

$$DT_{i,t} = \begin{cases} t-TB & t \geq TB \text{ iken} \\ 0 & \text{diğer durumlarda.} \end{cases}$$

Testin hipotezleri:

$$H_0 : \alpha = 1$$

$$H_a : \alpha < 1 \text{ şeklindedir (Kapetanios, 2005:124).}$$

Testin işleyişi aşağıdaki gibi özetlenebilir (Yılancı, 2013:104):

- Belirli bir kırılma sayısı için öncelikle tek kırılma tüm örnek boyunca aranır ve  $H_0$  hipotezinin t-istatistikleri elde edilir.
- Kalıntı kareler toplamının (KKT) minimum olduğu model ile ilgili yapısal kırılma tarihi seçilir.
- Tahmin edilmiş ilk kırılma tarihi modele eklenerek geri kalan parçalar arasında ikinci yapısal kırılma tarihi aranır,  $\alpha = 1$  için t-istatistikleri hesaplanır ve kırılma tarihi yine minimum KKT bulunarak belirlenir. Bu aşama m kırılma sayısı elde edilene kadar devam ettirilir.
- Uygun kırılma sayısı minimum t-istatistiğini veren kırılma sayısıdır.

Modele ait kalıntı kareler toplamı şu şekilde hesaplanır (Kapetanios, 2005:127):

$$KKT = \sum_{t=k+2}^T \left( y_t - \hat{\mu}_0 - \hat{\mu}_1 t + \hat{\alpha} y_{t-1} + \sum_{i=1}^p \hat{\delta}_i \Delta y_{t-i} + \hat{\phi}_1 DU_{1,t} + \hat{\varphi}_1 DT_{1,t} \right)^2$$

Uygulamada maksimum gecikme sayısı Schwert (1988)'in geliştirdiği  $k = 12x(T/100)^{0.25}$  formülü kullanılarak belirlenmiştir. Bu formülde  $k$  maksimum gecikme uzunluğunu,  $T$  ise gözlem sayısını ifade etmektedir. Kapetanios birim kök testi sabitte ve eğimde kırılmayı dikkate alan Model C/S (rejim değişikliği) için uygulanmıştır. Kapetanios birim kök testi sonuçlarına göre t istatistiğinin minimum olduğu değer uygun kırılma sayısını vermektedir.

**Tablo 1: Kapetanios Birim Kök Testi Sonuçları<sup>10</sup>**

EGITIM			SAGLIK	
Kırılma Sayısı	t-ist.	KIRILMA TARİHİ	t-ist.	KIRILMA TARİHİ
5	-3.42	1983-1989-1993-2004-2008	-5.89	1986-1990-1994-2000-2008
4	-3.78	1989-1993-2004-2008	-7.68	1986-1990-1994-2000
3	-3.83	1989-1993-2004	-7.63	1986-1990-2000
2	-5.05	1989-2004	-7.92	1990-2000
1	-4.82	2004	-6.33	21

Not: Kritik değerler kırılma sayısına göre, Kapetanios (2005)'ten elde edilmiştir. Uygun gecikme uzunluğu Schwarz bilgi kriterine göre belirlenmiştir.

*EGITIM* serisi için uygun kırılma sayısı beştir (t-ist. minimum olduğu kırılma) ve kırılma tarihleri 1983, 1989, 1993, 2004 ve 2008'dir. Test istatistiği tüm anlam düzeylerinde mutlak değerce kritik değerlerden küçük olduğundan serinin birim kök içerdiğini ifade eden temel hipotez reddedilemez.

*SAGLIK* serisi için uygun kırılma sayısı beş olarak belirlenmiş ve kırılma tarihleri ise 1986, 1990, 1994, 2000 ve 2008'dir. Test istatistiği tüm anlam düzeylerinde mutlak değerce kritik değerlerden küçük olduğundan serinin birim kök içerdiğini ifade eden temel hipotez reddedilemez.

Dolayısıyla Tablo 1 sonuçlarına göre, *EGITIM* ve *SAGLIK* serileri birinci farklarında durağandır. Ayrıca her iki veri setinde küresel krizden kaynaklı 2008 yılında kırılma gerçekleşmiştir.

#### **Maki Eşbütünleşme Testi ve Sonuçları**

Maki (2012) geliştirdiği eşbütünleşme testi ile, beş taneye kadar yapısal kırılmanın varlığı durumunda, seriler arasında eşbütünleşme ilişkisinin varlığını test edebilmektedir.

Maki tarafından geliştirilen testte, yapısal kırılma noktaları, içsel olarak belirlenmiştir. Geliştirilen testte her bir dönem, muhtemel bir kırılma noktası olarak kabul edilir, t istatistikleri hesaplanmakta ve t istatistiğinin minimum olduğu noktalar, kırılma noktası olarak kabul edilmektedir. Oluşturulan veri setinin analiz edilmesi sonucu, analiz döneminde ortaya çıkan eşbütünleşme denkleminde üç ve daha fazla yapısal kırılmanın varlığı halinde, bu yöntem, diğer eşbütünleşme testlerinden daha üstün bir test olarak kullanılabilir (Maki, 2012: 2011). Maki modelinde, dört tane test modeli formüle etmiştir:

Model 0: Sabit terimde kırılmanın var olduğu, trendsiz model;

$$y_t = \mu + \sum_{i=1}^k \mu_i K_{i,t} + \beta x_t + u_t$$

Model 1: Sabit terimde ve eğimde kırılmanın var olduğu, trendsiz model;

<sup>10</sup> Kapetanios Birim Kök Testi sonuçları Matlab R2009a ekonometri paket programı kullanılarak elde edilmiştir.

$$y_t = \mu + \sum_{i=1}^k \mu_i K_{i,t} + \beta x_t + \sum_{i=1}^k \beta_i x_t K_{i,t} + u_t$$

Model 2: Sabit terimde ve eğimde kırılmanın var olduğu, trendli model;

$$y_t = \mu + \sum_{i=1}^k \mu_i K_{i,t} + \gamma t + \beta x_t + \sum_{i=1}^k \beta_i x_t K_{i,t} + u_t$$

Model 3: Sabit terimde, eğimde ve trendde kırılmanın var olduğu model;

$$y_t = \mu + \sum_{i=1}^k \mu_i K_{i,t} + \gamma t + \sum_{i=1}^k \gamma_i t K_{i,t} + \beta x_t + \sum_{i=1}^k \beta_i x_t K_{i,t} + u_t$$

Maki testinin hipotezleri aşağıdaki gibi ifade edilebilir;

$H_0$ : Yapısal kırılmalar altında eşbütünleşme yoktur.

$H_1$ : Yapısal kırılmalar altında eşbütünleşme vardır.

Hipotezleri testi için gerekli olan kritik değerler, Monte Carlo simülasyonu ile hesaplanmış ve Maki (2012)'de yer almıştır. Hesaplanan değer, mutlak değer olarak kritik değerden büyük olduğunda,  $H_0$  hipotezi reddedilmekte ve seriler arasında eşbütünleşme ilişkisinin olduğu kabul edilmektedir (Maki, 2012: 2012).

Diğer taraftan Maki tarafından geliştirilen testin Türkiye gibi gelişmekte olan ülkeler için anlamlı bir test olduğu söylenebilir. Çünkü bu ülkeler, tarihsel olarak uzun vadeli siyasi veya ekonomik istikrarın tekrarlanmadığı, hatta bazı yıllar ekonomik olarak ani şok veya gelişmelerin, dolayısıyla da istatistiksel olarak kırılmaların meydana geldiği ülkeler olarak öne çıkmaktadır.

Maki Eşbütünleşme Testi, minimum test istatistikleri ve bunlara denk gelen kırılma dönemleri dört model için Tablo 2'de gösterilmektedir.

**Tablo 2: Maki Eşbütünleşme Testi Sonuçları**

Model 0	Model 1	Model 2	Model 3
-6.67***	-5.13	-6.68***	-10.53***
[-5.41]	[-5.70]	[-5.86]	[-7.55]
KIRILMA TARİHLERİ			
Model 0	Model 1	Model 2	Model 3
1986 - 2008	1985 - 2003	1991 - 2005	1986–1993–2003- 2007

**Not:** [ ] içindeki değerler, Maki (2012) Tablo 1’den alınmış, %1 anlamlılık düzeyine sahip kritik değerlerdir.

\*\*\* değişkenler arasında %1 anlamlılık düzeyinde eşbütünleşme olduğunu ifade etmektedir.

Tablo 2’den de görüldüğü üzere, Model 1 dışında diğer tüm modeller için değişkenler arasında, test istatistikleri kritik değerlerden büyük olduğu için, eşbütünleşme ilişkisi olduğu tespit edilmiştir.

Maki eşbütünleşme testi sonucunda değişkenler arasında eşbütünleşme ilişkisi tespit edildiği için FMOLS yöntemiyle uzun dönem katsayıları tahmin edilmiştir.

**Tablo 3: Eşbütünleşme İlişkisine Göre Uzun Dönem Katsayı Tahminleri**

	FMOLS	t istatistiği	Olasılık Değeri
EGİTİM → SAĞLIK	0.043915	10.29092	0.0000
SAĞLIK → EGİTİM	20.52402	10.21507	0.0000

Tablo 3’te, FMOLS yöntemiyle elde edilen uzun dönem katsayı tahminleri gösterilmektedir. Elde edilen bulgulara göre, sağlık harcamalarında meydana gelecek 1 birimlik artışın eğitim endeksini 0.04 birim artıracığı; eğitim endeksindeki 1 birimlik artışın sağlık harcamalarını 20.52 birim artıracığı sonucuna ulaşılmıştır. Ayrıca katsayı tahminine ilişkin t istatistiği anlamlı olduğundan katsayı tahminin güvenilir sonuç verdiği söylenebilir.

Eşbütünleşme ilişkisine dayalı katsayı tahmini sonuçlarına göre eğitim düzeyi arttıkça sağlık hizmetlerine verilen önemin de artmasıyla beraber sağlık harcamalarının arttığı; sağlık harcamalarının artmasıyla eğitim seviyesinin yükseldiği söylenebilir.

Değişkenler arasında eşbütünleşme ilişkisi tespit edildiğinden Vektör Hata Düzeltme Modeline (VECM) dayalı nedensellik analizi yapılmış ve elde edilen sonuçlar Tablo 4’te sunulmuştur.

**Tablo 4: VECM Nedensellik Testi Sonuçları**

		Chi-sq	df	Prob
EGITIM	→ SAGLIK	5.471322	1	0.0193
SAGLIK	→ EGITIM	0.009640	1	0.9218

VECM Nedensellik Analizi sonuçlarına göre %5 anlam düzeyinde değişkenler arasında nedensellik ilişkisi *EGITIM* den *SAGLIK*'a doğru tek yönlüdür. Bu bağlamda eşbütünleşme testi sonuçlarına paralel olarak eğitim düzeyindeki gelişmenin sağlık harcamalarını (düzeyini) arttıracığı söylenebilir.

### SONUÇ

Bu çalışmada, yapısal kırılmaları dikkate alan Kapetanios Birim Kök Testi ve Maki Eşbütünleşme Testi ile Vektör Hata Düzeltme Modeline dayalı Nedensellik Analizi kullanılarak 1980 – 2012 dönemi itibarıyla Türkiye için eğitim düzeyi ile sağlık harcamaları arasında karşılıklı ilişki araştırılmıştır.

Çalışmada ilk olarak Kapetanios birim kök testi yapılmış, serilerin düzeylerinde durağan olmadıkları, birincil farklarında durağan oldukları [I(1)] görülmüştür. Kapetanios birim kök testine göre her iki veri setinde küresel krizden kaynaklı 2008 yılında kırılma gerçekleşmiştir.

İkinci aşamada Maki Eşbütünleşme testine geçilmiştir. Model 1 dışında diğer tüm modeller için değişkenler arasında, test istatistikleri kritik değerlerden büyük olduğu için, eşbütünleşme ilişkisi olduğu tespit edilmiştir.

Maki eşbütünleşme testi sonucunda değişkenler arasında eşbütünleşme ilişkisi tespit edildiği için FMOLS yöntemiyle uzun dönem katsayıları tahmin edilmiştir. Elde edilen bulgulara göre, sağlık harcamalarında meydana gelecek 1 birimlik artışın eğitim endeksini 0.04 birim artıracığı; eğitim endeksindeki 1 birimlik artışın sağlık harcamalarını 20.52 birim artıracığı sonucuna ulaşılmıştır. Ayrıca katsayı tahminine ilişkin t istatistiği anlamlı olduğundan katsayı tahminin güvenilir sonuç verdiği söylenebilir.

Değişkenler arasında eşbütünleşme ilişkisi tespit edildiğinden Vektör Hata Düzeltme Modeline (VECM) dayalı nedensellik analizi yapılmış, %5 anlam düzeyinde değişkenler arasında nedensellik ilişkisinin Eğitim'den Sağlık'a doğru tek yönlü olduğu bulunmuştur. Bu bağlamda eşbütünleşme testi sonuçlarına paralel olarak eğitim düzeyindeki gelişmenin sağlık harcamalarını (düzeyini) arttıracığı söylenebilir.

Sonuç olarak ekonometrik analiz sonucunda elde edilen bulgular ışığında 1980 – 2012 dönemi itibarıyla Türkiye için eğitim düzeyi ile sağlık düzeyi arasında uzun dönemli bir ilişki olduğu belirtilebilir.

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# TÜRKİYE'DE 1990 SONRASI EĞİTİM HİZMETLERİNDEKİ GELİŞİMİN MALİ VE EKONOMİK ANALİZİ

Ramazan ARMAĞAN\*

Mevlüt KARABIÇAK\*\*

## ÖZET

Günümüzde yarı kamusal mallar kapsamında değerlendirilen eğitim hizmetleri, hem bireylerin hem de toplumların ekonomik ve sosyal gelişmişlik düzeyini etkileyen önemli faktörlerden biridir. Eğitim hizmetlerinin sunum düzeyi; başta kaynak kullanımında etkinlik olmak üzere verimlilik, gelir dağılımında adalet, ekonomik büyüme ve kalkınmanın sağlanması ve hatta sağlık alanındaki anne-bebek ölümleri oranlarının düşmesi, suç işleme oranının azalması vb. pek çok göstergesi olumlu-olumsuz, dolaylı- dolaysız yönde etkilemektedir.

Ülkelerin gelişmişlik seviyeleri ifade edilirken kişi başına düşen milli gelir rakamları yanında ülke nüfusunun beşeri sermaye bakımından eğitim ile ilgili verileri dikkate alınmaktadır. Eğitim hizmetleri bireysel, toplumsal ve iktisadi boyutunun genişliği nedeniyle genellikle sunumu ve kontrolü kamu kesimi tarafından gerçekleştirilmektedir. Eğitim hizmetlerinden yararlanmada hem içsel faydalar hem de dışsal faydalar söz konusudur. Bu nedenle toplumda eğitim düzeylerinin artmasıyla refah düzeyi arasında bağ kurulmakta, bireyin yaşadığı topluma aldığı eğitim ölçüsünde katkıda bulunduğuna inanılmaktadır. Kamu harcamaları içerisinde yer alan eğitim harcamalarındaki değişim ve gelişimin ülkemiz ekonomisi açısından meydana getirdiği etkilerin araştırılması ve tespiti önemli bir konudur.

Bu çalışmada Türkiye'de eğitim harcamalarının ekonomik ve mali açıdan yeri, önemi, yıllara göre gelişimi ve meydana getirdiği etkiler ulusal ve uluslararası verilerle genel olarak incelendikten sonra eğitimin geçmiş ile geleceği üzerine bir değerlendirmeye yer verilecektir.

**Anahtar Kelimeler:** Türk Kamu Maliyesi, Sosyal Harcamalar, Eğitim Hizmetleri, Eğitim Harcamaları, Yarı Kamusal Mallar.

## DEVELOPMENT OF EDUCATION IN TURKEY AFTER 1990 FINANCIAL AND ECONOMIC ANALYSIS

### ABSTRACT

Nowadays education services which assessed in the context of semi-public goods are one of the important factors of level of economic and social development. Efficiency in resource utilization, efficiency, equality in income distribution, achieving economic growth and development, decreasing the mother-infant mortality rates, decreasing of crime rates and many indicators are directly-indirectly or positive-negative affected by provision of educational services level. When expressing levels of development of countries, both national income per capita and data of related to education especially human capital of country are taken into account.

Educational services presentation and control are carried out by the public sector because of width of the social and economic dimensions. There are both internal and external benefits when using of educational services. Therefore, a link is established between increasing levels of education and the level of welfare. Investigation and detection of changes in education expenditure and growth rate are very important for the expecting results of national economy.

At the first step of this paper; aspects, importance and evolution by years of economic and fiscal expenditures are examined by using national and international data. In the second step recommendations will be given about the past and future of the education expenditures.

**Key Words:** Turkish Public Finance, Social Expenditure, Educational Services, Educational Expenditures, Semi-Public Goods

## GİRİŞ

Eğitim, ekonomik ve toplumsal paylaşım süreçlerinin en belirleyici unsurlardan biridir. Eğitim düzeyi ile refah seviyesi arasında doğrusal bir bağlantı olup kişilerin toplumsal statülerinin değişiminde önemli fırsatlar sunmaktadır. Bireysel ve toplumsal getirileriyle ilgili birçok araştırmaya konu yapılan eğitim, ekonomik ve mali

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boyutta beşeri sermayenin nicelik ve niteliği üzerinde etkili olmaktadır. Başta gelir dağılımı ve yoksullukla mücadele olmak üzere ekonomik büyüme ile kalkınma vb. hedeflerin gerçekleştirilmesinde kamu harcamaları bakımından ön sıralarda yer almaktadır<sup>11</sup>. Eğitim harcamaları, içsel büyüme modellerinde sıkça vurgulanan beşeri sermaye oluşumuna yol açarak, eğitim seviyesindeki gelişmelerin toplumsal bilinci artıracığı ve daha sağlıklı bir toplumun oluşumuna katkı sağlayacağı ileri sürülmektedir. Söz konusu insan sermayesiyle insanlarda birikmiş üretime dönük bilgi ve becerilerin toplamı kastedilmektedir. Fiziksel yatırımlar da olduğu gibi insan sermayesine yapılan yatırımların da bir getirisi söz konusudur. Bu getiri, mevcut beşeri sermayenin üretkenlik süresi boyunca elde ettiği kazanç artışıyla ölçülmektedir. Farklı eğitim seviyesi ve türlerine sahip beşeri sermayenin de birey ve toplum açısından getirileri farklı olmaktadır. Öyle ki; eğitim düzeyi veya kalitesi yükselen bireylerin daha fazla kazanç elde etme fırsatına sahip olabileceği veya harcama- tasarruf alışkanlıklarının olumlu yönde değişeceği, gelir ve istihdam açısından çeşitli avantajlara kavuşması dolayısıyla milli hasılanın yükselmesine katkısı söz konusudur<sup>12</sup>.

Emeğin verimlilik kapasitesini geliştirmek ve ulusal geliri artırıcı etkisini tahmine yönelik yapılan ampirik çalışmalar incelendiğinde; 88 gelişmekte olan ülkede okuma yazma oranının %20'den %30'a çıkması halinde ulusal gelirin %8 - %16 arası arttığı, ABD'de istihdam edilen nüfus başına ulusal gelir artışının beşte birinin işgücünün eğitim göstergelerindeki artışa bağlı olduğu ve lise mezunu ile üniversite mezunu bir kimsenin gelir farkının %60'ının sadece eğitim farkından kaynaklandığı, lisansüstü eğitim yapan birinin ise yıllık gelirin ilkokul mezununa göre 2,46 kat daha fazla olduğu tespit edilmiştir<sup>13</sup>.

Eğitim alanındaki kamu harcamalarını; eğitim ve öğretimde istihdam edilenlere ödenen maaşlar, sabit binalara yapılan yatırım harcamaları, teknolojik donanım- laboratuvar araç gereç alımları, yiyecek-içecek- barınma ile kitap- kırtasiye vb. oluşturmaktadır<sup>14</sup>. Eğitim ile ilgili birçok tanıma bakıldığında; ana hedefin kişiye zihinsel, bedensel ve toplumsal anlamda fayda sağlamayı, kendisine ve çevresine yararlı bir birey olmayı amaçlayan faaliyetleri kapsadığı görülmektedir. Bütün toplumlarda eğitimin amacı, yetişkinlerin hayat tarzını olumlu biçimlendirerek onlar aracılığıyla yeni kuşaklara bir kültür birikimi aktarmak, bireyleri kişisel, toplumsal ve ekonomik anlamda yaşamdaki rollerini doğrulara yöneltmektir<sup>15</sup>. Eğitimin kişiye özel içsel yararlarının dışında; demokrasi ve demokratik kurumların oluşturulması, etkin piyasalar ve teknik değişikliklere uyumun sağlanması, suç oranları ile ceza sistemleri giderlerinin azaltılması, yoksullukla mücadele edilmesi ve kamu maliyetlerinin azalmasına katkı vb. dışsal yararları mevcuttur<sup>16</sup>.

İktisadi açıdan eğitim; toplumun yaratıcı gücünü ve verimliliğini artıran, kalkınma çabasının gerçekleşmesi için gerekli nitelik ve nicelikte işgücü yetiştirilmesini sağlayan ve bireylere yeteneklerine göre yetiştirme ve meslek edinme olanağı sunan etkili bir araçtır. Özellikle küreselleşmenin de etkisiyle günümüzde gerek hizmet gerekse mal üretim tekniklerinde görülen hızlı değişim, eğitimin önemini daha da artırmıştır. Rekabette üstünlüğün sırrı olarak kabul edilen insan kaynağının bu gelişmelere uyumu için eğitime yatırım yapma ihtiyaçlarını ön plana çıkarmıştır. Ülkemizde konsolide bütçe içinde tüm sosyal harcamaların yaklaşık % 70-75'ini eğitim harcamaları oluşturmaktadır<sup>17</sup>. Niteliği itibarıyla hem tam kamusal hem de yarı kamusal mallar arasında yer alan eğitim hizmetleri sunumunda başlıca sorumluluk aileler ve devlete yükletilmiş olup aile kendi kültür kalıbına ve ekonomik seviyesine, devlet de üretim biçimi ve siyasal felsefesine göre halkın eğitilmesine katkı sunmaktadır<sup>18</sup>.

## 1. 1990 'LI YILLARDAN GÜNÜMÜZE TÜRKİYE'DE EĞİTİM ALANINDAKİ GELİŞMELER

Türk Milli Eğitim Sistemi gereğince; eğitim devletin denetimi ve gözetimi altında yapılmaktadır. 1982 Anayasasının 42. Maddesinde eğitim ile ilgili olarak; *"herkes eğitim görme hakkına sahiptir. Bireyler eğitimleri süresince ilgi ve yetenekleri ölçüsünde çeşitli programlara, okullara yönlendirilerek yetiştirilirler. Eğitim sisteminin her bakımdan bu yönelimi gerçekleştirmesi esastır."* hükmüne yer verilmiştir. Türk Milli Eğitim Sistemi; **"Örgün Eğitim"** ve **"Yaygın Eğitim"** olmak üzere iki ana bölümden oluşmaktadır. Örgün eğitim; okul sistemini ifade etmekte ve okulöncesi, ilköğretim, ortaöğretim ve yükseköğretimden oluşmaktadır. Yaygın eğitim ise okulların dışında veya yanındaki faaliyetlerin tümünü kapsamaktadır<sup>19</sup>.

<sup>11</sup> Yusuf ALPAYDIN, "Türkiye'de Yoksulluk Ve Eğitim İlişkileri", İlmî Etüdler Derneği Yayını, *İLEM Yıllık*, Yıl 3, Sayı 3, 2008, s. 50.

<sup>12</sup> Hüseyin ERGEN, "Türkiye'de Eğitim Planlama ve Kullanılan Eğitim Göstergeleri", Mersin Üniversitesi Eğitim Fakültesi Dergisi, C. 9, S.2, Ağustos 2013, Mersin, s.154-155

<sup>13</sup> Nazım ÖZTÜRK, "İktisadi Kalkınmada Eğitimin Rolü", Sosyo-Ekonomi Dergisi, Y. 2005, S.1 (Ocak- Haziran), Ankara, 2005, s.35.

<sup>14</sup> Muhsin KAR- Sami TABAN, "Kamu Harcama Çeşitlerinin Ekonomik Büyüme Üzerine Etkileri", Ankara Üniversitesi SBF Dergisi, C.58, S. 3, 2003, Ankara, s.153.

<sup>15</sup> Umut TAŞ-Fusun YENİLMEZ, "Türkiye'de Eğitimin Kalkınma Üzerindeki Rolü Ve Eğitim Yatırımlarının Geri Dönüş Oranı", Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi, C. 9, S.1, Haziran 2008, Eskişehir, s.158.

<sup>16</sup> M. Ali BÜYÜKASLAN, "Toplumsal Kalkınma Ve Eğitim", Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü

Eğitim Yönetimi Dergisi, Y. 1, S. 4, KOCAELİ-1995, www.kuey.net/index.php/kuey/article/view/805/604> 10.02.2014.

<sup>17</sup> Taner AKÇACI, "Eğitim Harcamalarının İktisadi Büyüme Etkisi", Kafkas Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi Cilt 4, Sayı 5, 2013, ISSN: 1309 – 4289 s.68-69.

<sup>18</sup> İbrahim ÇINAR, "Küreselleşme, Eğitim ve Gelecek -1" Kurumsal Eğitimbilim Dergisi, C. 2, S.1, Afyon Kocatepe Üniversitesi Yayını, Afyon, 2009 s.16.

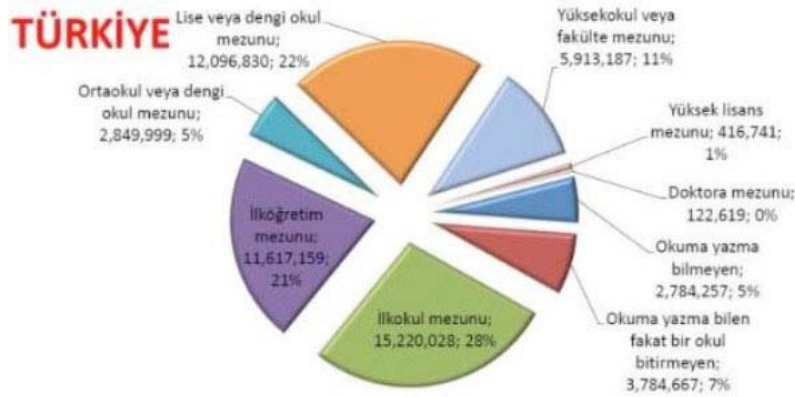
<sup>19</sup> "Türk Milli Eğitim Sistemi", < http://www.tbb.gen.tr/turkce/egitim/index.html>, 20.02.2014. <sup>19</sup> Hüseyin ERGEN, "Türkiye'de Eğitim

Cumhuriyet döneminden 2000’li yıllara kadar okul öncesi eğitimde okul sayısı 99 kat, öğretmen sayısı 86 kat, ilköğretimde okul sayısı 8 kat, ilköğretim öğretmen sayısında 27 kat artmışken öğrenci sayısında 26 kat artış olmuştur. Bu değerler ortaokullarda okul sayısı 54 kat, öğretmen sayısı 38 kat, öğrenci sayısı da 164 kat artış şeklinde gerçekleşmiştir. Genel lise sayısı 113 kat, meslek lisesi sayısı 154 kat artarken fakülte ve yüksekokul sayısı 71 kat artmıştır. Bu gelişmelere göre okullaşma oranları; ilkokul düzeyinde %88,9, ortaokul düzeyinde %65.12, liseler düzeyinde %54,7’ye ve yükseköğretim düzeyinde ise %26,7’ye yükselmiştir. Ancak, anaokulu düzeyinde okullaşma oranında %8,9 gibi düşük bir artış seyri izlemiştir. 1923 yılında tüm okullarda okuyan toplam öğrenci sayısı 350 bin civarında iken bu sayı 2000’li yıllarda 15 milyon öğrenciye, öğretmen sayısı da 15 binden 550 binler seviyesine yükselmiştir.

Özellikle 21. yüzyılda hem ülkemizin rekabet gücünün artırılması hem de Avrupa Birliği’ne katılım süreci gereği eğitim alanında önemli adımlar atılmıştır. Bu bağlamda gelişmenin ve demokratikleşmenin hızlandırılması, kaynakların rasyonel kullanımının sağlanması ve hızlı nüfus artışı ve göçlerden kaynaklanan sorunların çözümü için 1997 yılının Ağustos ayında çıkarılan 4306 sayılı Temel Eğitim Kanunu ile zorunlu eğitim süresini gelişmiş ülkeler seviyesine ulaştırmak üzere 8 yıla uzatılmıştır<sup>20</sup>. Temel eğitimin süresi beş yıldan sekiz yıla çıkarılmak suretiyle eğitimin daha kaliteli ve tutarlı hale getirilmesi öngörülmüştür. Bu değişim mali açıdan kamu kaynakları ve bağışların dışında Dünya Bankası’nca destek olarak sağladığı kredi ile yürütülmüştür<sup>21</sup>. Özellikle 1996-2000 yıllarını kapsayan 7. Beş Yıllık Kalkınma Planı’nda eğitime birinci öncelikli sektör olarak yer verilmiştir. 2000’li yıllarda da eğitim sistemi- programları ve teknolojilerinin geliştirilmesine yönelik olarak eğitimci sayısı, altyapı- üst yapı ve eğitim malzemelerinin nitelik ve niceliğini artırıcı çalışmalara ağırlık verilerek, Türk insanının yetiştirilmesinde sürekli kaynak artırımı yapılarak eğitimdeki hedef ve beklentileri karşılayacak çabalar sarf edilmiştir.

1996-2010 yıllarını kapsayan Eğitim Ana Planı hazırlıkları kapsamında; eğitimin bireysel, ulusal ve küresel istemlerine cevap verecek şekilde esnekleştirilmesi ve sisteme giriş çıkış kolaylıklarının artırılması yönündeki çalışmalar sürdürülmüştür<sup>22</sup>. Milli Eğitim Bakanlığı’nca yapılan açıklamada; ülkemizde 2013-2014 eğitim-öğretim yılı itibarıyla yaklaşık 17 milyon öğrenci ile 800 bin öğretmenin bulunduğu belirtilmektedir. Ayrıca yükseköğretimde 2011- 2012 öğretim yılı itibarıyla yükseköğrenim gören öğrenci sayısı toplamı 4.353.542, öğretim elemanı sayısı da 118.839 olarak tespit edilmiştir<sup>23</sup>. Bu rakamın 2014 yılı itibarıyla yaklaşık 5 milyon kişiye ulaştığı tahmin edilmektedir.

**Şekil 1: 2013 Yılı İtibarıyla Türkiye’de Eğitim Verileri**



**Planlama ve Kullanılan Eğitim Göstergeleri**, Mersin Üniversitesi Eğitim Fakültesi Dergisi, C. 9, S.2, Ağustos 20213, Mersin, s.154-155

<sup>19</sup> Nazım ÖZTÜRK, “İktisadi Kalkınmada Eğitimin Rolü”, Sosyo-Ekonomi Dergisi, Y. 2005, S.1 (Ocak- Haziran), Ankara, 2005, s.35.

<sup>19</sup> Muhsin KAR- Sami TABAN, “Kamu Harcama Çeşitlerinin Ekonomik Büyüme Üzerine Etkileri”, Ankara Üniversitesi SBF Dergisi, C.58, S. 3, 2003, Ankara, s.153.

<sup>19</sup> Umut TAŞ-Fusun YENİLMEZ, “Türkiye’de Eğitimin Kalkınma Üzerindeki Rolü Ve Eğitim Yatırımlarının Geri Dönüş Oranı”, Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi, C. 9, S.1, Haziran 2008, Eskişehir, s.158.

<sup>19</sup> M. Ali BÜYÜKASLAN, “Toplumsal Kalkınma Ve Eğitim”, Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü Eğitim Yönetimi Dergisi, Y. 1, S. 4, KOCAELİ-1995, www.kuey.net/index.php/kuey/article/view/805/604> 10.02.2014.

<sup>19</sup> Taner AKÇACI, “Eğitim Harcamalarının İktisadi Büyümeye Etkisi”, Kafkas Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi Cilt 4, Sayı 5, 2013, ISSN: 1309 – 4289 s.68-69.

<sup>19</sup> İkrâm ÇINAR, “Küreselleşme, Eğitim ve Gelecek -1” Kurumsal Eğitimbilim Dergisi, C. 2, S.1, Afyon Kocatepe Üniversitesi Yayını, Afyon, 2009 s.16.

<sup>19</sup> “Türk Milli Eğitim Sistemi”, < <http://www.tbb.gen.tr/turkce/egitim/index.html>>, 20.02.2014

<sup>20</sup> Abdurrahman BORAN, “Cumhuriyet Döneminde Eğitimde Meydana Gelen Gelişmeler”, Erciyes Üniversitesi Sosyal Bilimler Dergisi, S.9, Y.2000, Kayseri, s.308-309. <[http://sbe.erciyes.edu.tr/dergi/sayi\\_9/](http://sbe.erciyes.edu.tr/dergi/sayi_9/)> 20.02.2014.

<sup>21</sup> Eğitimin Toplumsal Cinsiyet Açısından İncelenmesi, Türkiye 2003 (10) [http://www.unicef.org/turkey/gr/\\_ge21ja.html](http://www.unicef.org/turkey/gr/_ge21ja.html), 18.02.2014.

<sup>22</sup> “Türk Milli Eğitim Sistemi”, < <http://www.tbb.gen.tr/turkce/egitim/index.html>>, 20.02.2014.

<sup>23</sup> TÜİK, 2011- 2012 Öğretim Yılı Öğrenci ve Öğretim Elemanları Sayısı Özet Tabloları, <<http://www.osym.gov.tr/belge/1-13575/2011-2012-ogretim-yili-yuksekogretim-istatistikleri.html>>, 20.02.2014.

**Kaynak:**<http://www.memurhaber.com/turkiyenin-egitim-istatistikleri-sasirtiyor-h15830.html>

Şekil 1’de 2013 yılı itibarıyla güncel veri olması ve ekonomik analizlere katkısı bakımından önemli bilgiler yer almaktadır. Ülke nüfusunun % 21’i ilköğretim mezunlarından, %5’ini ortaokul mezunları, %22’sini lise veya dengi okul mezunları oluştururken, yükseköğretim mezunlarının %11 ve %1yüksek lisans ile yüzdesi ölçülmeyecek kadar az düzeyde doktora mezunu bulunmaktadır. Ayrıca halen okuma yazma bilmeyen %5 ve %7 oranında da okuma yazma bildiği halde herhangi bir okul bitirmeyen nüfus söz konusudur.

Böylesi bir tablodan ülkemizde eğitim alanında halen önemli sorunların yaşandığı ve bu alanda yapılması gereken daha çok şeyin olduğu veya bu alanda kişisel gelişim- ticari amaçlı yatırım yapacak olan ilgililer açısından büyük fırsatları içerdiği söylenebilir. Özellikle insanların yaşam kalitesini yükseltmek adına eğitilmiş nüfus içinde lisans ve lisansüstü eğitim alanında oranının artırılması, araştırma geliştirme enstitülerinin kurulması ve desteklenmesi, yaygın eğitim veya yaşam boyu eğitim, mesleki ve kurum içi sürekli eğitim adı altında faaliyet gösteren kurum ve kuruluşların sayısının ve niteliklerinin artırılmasına çalışılmalıdır.

## 2. MALİ VE EKONOMİK YÖNLERİYLE EĞİTİMİN ÖNEMİ

Eğitimin toplum üzerinde sosyal etkilerinin yanı sıra ekonomik etkilerinin de önemi bilinmektedir. Eğitim harcamalarının ekonomik analizinde kullanılan “beşeri sermaye” kapsamında iki teoriden yararlanılmaktadır.

“*Beşeri Sermaye Teorisi*” olarak adlandırılan birinci teoride; eğitimin değeri makro seviyede eğitim yoluyla elde edilen kişi başına gelir, mikro düzeyde de eğitimin yarattığı kişisel gelir yoluyla değerlendirilmektedir. Genellikle eğitimin işgücünde verimliliği, kişisel ve milli geliri artırıcı etkisine vurgu yapılmaktadır. Bilgi toplumuna geçiş sürecinde eğitim harcamalarını artıran veya bilgiye yatırım yapan ülkelerin yeni istihdam ve üretim olanaklarına kavuştukları ve ekonomik kalkınma alanında büyük mesafeler kat ettikleri gözlemlenmektedir. Yapılan bilimsel çalışmalarda eğitimin ekonomik etkileri; büyüme- kalkınma, istihdam, milli gelir, gelir dağılımı, teknoloji ve yaşam kalitesi yönüyle ele alınmaktadır. Eğitimin toplumların üretim kapasitesini artırarak ekonomik büyümeye katkı yaptığı görüşünü “Milletlerin Zenginliği” eseriyle ilk ortaya atanlardan birisi Adam Smith’dir. İktisat teorisinde eğitimin değerinin tespitinde iki ayrı teorik yaklaşım benimsenmiştir.

“*Beşeri Yapabilirlikler Teorisi*” ise; temel olarak eğitim yoluyla oluşturulan gelirin eğitim değerini ölçmek için en iyi bir ölçüt olmadığı, asıl olanın yaşam kalitesinin kişinin yapmaya ya da olmaya değer verdiği şeylere göre değerlendirmek olgusuna dayandırılmaktadır. Dolayısıyla eğitimin gerçek değeri kişilerin bazı işlevleri (önlenebilir hastalık, erken ölümlerden kaçınmak, politik karar mekanizmalarında bulunmak veya baskıcı aile ilişkilerinden kaçınabilmek vb.) gerçekleştirebilmesiyle açıklanmaktadır<sup>24</sup>.

Ekonomik alanda gelişimin ana unsuru olan beşeri sermayenin temelini insana yatırım oluşturmaktadır. İnsan unsuruna yapılacak bu yatırımlar; *eğitim, sağlık ve beslenme* alanında gerçekleştirilmektedir. Bu üç alana yapılan yatırımların dengeli bir şekilde gerçekleştirilmesi, beşeri sermaye faktöründen gereği gibi yararlanmayı olanaklı kılmaktadır. İnsana yatırım denildiğinde de genellikle eğitim yatırımları kastedilmektedir. Eğitim yatırımları, gelişmiş ve gelişmekte olan tüm ülkelerin önemle üzerinde durduğu konuların başında gelmektedir<sup>25</sup>.

Eğitimin yöntemi, tekniği, araçları ve niteliği zamana ve toplumsal yapıya göre değişse de değişmeyen ana unsur; insanlığın mutluluğu ve toplumsal refahının artırılmasıdır. Eğitim harcamalarının toplumsal fayda ve verimliliğini artırıcı bu özelliği nedeniyle devlet tarafından desteklenmesi esas olarak bu alandaki piyasa başarısızlığına bağlanmaktadır. Piyasa başarısızlığının da özellikle ilk ve orta öğretimde daha belirgin olması devleti daha ön plana çıkarmaktadır<sup>26</sup>. Eğitimde fırsat eşitliğinin gerçekleştirilmesinde devletlere önemli sorumluluk yüklenmesi gerektiği ve devletin asli görevlerinden biri olduğu John Maynard Keynes gibi müdahaleci anlayışın önde gelen teorisyenlerince vurgulanmıştır. Öyle ki; eğitimin önemine paralel olarak günümüzde bu hizmetler yalnız devlet tarafından yerine getirilmeyip özel sektörün de içinde yer aldığı karma bir yapı içinde sunulmaktadır. Finansmanı çoğunlukla devlet tarafından yapılmakla birlikte özel sektöre doğrudan veya dolaylı destek verilerek kaynak aktarılmaya çalışılmaktadır. Bu anlayışa uygun olarak dünya çapında pek çok ülkede Gelir ve Kurumlar Vergisi’nde (tam ya da kısmi muafiyet, eğitim giderlerinin ya da eğitim kuruluşlarına yapılan bağış ve yardımların matrahtan indirilebilmesi, kişiler açısından eğitimlerini sürdürebilmek amacıyla elde ettikleri bazı gelir kalemlerinin vergiden istisna edilmesi gibi.) teşvikler söz konusudur<sup>27</sup>.

<sup>24</sup> Arzu Akkoyunlu WIGLEY- Buket AKKOYUNLU, “Türkiye’de Eğitimin Değerinin Ölçülmesi”, Hacettepe Üniversitesi Eğitim Fakültesi (H.U. Journal Education) S.40, Ankara, 2011, s.375.

<sup>25</sup> Muharrem AFŞAR, “Türkiye’de Eğitim Yatırımları ve Ekonomik Büyüme İlişkisi”, Anadolu Üniversitesi Sosyal Bilimler Dergisi, (Anadolu University Journal Of Social Sciences), Cilt/Vol.: 9- Sayı/No: 1 : 85-98 (2009), Eskişehir, s.86

<sup>26</sup> Ferhat EMİL- H. Hakan YILMAZ, “Kamu Borçlanması, İstikrar Programları Ve Uygulanan Maliye Politikalarının Kalitesi: Genel Sorunlar Ve Türkiye Üzerine Gözlemler”, Economic Research Center (ERC) Working Paper in Economics 03/07 September 2003, s.9 [http://www.erc.metu.edu.tr/menu/sayfa.php?icerik=03\\_7&lang=eng&nav=yes](http://www.erc.metu.edu.tr/menu/sayfa.php?icerik=03_7&lang=eng&nav=yes), 01.04.2014.

<sup>27</sup> Halit ÇİÇEK- Doğan BOZDOĞAN, “Avrupa Birliğinde Eğitim Ve Sağlık Hizmetlerine Yapılan Vergisel Teşvikler: Almanya, İngiltere Ve Fransa Örnekleri”, ISSN:1304-0278, Elektronik Sosyal Bilimler Dergisi Güz-2011 Cilt:10 Sayı:38, s. 198-199, < [www.esosder.org](http://www.esosder.org), 01.04.2014.

### 3. TÜRKİYE’DE EĞİTİM HİZMETLERİNİN MALİ VE EKONOMİK ANALİZİ

Bu başlık altında Türkiye’de 1990- 2014 arası dönemde yapılan harcamaların yıllar, kurumlar- birimler itibariyle ulusal ve uluslararası veriler dikkate alınarak ekonomik ve mali yönden etkileri üzerine genel bir değerlendirmeye yer verilmektedir.

**Tablo1: Konsolide Bütçeli Kuruluşlarda Eğitim Hizmeti Harcamaları (2004)**

Harcamayı Yapan Kurum/Birim	Harcama Tutarı (Milyar TL)
Danıştay	120
Sayıştay	447
Başbakanlık	374.870
DPT	16.185
Diyanet İşleri Başkanlığı.	48
Adalet Bakanlığı	1.042
İçişleri Başkanlığı	2.800
Emniyet Genel Müdürlüğü	135.047
Dışişleri Bakanlığı	25.599
Maliye Bakanlığı	3.166
Milli Eğitim Bakanlığı	12.491.420
Bayındırlık ve İskan Bakanlığı	1.576
Sağlık Bakanlığı	118.127
Tarım Bakanlığı	29.793
Kültür Bakanlığı	9
Meteoroloji Genel Müdürlüğü	1.014
Katma Bütçe Toplamı	3.373.643.
TOPLAM	16.574.906

**Kaynak:** Mali Bakanlığı Muhasebat Genel Müdürlüğü Kamu Hesapları Bültenlerinden derleyen Erkan KARAARSLAN.

**Tablo 1’den** görüldüğü üzere başta Milli Eğitim Bakanlığı olmak üzere pek çok kuruluş tarafından eğitim faaliyetleri yapılmaktadır. Özellikle Emniyet Genel Müdürlüğü, Sağlık Bakanlığı ve Devlet Meteoroloji Genel Müdürlüğü gibi kamu kuruluşlarının eğitim harcamalarının da yüksek olduğu görülmektedir. Ancak bünyesinde çok sayıda okul bulunduran Milli Savunma Bakanlığı ve Jandarma Genel Komutanlığının bütçe uygulamalarından dolayı bu kurumlarca yapılan eğitim harcamaları görülmemektedir. 2004 Mali Yılında Milli Savunma Bakanlığı bütçesinden 9,361 katrilyon TL, Jandarma Genel Komutanlığının Bütçesinden ise 2,059 katrilyon TL harcanmış olsa da bu rakamların içinde eğitim amaçlı harcamalar sınıflandırmamıştır. Bu tutarın tamamı “Kamu Düzeni ve Güvenlik Hizmetleri” bölümüne kaydedilmiştir. Bu kurumlar kapsamında yapılan harcamalar içinde 2004 Mali Yılı sonu itibariyle hiçbir eğitim harcaması yapılmamış gibi görünse de eğitim amaçlı oldukça büyük bir meblağın söz konusu olduğu gözden kaçırılmamalıdır. Bu iki örnek kurum dışında benzer nedenlerle halen ülkemizde toplam eğitim harcamalarının net bir şekilde değerlendirilmesinde önemli engeller söz konusudur<sup>28</sup>.

**Tablo 2: Eğitim Harcamalarının Konsolide Bütçe ve GSMH İçindeki Payları (%)**

Yıllar	1997	1998	1999	2000	2001	2002	2003	2004
Konsolide Bütçede Eğitim Harcama Payı	11,94	12,38	11,79	10,10	8,71	9,64	10,30	11,82
GSMH İçinde Eğitim Harcamaları Payı	3,27	3,61	4,23	3,76	3,98	4,05	4,06	4,00

<sup>28</sup> Erkan KARAARSLAN, “ Kamu Kesimi Eğitim Harcamaları Analizi”, Maliye Dergisi, Maliye Bakanlığı SGB Yayınları, S.149, Mayıs –Aralık 2005, s.67, [http://dergiler.sgb.gov.tr/calismalar/maliye\\_dergisi/maliyedergisi.asp?dergi\\_no=149, \(01.04.2014\)](http://dergiler.sgb.gov.tr/calismalar/maliye_dergisi/maliyedergisi.asp?dergi_no=149, (01.04.2014))

Konsolide Bütçe/GSMH	27,39	9,18	5,88	7,19	5,66	2,06	9,38	3,83

**Kaynak:** Erkan KARAARSLAN, agm. s.45.

**Tablo 2’de** 1997- 2004 yılları arasında dönem başlangıcı ve sonu itibarıyla; konsolide bütçede eğitim harcamaları payında önemli bir değişim görülmektedir. GSMH içinde eğitim harcamaları payının yıllara göre bir azalma olmamakla birlikte sadece 1999 yılında sekiz yıllık eğitime geçiş dolayısıyla önemli bir artış görülse de dönem sonunda başlangıca göre yüksek bir değerle kapanmıştır. Ancak 2000-2003 yılları arasında meydana gelen düşüşlerin nedenini etkisi tüm dünyada görülen 1998 ve 2001 krizlerinden kaynaklanmıştır. Konsolide Bütçe/GSMH ilişkisi yönünden ise değişken bir durum söz konusudur. Başlangıca göre daha sonraki yıllarda GSMH’deki artış Konsolide bütçeden daha yüksek olmasına bağlı olarak, dönem içinde özellikle kriz dönemlerinde konsolide bütçe içindeki daralmaya rağmen eğitim harcamalarının sabit, zorunlu olması veya hane halklarının katkısı nedeniyle değişim oranının GSMH lehinde ama dalgalı bir değişim gösterdiği görülmektedir. 1997 yılı itibarıyla Konsolide Bütçe Harcamalarının GSMH’ya oranının yüksekliğine etki eden birinci ve en önemli faktörün borç faizi ödemelerinden kaynaklandığını söylemek mümkündür. Sonraki dönemlerden sonra bu oranların önemli düzeyde düşmesi de borç faiz ödemelerinin GSMH içindeki azalmasına bağlı olan bir gelişmedir. Bu dönemde eğitim harcamalarının kapsamında ağırlıklı olarak; yeni üniversitelerin kurulması, 8 yıllık temel eğitime geçiş, nüfus artışına bağlı harcamalar oluşturmuştur.

**Tablo 3: Konsolide Bütçe Yatırımları –MEB Yatırımlarına Ayrılan Paylar (YTL)**

Yıllar	Kons. Büt. Yat. Öde.	MEB Yat. Öde.	Kon. Büt. Yat. MEB Yat. Ayr.Pay %)
1997	524.600.000	76.884.950	14,66
1998	999.975.000	373.262.000	37,33
1999	1.410.000.000	408.341.000	28,96
2000	2.352.000.000	666.782.000	28,35
2001	3.500.000.000	779.855.000	22,28
2002	5.736.000.000	1.281.690.000	22,34
2003	8.998.500.000	1.479.050.000	16,44
2004	7.368.361.000	1.060.762.160	14,40
<b>2005 (Tahmin)</b>	<b>10.143.886.000</b>	<b>1.230.306.000</b>	<b>12,13</b>

**Kaynak:** 2005 Mali Yılı Bütçe Tahminin ‘den derleyen Erkan KARAARSLAN, a.g.m. s.50.

**Tablo 3’de** 1998’de tüm konsolide bütçe yatırımları içinde Milli Eğitim Bakanlığı payının % 37 seviyesinde gerçekleştiği bu oran bir önceki yıl yatırımlarından % 150 daha fazla olmuştur. Eğitim yatırımlarının 1998 ve izleyen 2 yıl boyunca artışı sekiz yıllık temel eğitim uygulaması için Dünya Bankası’ndan sağlanan kredilerle gerçekleştirilen yatırımlardan kaynaklanmıştır. 2001 yılından itibaren uygulanan kamu tasarruf politikaları eğitim yatırımlarında da azalma şeklinde görülmüştür. 1998 yılı sonrası dönem sonuna kadar konsolide bütçe yatırım harcamaları içerisinde eğitim yatırımlarının payı sürekli azalmıştır. 2003 yılından itibaren azalma eğilimi daha belirginleşmiş ve 2005 Mali Yılı Bütçe Tahmininde zirve noktasına ulaşmış ve Konsolide Bütçe Yatırım Harcamalarının % 12’si ile en düşük seviyeye gerileyerek dönem başı orandan daha az gerçekleşmiştir. Oysa, eğitim yatırımları gelir dağılımındaki adaletsizliği düzeltme, işsizliği azaltma, verimliliği artırma, tarım ve sanayi sektöründe yeni teknolojilere uyumu hızlandırma ve bölgesel kalkınma projelerine önemli destekler sağlamaktadır. Beşeri sermaye yatırımları getirilerinin fiziki sermaye yarımalarından daha yüksek olduğu gerçeğinden hareketle ülkemiz açısından eğitimin öneminin henüz yeterince algılanmadığı söylenebilir<sup>29</sup>.

Genel olarak ülkemizde 2000-2009 yılları arası eğitim harcamalarında hem nominal olarak hem de GSYİH içinde oranı artmıştır. Milli Eğitim Bakanlığı’na yayınlanan verilerden 2000 yılında GSYİH’nin %

<sup>29</sup> E. KARAARSLAN, agm. s.50.



2,6'sını oluşturan bu oran 2011'de %3,8'e yükselmiş olsa da GSYİH'sinin % 6'sını eğitime ayıran ortalama bir OECD ülkesine göre oldukça düşüktür<sup>30</sup>.

**Tablo 4'de** bazı AB ülkeleri ve Türkiye'de eğitim harcamalarında GSYİH içindeki oranları yer almaktadır. Tabloya göre yüzdesi en yüksek olan ülke olma yanında yükseköğretime en fazla harcama yapan ülke Danimarka'dır. GSYİH'daki paylar dikkate alındığında bu ülkeyi İsveç, Finlandiya ve Belçika'nın takip etmiştir. Yükseköğretime ayrılan pay bakımından Danimarka'yı Belçika, İsveç ve Avusturya izlemiştir. Ortalama eğitim süresi yönüyle Portekiz ve İtalya ülkemizden daha kötü durumda olmasına rağmen tüm ülkeler içinde eğitim harcaması- GSYİH içindeki payı en düşük ülkelerden ilk sırayı Türkiye alırken Lüksemburg ve Yunanistan bize en yakın ülkeler arasında yer almıştır<sup>31</sup>.

**Tablo 4: Bazı AB Ülkeleri ve Türkiye'de Öğrenci Başına Eğitim Harcaması GSYH'deki Oranı (2002)**

Ülke	Nüfusun Ortalama Eğitim Süresi	Eğitim Harcaması- GSYİH İçindeki Payı (%)
Almanya	13,4	4,6
Avusturya	11,3	5,8
Belçika	11,2	6,1
Çek. Cum.	12,4	4,4
Danimarka	13,3	8,5
Finlandiya	12,4	6,2
Fransa	10,9	5,7
Hollanda	13,5	5,0
İngiltere	12,7	4,7
İrlanda	12,7	4,3
İspanya	10,3	4,4
İsveç	12,4	7,3
İtalya	9,4	5,0
Lüksemburg	12,9	3,8
Macaristan	11,5	5,1
Portekiz	8,0	5,9
Slovakya	12,5	4,0
Yunanistan	10,5	3,9
<b>Türkiye</b>	<b>9,6</b>	<b>3,7</b>

Kaynak: TÜİK 2005 Yılığında derleyen UMUT TAŞ- Füsün YENİLMEZ, agm. s. 163.

**Tablo 5: Türkiye'de Eğitim Harcamalarının Finansman Kaynaklarına Göre Dağılımı (2002)**

Finansman Kaynağı	%
Merkezi Hükümet	64
Hane Halkı	33
Özel ve Tüzel Kişi ve Kuruluşlar	2
Yerel İdareler	1

Kaynak: TÜİK 2005 Yılığında derleyen Umut TAŞ Füsün YENİLMEZ, agm. s.179.

**Tablo 5'de** eğitim harcamalarının ülkemizde ağırlıklı olarak merkezi hükümet tarafından gerçekleştirilirken ikinci sırayı oldukça yüksek bir oranla hane halklarının aldığı görülmektedir. Özel ve tüzel kuruluşlar ile yerel yönetimlerin payının ise çok düşük olduğu tespit edilmiştir<sup>32</sup>. Milli Eğitim Bakanlığı kaynaklı verilerden; eğitim harcamalarının 2000 yılı itibarıyla GSYİH'nin % 2,6'sını oluştururken bu oran 2011'de %3,8'e yükselmiştir. Ancak, bu harcama oranı, genel olarak GSYİH'sinin % 6'sını eğitime ayıran ortalama bir OECD ülkesine göre oldukça düşük kalmaktadır. Ancak, Türkiye'deki kamusal eğitim harcamaları yanında eğitime yönelik hane halklarının katkıları da önemli bir yer tutmaktadır. 1994 yılında yapılan Hanehalkı Gelir ve

<sup>30</sup> Dünya Bankası, **Türkiye'de Temel Eğitimde Kalite ve Eşitliğin Geliştirilmesi Zorluklar ve Seçenekler**, İnsani Kalkınma Departmanı Avrupa ve Orta Asya Bölgesi 30 Haziran 2011, Rapor No: 54131, s. 24-25.  
<<http://siteresources.worldbank.org/TURKEYINTURKISHEXTN/Resources/455687-1326904565778/EducationQualityReport2011-tr.pdf>>, (28.04.2014).

<sup>31</sup> Umut TAŞ-Füsün YENİLMEZ, a.g.m. s.162-163.

<sup>32</sup> Umut TAŞ-Füsün YENİLMEZ, a.g.m. s.178.

Tüketim Harcamaları Anketi'nde (HGTHA) hesaplamalarının milli muhasebe yaklaşımıyla ele alındığında, eğitim alanına ayrılan özel finansal kaynakların toplam finansal kaynaklara oranla yaklaşık % 36'sını oluşturduğu hesaplanmıştır. Yine, 2006 yılı itibarıyla ülkemizin tüm OECD ülkeleri içinde eğitime özel finansman sağlamada GSYİH bazında Kore, ABD, Kanada ve Japonya'nın ardından beşinci sırada olduğu belirtilmiştir. Özellikle Türkiye'deki aileler çocuklarının eğitimi için, ortalama bir OECD ailesine göre, gelirleriyle kıyaslandığında, iki kat daha fazla para harcadığı, üniversite öncesi eğitim kurumlarının (okul öncesi, ilköğretim, orta öğretim) % 95'inin devlete bağlı ve ücretsiz olmasına rağmen, bu yatırımın yaklaşık üçte ikisi ilk ve orta öğretim seviyesinde yapılmaktadır<sup>33</sup>.

**Tablo 6'da** 1997-2010 yılları arasında MEB bütçesinde yatırımlara ayrılan paylar görülmektedir. 1998'de %30 seviyesinde gerçekleşmesini özel bir durum olarak kabul etmek gerekir. Bu artış sekiz yıllık eğitime geçişte kullanılan iç dış finansal desteklerden kaynaklanmıştır. Sonraki yıllarda eğitime yönelik yatırım harcamaları sistem yerleştikçe hızla doğal sınırlarına çekildiği görülmektedir. Ancak, 2004'den itibaren dönem sonuna kadar tek haneli rakamlara inmiş ve 2008'deki %5,66 ile 2009'daki %4,57'ye kadar düşmesi hariç) kısmi azalma düzeyi şeklinde seyir izlemesine rağmen, bu durumu devletin eğitim yatırımlarından çekildiğine yorumlamak yerine özellikle bir takım yasal düzenlemelerle özel yatırımların teşvikine verilen önemle açıklamak mümkündür. Öyle ki; ilköğretimde, 2004- 2010 yılları arasında kapsayan beş öğretim yılı itibarıyla öğrenci sayısı 10,4 milyondan 10,7 milyona çıkarken resmi okul sayısı 34.937'den 32.431'e düşmüştür. Aynı dönem özel okulların sayısı ise 674'ten 879'a yükselmiştir (MEB İstatistikleri, Örgün Eğitim). Resmi eğitim sistemindeki okul sayısının azalmasına bağlı olarak sınıf mevcutlarının arttığı veya ikili öğretimin yaygınlaştığı, yatırım yapılmayan ve ödeneklerin zorunlu ihtiyaçlar için bile yetersiz hale geldiği her türlü durumda eksikliğin telafisi için bir yandan velilerin doğrudan harcamalara katıldığı, diğer yandan da dershanelere ve kurslara yöneldiği bilinmektedir. Böylece, eğitimde hem yatırımların hem de giderlerin özelleştirilmesi, eğitimde piyasalaşmayı iki yönlü olarak desteklemiştir. Eğitim-Sen tarafından 2010-2011 öğretim yılı başında hazırlanan "eğitimin durumu raporunda"; ailelerin öğrenci başına bir yılda yaptıkları harcamalar 3 bin TL'den fazla olduğu tespit edilmiştir. Bu harcamalar sadece ilköğretim öğrencilerini ilgilendiren; kırtasiye, kitap, kıyafet gibi olağan öğrenci harcamalarının yanında, bağış adı altında kayıt parası, katkı payı, servis ücreti ve kurs ücreti vb. giderleri de kapsayan yaklaşık 40 kalemden oluşmaktadır. Ortaöğretimdeki öğrenciler için yapılan harcamanın bu toplamdan %30 daha fazla olduğu tahmin edilmektedir. Öyle ki; biri ilk, diğeri ortaöğretimde iki çocuğu olan bir ailenin yıllık ortalama eğitim harcaması 7.200 TL'ye yaklaşmaktadır<sup>34</sup>.

**Tablo 6: Milli Eğitim Bakanlığı Bütçesinden Yatırımlara Ayrılan Pay**

Yıllar	MEB Bütçesi (TL)	MEB Yatırım Bütçesi (TL)	MEB Bütçesinden Yatırıma Ayrılan Pay (%)
1997	512.234.445	76.884.950	15,01
1998	1.243.108.000	373.262.000	30,03
1999	2.131.808.500	408.341.000	19,15
2000	3.350.330.000	666.782.000	19,90
2001	4.046.305.625	779.855.000	19,27
2002	7.460.991.000	1.281.690.000	17,18
2003	10.179.997.000	1.479.050.000	14,53
2004	12.854.642.000	1.244.150.000	9,68
2005	14.882.259.500	1.230.306.000	8,27
2006	16.568.145.500	1.411.498.000	7,49
2007	21.355.534.000	1.490.000.000	6,98
2008	22.915.565.000	1.296.704.000	5,66
2009	27.446.778.095	1.256.188.195	4,57
2010	28.237.412.000	1.785.327.000	6,32

**Kaynak:** MEB İstatistikleri, Örgün Eğitim, 2009-2010 verilerinden D. K. DEMİRER tarafından derlenmiştir.

<sup>33</sup> Dünya Bankası İnsani Kalkınma Departmanı (Avrupa ve Orta Asya Bölgesi), **Türkiye'de Temel Eğitimde Kalite ve Eşitliğin Geliştirilmesi: Zorluklar ve Seçenekler Türkiye'de Temel Eğitimde Kalite ve Eşitliğin Geliştirilmesi Zorluklar ve Seçenekler**, Rapor No: 54131-TRThe World Bank 1818 H Street, NW Washington, DC 20433, USAThe International Bank for Reconstruction and Development The World, s.24-25

<sup>34</sup> Derya KESKİN DEMİRER, **Eğitimde Piyasalaşma ve Öğretmen Emeginde Dönüşüm**, s.176-177.

< <http://www.Calismatoplum.org/sayi32/demirer.pdf>>, 12.05.2014.

**Tablo 7'deki** bilgiler TÜİK'in "2005 İstatistik Yıllığı" nda yer alan eğitim harcamaları araştırmasına dayanmaktadır. 2002 yılı baz alındığında; eğitime yapılan toplam harcamalar içinde en büyük payı kamu kesiminin yaptığı harcamaların oluşturduğu görülmektedir. Bu harcamaların içeriğinde okul öncesi eğitimden yükseköğretim dahil tüm aşamaları kapsamaktadır. Toplam harcamalar içinde ikinci sırayı hane halklarının yaptığı harcamalar almaktadır. Özel- tüzel kişi ve kuruluşlarla yerel idarelerin ise katkılarının oldukça düşük seviyede kaldığı da dikkati çekmektedir<sup>35</sup>.

**Tablo 7: 2002 Türkiye Eğitim Harcamalarının Finansman Kaynaklarına Göre Miktarı ve Dağılımı**

Harcamanın Yapıldığı Birim	Toplam Harcama Miktarı(TL)	(%)
Toplam	20.155.207.668.725.300	100,00
Merkezi Devlet	13.062.138.408.263.000	64,81
Yerel İdareler	141.042.192.628.948	0,70
Özel-Tüzel Kişi ve Kuruluşlar	313.006.080.551.370	1,55
Hane halkı	6.620.064.983.244.140	32,85
Uluslararası Kaynaklar	18.956.004.037.845	0,09

**Kaynak:** Umut TAŞ-Fusun YENİLMEZ, agm. s.178. (Türkiye Eğitim Harcamaları Araştırması, TÜİK, 2006).

**Tablo 8'den** görüldüğü üzere ilköğretimden lise ve yükseköğretime kadar her aşamada öğrenci başına düşen eğitim harcamalarının kamu ağırlıklı biçimde gerçekleşmektedir. En büyük eğitim harcaması sayıca çok olmaları ve sekiz yıla yayılması nedeniyle ilköğretim düzeyindeki öğrencilere yapılmaktadır. İkinci sırada yükseköğretim düzeyindeki öğrencilere yapılan harcamalar oluşturmaktadır. Lise düzeyinde de meslek liselerinin hem öğrenci sayısı bakımından hem harcama bakımından düşük seviyelerde olması dikkat çekicidir. İlköğretimden lise düzeyine kadar öğrenci başına harcama tutarlarının tamamına yakını kamu ağırlıklı olduğu, özel harcamaların payı ise %1 bile ulaşmadığı söylenebilir. Ancak yükseköğretimde kamu ve özel harcama bakımından kamu ağırlıklı olmakla birlikte özel harcamaların %50 gibi yüksek bir seviyede olduğu görülmektedir.

**Tablo 8: Eğitim Seviyelerine Göre Öğrenci Başına Düşen Eğitim Harcaması (2002)**

Okul Türü	Öğrenci Sayısı	Kamu Harcaması	Özel Harcamalar	Toplam (Milyon TL)
İlköğretim	10.331.619	7.278.038.742	388.467.612	7.666.506.354
Genel Lise	2.053.735	2.855.484.918	149.361.334	3.004.846.252
Lise Dengi Meslek Okulu	981.224	1.973.376.336	3.766.430	1.977.142.766
Yüksek Okul-Fakülte ve Lisansüstü	1.918.843	4.207.303.190	2.366.608.045	6.573.911.235

**Kaynak:** TÜİK 2005 Yılığında derleyen UMUT TAŞ-Fusun YENİLMEZ a.g.e. s.179.

**Tablo 9'a** göre konsolide bütçe içinde eğitim harcamaları payında yıllar göre önemli değişim görülmemekte sadece 1998 ve 2001 yıllarında yaşanan ekonomik krizden etkilendiğini ve sürekli bir düşüş yaşanmakla birlikte dönem sonu itibarıyla toparlanma sürecine girildiği başlangıç değerlerine ulaşıldığı görülmektedir. GSMH içinde eğitim harcamaları seyrinin ise kriz dönemlerinde dahi önemli bir azalma olmadığı, kamu harcamalarıyla giderilmeyen ihtiyaçların genellikle hane halkları tarafından telafi edildiğini söylemek mümkündür. Konsolide Bütçe / GSMH ilişkisi yönünden kriz yaşanan dönemlerde kamu eğitim harcamalarındaki azalma dolayısıyla oransal olarak önemli düşüşler yaşanmaktadır (2002 yılında olduğu gibi).

**Tablo 9: Konsolide Bütçe ve GSMH İçinde Eğitim Harcamalarının Değişimi (%)**

Yıllar	1997	1998	1999	2000	2001	2002	2003	2004
Konsolide Bütçe İçinde Eğitim Harcamalarının Payı	11,94	12,38	11,79	10,10	8,71	9,64	10,30	11,82

<sup>35</sup> Umut TAŞ-Fusun YENİLMEZ, a.g.m. s.178.

GSMH İçinde Eğitim Harcamalarının Payı	3,27	3,61	4,23	3,76	3,98	4,05	4,06	4,00
Konsolide Bütçe/GSMH	7,39	9,18	5,88	7,19	5,66	2,06	9,38	3,83

Kaynak: Erkan KARAARSLAN, agm. s. 45.

**Tablo 10: 2002 Türkiye’de Eğitim Harcamalarının Hizmet Sunucularına Göre Miktarı ve Dağılımı**

- Hizmet Sunucuları	- Hizmete Ayrılan Miktarı (Milyon TL)	- Toplam Harcamalarda İçindeki Payı (%)
- Örgün Eğitim (açık ilköğretim, açık lise, AÖF dahil )	18 682 430 396	9 2,69
- Yaygın Eğitim	373 953 093	1, 86
- Hizmet İçi	43 971 612	0, 22
- Borç Hizmetleri	105 067 038	0, 52
- Özel Dersaneler	623 191 660	3, 09
- AR-GE Harcamaları	49 182 221	0, 24
- Lise Mezunu Olup Üniversiteye Hazırlanan	277 411 649	1, 38
- Tüm Hizmet Sunucularına Ait Toplam Harcama Miktarı	20 155 207 669	1 00

Kaynak: OECD, “Public Spending on Education”, < <http://www.oecd.org/dataoecd/45/48/37864432.pdf> > derleyen Işıl AKGÜL- Selin Ö. KOÇ, agm. s. 6.

**Tablo 10’dan** de görüldüğü üzere eğitim alanında yapılan harcamalar kapsamında en önemli harcama kalemini %92’ler seviyesinde örgün eğitim için yapılan harcamaları kapsamaktadır. Okul öncesi eğitimden başlayıp üniversite veya lisansüstü eğitimi de içine alan bu sürecin finansmanı genellikle kamu kesimince gerçekleştirilmektedir. Özel dersanelere için yapılan harcamalar ikinci sırada olmakla birlikte yaygın eğitim ve üniversiteye hazırlananların harcamaları üçüncü ve dördüncü sırada gelmektedir. Özellikle hizmet içi eğitim ve AR-GE harcamalarının ise çok düzeyde olduğu görülmektedir<sup>36</sup>.

**Tablo 11:Toplam Eğitim Bütçesinin Konsolide / Merkezi Yönetim Bütçe Payı (%)**

1997	1998	2001	2002	2003	2006	2007	2008	2009	2010	2011
11,1	11,1	11,2	10,1	9,2	11,8	13,6	13,6	14,0	13,1	14,6

<sup>36</sup> Işıl AKGÜL- Selin Ö. KOÇ, “Türkiye Cumhuriyeti Tarihinde Eğitim Ve Büyüme İlişkisi: Eşik Otoregresif Yaklaşımı”, Trakya Üniversitesi Sosyal Bilimler Dergisi Aralık 2011 Cilt 13 Sayı 2 (1-36), s.6.

**Kaynak:** Işıl AKGÜL- Selin Ö. KOÇ, agm. s.6.

**Tablo 11’de** toplam eğitim bütçesinin konsolide / merkezi yönetim bütçesi payının dönem başlangıcı ve dönem sonu itibarıyla 2002- 2003 yılları haricinde önemli bir düşüş yaşanmamakla birlikte 2006 ve sonrası yıllarda genellikle artış yönlü bir seyir söz konusudur. Ancak ülkemizde eğitim alanında yapılan harcamalar personel giderleri kapsamında yeni öğretmen atamalarına yönelik olmakta eğitimin mevcut standardı korunurken iyileştirme ve yenilikler açısından daha yapılması gereken hedeflerin gerisinde kalmıştır. 21. yüzyılda insan sermayesinin geliştirilmesinin ülke açısından önemi her platformda dile getirilerek gündem oluşturulmalıdır. Eğitime ayrılan payın arttırılmasının ülkelerin ekonomik durumunu güçlendirmenin en etkili yolu olduğu bilinciyle nitelikli eğitim hizmeti sunumunda devlet öncülüğünde kamu ve özel kesim işbirlikleri, sivil toplum kuruluşlarınca sürdürülebilmesi için teşvikler uygulanmasına çalışılmalıdır.

**Tablo 12’de** GSYİH içindeki yıllara göre oransal değişimi incelendiğinde 1998- 2001 yıllarında yaşanan ekonomik kriz nedeniyle kısmi bir düşüş olmakla birlikte eğitimin gerek zorunlu olması ve gerekse hane halklarının başka harcamalarından vazgeçmekle birlikte eğitim için büyük fedakarlık sergilemeleri nedeniyle düzenli bir artış eğilimi görülmektedir.

**Tablo 12: Toplam Eğitim Bütçesinin GSYİH Payı (%)**

1997	1998	2001	2002	2003	2006	2007	2008	2009	2010	2011
2,4	2,3	2,3	2,8	3,0	3,0	3,3	3,2	3,8	3,4	3,8

**Kaynak:** Işıl AKGÜL- Selin Ö. KOÇ, agm. s.6.

**Tablo 13’de** ayrıntısı görülen, ailelerin sınavlara hazırlık için yaptığı 16,7 milyar TL’lik harcama, aynı yılın MEB Bütçesinin (28,2 milyar TL) yaklaşık olarak %60’ına karşılık gelmektedir. Ayrıca, sınava hazırlık için harcanan bu kaynaklar 2010 yılı yükseköğretim ve üniversiteler bütçesinin (9,4 milyar TL) yaklaşık iki katına yakındır. Sadece üniversiteye giriş sınavları için yapılan harcamalar (8,6milyar TL) toplam yükseköğretim bütçesine yakın bir büyüklüktedir. Ailelerin eğitime yaptıkları harcamaların tümünü gösteren bir veriye ulaşmak mümkün olmamakla birlikte, eldeki sınırlı veriler dahi, Türkiye’de eğitimin kamusal hizmet ağırlıklı olmakla birlikte yetersiz olduğu gerçeğinden hareketle ailelerin eğitime büyük önem verdiğini, bütçelerindeki diğer harcamaları kesmek pahasına dahi olsa eğitime kaynak aktarmaya çalışmaktadırlar<sup>37</sup>.

**Tablo 13: Türkiye Geneline Ortaöğretim ve Yükseköğretime Geçişte Ailelerin Yaptığı Harcamalar**

Harcamanın yapıldığı düzey / Harcama türü	Harcama miktarı (TL)
Ortaöğretime geçiş	8.082.838.965
Yükseköğretime geçiş	8.626.472.774
<b>Toplam</b>	<b>16.709.311.739</b>
Dershane	5.707.811.064
Test-kitap	2.160.968.761
Etüt-Kurs	1.267.398.136
Diğer harcamalar	5.198.178.895
Özel ders	2.374.954.883

**Kaynak:** Türk Eğitim Derneği, 2010: age. 51.

**Tablo 14: Özel Öğretim Kurumlarında Okul, Öğrenci, Öğretmen ve Derslik Sayısı (2009/2010)**

Eğitim Kademesi	Okul/Sınıf/Kurum Sayısı	Öğrenci Sayısı	Öğretmen Sayısı	Derslik Sayısı
<b>Genel Toplam</b>	<b>15.944</b>	<b>3.664.072</b>	<b>134.013</b>	<b>116.191</b>

<sup>37</sup> Türk Eğitim Derneği, Ortaöğretime ve Yükseköğretime Geçiş Sistemi, Özet Rapor ISBN 978-9944-5128-8-6, 1. Basım, Mayıs 2010, Ankara, [http://portal.ted.org.tr/genel/yayinlar/ortaogretimeveyuksekogretimegecissistemi\\_ozet\\_rapor.pdf](http://portal.ted.org.tr/genel/yayinlar/ortaogretimeveyuksekogretimegecissistemi_ozet_rapor.pdf), 26.05.2014.

<b>Örgün Eğitim Toplamı</b>	<b>4.670</b>	<b>458.108</b>	<b>51.639</b>	<b>38.204</b>
Okul öncesi eğitim	3.060	87.919	7.579	11.977
İlköğretim	879	251.967	27.631	17.952
Ortaöğretim	731	118.222	16.429	8.275
Genel ortaöğretim	709	116.619	16.112	8.126
Mesleki ve teknik	22	1.603	317	149
<b>Yaygın Eğitim Toplamı</b>	<b>11.274</b>	<b>3.205.964</b>	<b>82.374</b>	<b>77.987</b>
Özel dershaneler	4.193	1.174.860	50.432	43.445
M. taşıt sürücü kursları	2.889	1.529.268	17.198	8.160
Muhtelif kurslar	1.895	264.063	3.973	7.199
Özel eğitim-rehabilitasyon.	1.656	199.594	9.770	17.613
Özel özel eğitim okulu	136	22.562		
Özel etüt eğitim merkezi	495	15.617	1.101	1.570

**Kaynak:** MEB İstatistikleri, Örgün Eğitim 2009-2010, s.35'den alınmıştır.

**Tablo 14'de** hane halklarının özel kesimden çeşitli amaçlarla aldığı eğitim hizmetleri hakkındaki verilerden özel kurum sayısı 5. bine, öğrenci sayısının ise 500 bine yaklaştığı görülmektedir. Aynı şekilde yaygın eğitimdekilerle birlikte özel öğretim kurumlarının sayısı 16 bine ulaşmıştır. Bu kurumlarda 4 milyona yakın öğrenci ve kursiyer sayısı ile büyük bir kitle oluşturduğu dolayısıyla önemli bir yatırım alanı oluşturduğunu söylemek mümkündür. 134 bini aşan öğretmen için istihdam alanı söz konusudur. Öyle ki; günümüzde ve gelecekte eğitim alanında devlete büyük görev ve sorumluluk yüklerken özel kesime de büyük fırsatlar sağlayacağı şüphesizdir. Bu nedenle devletin çeşitli teşviklerle sayıları arttırılmakta olan özel okulların yanında, yaygın eğitim, yaşam boyu eğitim gibi kişisel gelişime katkısı olan faaliyetlerin yaygınlaştırılmasına yönelik çeşitli kurslar ve özel eğitim kurumlarının kurulması vb. eğitimin her kademesinin desteklenmesi gerekmektedir<sup>38</sup>.

**Tablo 15 ve Tablo 16** birlikte incelendiğinde; eğitime yönelik çeşitli faaliyetlerin ülkemiz ve OECD ülkelerindeki durumu hakkında önemli bilgilere ulaşılmaktadır. 2002 yılında Türkiye'de eğitim kademelerine göre öğrenci başına düşen harcamaları dağılımının okulöncesi eğitimde 171 Dolar, ilköğretimde ise 488 Dolar olarak hesaplanmıştır. Öğrenci başına düşen eğitim harcamalarının OECD ortalaması okulöncesi eğitimde 4187 Dolar iken ilköğretim düzeyinde 4850 Dolar olduğu görülmektedir. Bu verilerden ülkemizin eğitim alanında gelişmelerin çok yetersiz olduğu söylenebilir. Son on yılda başta ilköğretimde ders kitaplarının ücretsiz dağıtımı, yükseköğretimde harçların kaldırılması, yükseköğretimde öğrenim bursların artırılması ve yurtların sayı ve kalitesinin artırılması, liselerin üç yıldan dört yıla çıkarılması, okulöncesi eğitimin zorunlu hale getirilmesi, öğretmen atamalarındaki artış, yeni üniversitelerin kurulması vb. alandaki düzenlemeler nedeniyle eğitime önem verildiğini söylemek mümkündür. Ancak, gelişmiş ülkeler bazında yapılan karşılaştırmalarda ülkemizin henüz istenilen düzeye çıkarılması için çok çalışılması gerektiği unutulmamalıdır<sup>39</sup>.

**Tablo 15: Türkiye'de Okul Öncesi ve İlköğretimde Öğrenci Başına Harcamaların Dağılımı (2002)**

Eğitim Kademesi	Harcama (TL)	Harcama (\$)
Okulöncesi Eğitim	260.017.3	171
İlköğretim	742.043.077	488

**Kaynak:** TÜİK, 2002'den aktaran Meral TANER DERMAN - Handan Asude BAŞAL, agm. s.562.

<sup>38</sup> Milli Eğitim Bakanlığı, **Milli Eğitim İstatistikleri : Örgün Eğitim 2009-2010**,

< [http://sgb.meb.gov.tr/meb\\_iys\\_dosyalar/2012\\_12/06020939\\_meb\\_istatistikleri\\_organ\\_egitim\\_2009\\_2010.pdf](http://sgb.meb.gov.tr/meb_iys_dosyalar/2012_12/06020939_meb_istatistikleri_organ_egitim_2009_2010.pdf)>, 26.06.2014.

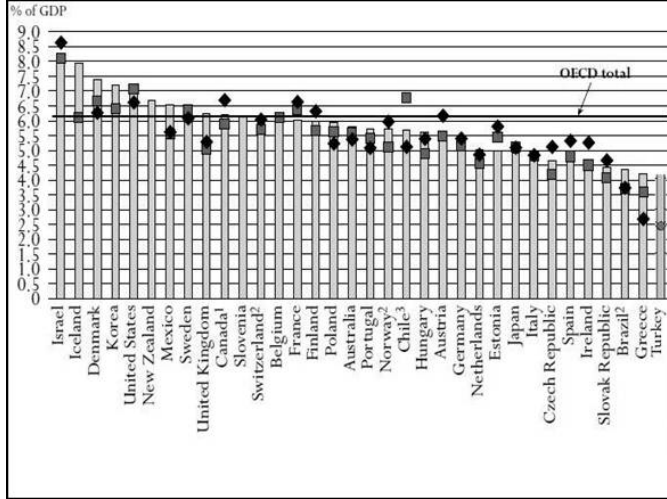
<sup>39</sup> Meral TANER DERMAN- Handan Asude BAŞAL, **Cumhuriyetin İlanından Günümüze Türkiye'de Okul Öncesi Eğitim ve İlköğretimde Niceliksel ve Niteliksel Gelişmeler**, Uluslararası Sosyal Araştırmalar Dergisi, (The Journal of International Social Research Volume 3 / 11 Spring 2010), s.562-564,<[www.sosyalarastirmalar.com/cilt3/.../taner\\_meral\\_handanbasal.pdf](http://www.sosyalarastirmalar.com/cilt3/.../taner_meral_handanbasal.pdf)>, 01.06.2014.

**Tablo 16: 2001 Yılı Bazı OECD Ülkelerinde Okul Öncesi ve İlköğretim Eğitim Harcamaları (USD)**

Ülkeler	Okulöncesi Eğitim Harcamalar	İlköğretim Eğitim Harcamaları
Almanya	4.956	4.237
İngiltere	7.595	4.415
Portekiz		4.181
İspanya	3.608	4.168
İtalya	5.972	6.783
Kore	1.913	3.714
Brezilya	1.044	832
Malezya	611	1.562
<b>OECD Ortalaması</b>	<b>4.187</b>	<b>4.850</b>

**Kaynak:** OECD: Education at a Glance 2004 ile. Milli Eğitim Plan Rapor Taslağı, 2005'den aktaran Meral TANER DERMAN - Handan Asûde BAŞAL, agm. s.564.

**Şekil 2: OECD Ülkelerinde Eğitim Harcamalarının Genel Görünümü**



**Kaynak:** OECD, Education at a Glance 2007 (Türkiye için) ve Education at a Glance 2008 (diğer ülkeler) şekillerinden düzenlenmiştir. OECD Publications, 2007 (s. 194) ve 2008 (s. 226)'den aktaran N. Özker- Ç. Esener, agm.

Şekil 2'de OECD ülkelerinde GSYİH içinde kişi başına eğitim harcama oranlarına yer verilmiş olup eğitim harcamalarına bakımından, ülkemizin seçilmiş OECD ülkeleri içinde en düşük paya sahip olduğu görülmektedir. Türkiye, kişi başına eğitim harcamasında OECD ortalamasının yarısı düzeyinin bile altındadır. GSYİH içerisinde eğitim harcamalarının OECD ülkeleri bazında ve ilgili yıllar itibariyle ortalama %6,2 civarında olduğu, ülkemizden sonra en düşük seviyeye sahip olan ülke Yunanistan'dır. Türkiye'de GSYİH içerisinde eğitim harcamaları hususunda yaşanan bir başka sorun yıllara göre bir istikrar olmamasıdır. Örneğin mevcut veriler incelendiğinde 1995'de GSYİH içinde %4,1 düzeyinde olan eğitim harcamalarının payı 2004 yılında %2,4 düzeylerine kadar düşebilmektedir<sup>40</sup>. Türk Eğitim Sistemi 2012-13 eğitim-öğretim yılında toplam

<sup>40</sup> Niyazi ÖZKER- S. Çağrı ESENER, Türkiye'de Bir Kamu Harcaması Olguğu Olarak Eğitim Harcamaları: Örnek Ülkeler İle Yakın Dönem Karşılaştırma, < <http://www.mevzuatdergisi.com/2009/10a/02.htm>>, 31.05.2014.

öğrenci sayısının 21,9 milyona ulaşmıştır. Bunlardan 1,1 milyonu okul öncesine, 5,6 milyonu ilkökula, 5,6 milyonu ortaokula, 2,7 milyonu genel liseye, 2,3 milyonu mesleki ve teknik liseye devam etmektedir. Kız öğrencilerin ilkökuldaki oranı %48,8, ortaokuldaki oranı %49,4 ortaöğretimdeki oranı da %47,1'dir. İlkokul, ortaokul, ortaöğretim ve yükseköğretimde brüt okullaşma oranları 2012-13 eğitim ve öğretim yılı için sırasıyla %107,52, %107,64, %96,77, %74,86 net okullaşma oranları ise ilkökulda %98,86, ortaokulda %93,09, ortaöğretimde %70,06 ve yükseköğretimde %38,50 olarak gerçekleşmiştir. Yaygın eğitim veren kurum sayısı 2010-11 öğretim yılında 23 224'dür<sup>41</sup>.

Ülke nüfusunun yaklaşık %30'unu aşan bölümünü oluşturan ve aynı zamanda ülke geleceğinin teminatı olan genç nüfusun niteliğinin geliştirilmesi, gelişmiş ülkeler düzeyine ulaştırmak için devletin yeterli kaynak ayırmak hususunda en büyük yürütücü ve sorumlu olduğu bilinmektedir. Devletin eğitimde çağdaş yaklaşımlar doğrultusunda mevcut ve gelecekteki gelişmelere uyumlu ve esnek yapıli politikalar üreterek uygulamada özel kesim paylaşımlı biçimde davranmak ya da denetlemek suretiyle aktif görev alması gerekmektedir. Eğitimin sadece devletin sorunu olarak görülmeyip, toplumun kamu-özel tüm kesimleri ile kurum ve kuruluşlarınca sahiplenilmesi gereken bir sorun olduğu bilinciyle davranılması gerekmektedir.

**Tablo 17'de;** Birleşmiş Milletlerin, Beşeri Kalkınma Endeksi hazırlığında kullandığı kıstaslar dikkate alınarak 1991-2007 döneminde Türkiye'deki beşeri kalkınma-eğitim göstergeleri yer almaktadır. Dönem başlangıcı ile dönem sonu veriler arasında sıralamada zamanla istikrarlı bir yükseliş olmakla birlikte ve önemli bir iyileşmeden söz etmek mümkün değildir. Türkiye'nin ekonomik büyüme oranını yükseltebilmesi konusunda en önemli eksikliği eğitimidir. Büyüme ve kalkınma iktisatçıları; eğitimli beşeri sermayenin ekonomik büyüme ve kalkınmaya önemli katkısı olduğu noktasında birleşmektedirler. *Üretim süreçlerinde, kas gücünün yerini ileri teknoloji kullanabilen eğitilmiş kalifiye bir işgücü ile yüksek katma değerlere ulaşılması mümkündür.* Türkiye'nin eğitim çabalarının yetersiz olduğu, bu konuda gelişmiş ülkelerin gerisinde kaldığı bilinciyle hükümet tarafından hem günümüz hem de gelecek açısından kalkınma planları ve yıllık programlarında konuyu ivedilikle ele almaları gerekmektedir<sup>42</sup>.

**Tablo 17: Türkiye'nin Beşeri Kalkınma- Eğitim Göstergeleri (1991-2007)**

Yıllar	Ortalama Yaşam (Yıl)	15 Yaş Üstü Okur-Yazar Oranı (%)	Okullaşma Oranı (%)	Eğitim Endeksi	Beşeri Kalkınma Endeksi
1991	65,1	80,7	-	-	0,674
1992	66,7	81,9	-	-	0,792
1993	66,5	80,5	61	-	0,711
1994	68,2	81,6	63	-	0,772
1995	68,5	82,3	60	0,72	0,782
1997	69,0	83,2	61	0,73	0,728
1998	69,3	84,0	61	0,74	0,732
1999	69,5	84,6	62	0,74	0,735
2000	69,8	85,1	62	0,75	0,742
2001	70,1	85,5	60	0,75	0,734
2002	70,4	86,5	68	0,76	0,751
2003	68,7	88,3	68	0,73	0,750
2004	68,9	87,4	69	0,73	0,757
2005	71,4	87,4	69	0,77	0,775
2007	71,7	88,7	71	0,78	0,806

**Kaynak:** Abdullah KESKİN, agm. s. 135.

Eğitimin ekonomik etkileri hakkında her biri ayrı inceleme konusu olmakla birlikte bu çalışma kapsamında genel bir değerlendirme ve bilgilendirme yapılmıştır. Bu bağlamda *eğitimin ekonomik etkileri* şu şekilde özetlenebilir:

**- Eğitimin kalkınmaya etkisi;** sürekli büyüme yanında ülke ekonomisinin yapısal değişim ve gelişmişliğinin göstergesi olan kalkınmayı gerçekleştirmesinde en büyük katkısı olan unsurların başında eğitim gelmektedir. Eğitimli bir toplumdaki ekonomik, sosyal ve siyasal alanda alınacak kararların isabetlilik düzeyini artırdığı gibi

<sup>41</sup> [http://www.amasyaplanlama.gov.tr/ortak\\_icerik/amasyaplanlama/RAKAMLAR%20NE%20DIYOR.pdf](http://www.amasyaplanlama.gov.tr/ortak_icerik/amasyaplanlama/RAKAMLAR%20NE%20DIYOR.pdf), 05.04.2014.

<sup>42</sup> Abdullah KESKİN, "Ekonomik Kalkınmada Beşeri Sermayenin Rolü Ve Türkiye" Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi, Cilt: 25, Sayı: 3-4, 2013, s. 134-135.



bu kararların kolay uygulanabilirliği ile verimlilik ve etkinlik açısından olumlu sonuçların elde edilmesini sağlayabilmektedir.

- **Eğitimin değişim etkisi;** bilimsel ve teknolojik ilerlemeler ve yeniliklerden yararlanmak bakımından kullanıcı kitlelerin yeterli bilgi ve beceriye sahip olmaları gerekmektedir. Özellikle işgücünün nitelikli hale getirilmesi hem gelişmiş hem de gelişmekte olan ülkelerin ortak sorunudur. Bu sorunun çözümünde ana unsuru doğru eğitim politikaları oluşturmaktadır. Öyle ki; dünyanın en zengin ülkesi ile en fakir ülkesi arasındaki ortalama gelir düzeyi karşılaştırıldığında, 19. yüzyılda 1/9, 20. yüzyılda ise 1/60 gibi çok farklı bir orana ulaşmıştır. Ülkeler arasındaki bu ekonomik farklılık ve hayat standardındaki aşırı uçurumun temel nedeni eğitimden kaynaklanmaktadır. *Eğitim seviyesinin yükselmesi mevcut kuşakların yaşam kalitesini yükseltirken gelecek kuşakların yaşam koşullarını güvence altına alınmasını sağlayabilecektir.*

- **Eğitimin istihdama etkisi;** yirminci yüzyılın son çeyreğinden itibaren etkisi yoğun biçimde görülmeye başlayan küreselleşme süreci ekonomi alanında yeni yaklaşımların geliştirilmesine neden olmuş literatüre "bilgi ekonomisi", "siber ekonomi" gibi yeni kavramların katılmasına neden olmuştur. Dünya genelinde yaşanan bu değişim ve gelişim süreci "Bilgi Çağı" olarak adlandırılmaktadır. Üretimde bilgi ve teknolojiye bağımlılık "nitelikli işgücü"ne olan gereksinimi artırmış dolayısıyla nitelikli insan gücünün yetiştirilmesinin tek yolun eğitim olduğu görüşü önem kazanmıştır. Ulusal ve uluslararası rekabete uyum açısından işletmelerin mal ve hizmetlerini zamanında ve kaliteli olarak üretebilmesi için mutlaka teknolojik gelişmeleri kullanan eğitilmiş ve kaliteli işgücüne ihtiyaç duyacakları unutulmamalıdır.

21. yüzyılın koşullarına uygun işgücüne sahip olunması için okulöncesi eğitimden üniversiteye kadar bütün örgün ve yaygın eğitim yöntemlerinden yararlanılmalıdır. Zorunlu eğitim, mesleki eğitim, kurum içi eğitim, halk eğitim, yaşam boyu eğitim ve yükseköğretim amaçlı örgün ve yaygın eğitim olanaklarının artırılması gerekmektedir. Bu bağlamda Türkiye’de eğitim ve istihdam ilişkisi bakımından 1990 yılı sonrası önemli gelişmeler kaydedilmiştir. TÜİK verilerine göre; 1990’dan 2000 yılına kadar ilköğretim mezunlarının istihdam içindeki payları yaklaşık %20 artarken, üniversite mezunlarının payı yaklaşık %130 artmıştır. Ayrıca eğitim seviyesinin artışı, işgücü verimliliğini yükselttiği gibi aynı zamanda kadınların iş hayatındaki sayılarını da artırmaktadır. Bazı mesleklerin yürütülebilmesi sadece eğitimle mümkün olduğu için eğitimin artışı bu meslekteki kişilerinde sayısını da çoğaltmaktadır.

- **Eğitimin gelir ve gelir dağılımına etkisi;** 21. Yüzyılda dünya genelinde pek çok ülkenin ortak sorununu yoksullukla mücadele oluşturmaktadır. Gelir eşitleyici ve gelir dağılımını iyileştirici özelliği dolayısıyla eğitim, yoksullukla mücadelede en önemli unsurlarından biri olarak sürekli gündemde bulunmaktadır. Eğitimin bu ayrıcalığını özellikle mikro düzeyde bireysel gelir, makro bazda ise ulusal gelir rakamlarında görmek mümkündür. Gelir ile eğitim arasında var olduğu öngörülen ilişkinin geçerliliğini kanıtlamaya yönelik ampirik çalışmalar yapılmaktadır. Gelir dağılımını etkileyen faktörlerin sayısının çokluğu nedeniyle eğitimin gelir dağılımı üzerindeki etkilerini hesaplamak oldukça güçtür. Ancak gelişmiş bir ülkede işgücünün verimliliği, beşeri sermaye yatırımlarının yüksek olmasına dayandığı varsayımıyla kişilerin sahip olduğu gelirler de yükselmektedir. Eğitim düzeyinin gelirdeki etkisi incelendiğinde fert başına ortalama geliri en düşük olan kesimin, okur-yazar olmayanlar ve en yüksek olanların ise yükseköğretim ve fakülte mezunu oldukları yayınlanan ulusal ve uluslararası ulusal verilerde görülmektedir.

Özellikle gelişmekte olan ülkeler açısından eğitim yatırımlarını artırırken fırsat eşitliğine dikkat edilmesi gerekmektedir. Aksi durumlarda gelir dağılımında istenmeyen sonuçlar oluşabilir. Dayıoğlu ve Kasnaoğlu tarafından yapılan bir araştırmada; 1997 yılı itibarıyla (Devlet İstatistik Enstitüsü (DİE) 1994 Hane Halkı Gelir ve Tüketim Anketi verileri eğitim-gelir ilişkisi cinsiyet bazında incelenmiş ve eğitimin geliri belirleyen önemli bir unsur olduğu yanı sıra, kadınların eğitim getirisinin erkeklere göre daha yüksek olduğu tespit edilmiştir. Yine, Tansel tarafından 1994 yılında kentsel ücretliler için yapılan bir çalışmada, DİE 1987 Hane Halkı Gelir ve Tüketim Anketi verileri kullanılmak suretiyle eğitim seviyesindeki artışa bağlı olarak getirinin arttığı sonucu elde edilmiş ve ayrıca ilköğretim ve ortaokul mezunu erkekler için eğitimin getirisinin kadınlara göre daha düşük olduğu tespit edilmiştir. 2003 yılında Özcan ve Üçdoğru tarafından İstanbul ili özelinde yapılan araştırmada ise; eğitim gelir ilişkisi ücretliler ve bağımsız çalışanlar açısından incelenmiştir. Bu çalışmada, ücretli çalışanlar karşısında bağımsız çalışanların eğitime bağlı getirilerinin daha yüksek olduğu yönünde bulgulara ulaşılmıştır. Tansel tarafından 2002 yılında 1989 Nisan ve Ekim ayları DİE Hane Halkı İşgücü Anketi verilerinden yararlanılarak yapılan araştırmada; eğitimin getirisinin, eğitimin süresine bağlı olarak arttığı yönünde bulgular elde edilmiştir. Özellikle ilköğretim seviyesinden sonra alınan her aşamadaki eğitim bir öncekine göre yoksulluk oranlarının düşürülmesinde çok önemli olduğu görülmüştür. Ancak eğitim sistemindeki eşitsizlik yaratan unsurların çoğaltılması, yoksulların eğitim fırsatlarından yararlanmasında önemli engel konumunda olup bu olumsuzlukları önlenmesine yönelik çalışmalara ağırlık verilmesi gerekmektedir.

Bölgeler arasında coğrafi olduğu kadar ekonomik gelişmişlik düzeyi bakımından büyük dengesizliklerin olduğu ülkemizde doğal olarak gelir dağılımında dengesizlikleri gündeme getirmektedir. Ülkemizde düşük gelirli sınıflara sahip bölgelerdeki okur-yazarlık oranlarının düşüklüğü, gelir dağılımının okullaşmanın önünde bir engel oluşturduğunun açık bir göstergesidir. Geleneksel eğitim anlayışı yerine çağdaş eğitim anlayışına geçilmek suretiyle bilim ve teknolojinin takip edildiği, sosyal- siyasal ve ekonomik açıdan küreselleşmenin

gerektirdiği deęişim ve dönüşüme hem kamu hem de özel sektörün hazırlıklı olması gerekmektedir.

Devlet cephesinden eğitimin amaç ve hedeflerine yönelik eğitim reformu için kapsamlı bir plan-programlar hazırlanmalı ve uygulanmalıdır. Söz konusu plan-programlarda toplumun deęişik katmanlarının (endüstri, sivil toplum örgütleri, okul yönetimi ve öğretmenler vb.) desteęinin alınması gerekmektedir. Bir ülkenin ekonomik ve mali yapısının istikrarlı olması ve eğitime ayırdığı payın artması, kişisel- milli gelir dağılımını olumlu yönde etkileyecektir. Eğitime ayrılan pay arttığında kişisel gelirden de artış gerçekleşeceği gibi gelir dağılımında adaletin sağlanması da mümkün olabilecektir.

- **Eğitimin yaşam kalitesine etkisi;** eğitim seviyesinin artışı ile yaşam kalitesinin artışı arasında doğru bir orantı söz konusudur. Eğitimin her bir ileri aşaması, gerek toplum gerekse bireyler üzerinde deęişik seviyelerde olumlu etkiler oluşturmaktadır. Sosyal kalkınma olarak da ifade edilen yaşam kalitesinin yükselmesi sonucu; kurallara uyum, suç oranlarının düşmesine baęlı huzur ve asayişin sağlanması, birey ve toplum saęlığının korunması, ortalama yaşam süresinin yükselmesi, bebek – çocuk ölüm oranlarının azalması vb. olumlu gelişmelerin ülke ekonomisine olumlu yansması söz konusudur. Eğitim ile birlikte kültürel faaliyetlerin de gelişmesi iç ve dış turizm başta olmak üzere tarihi, doęal alanlarda ülkenin tanıtımı, müze, kütüphanelerin ülke çapında yaygınlaşması, resim, sinema, tiyatro gibi sanatsal faaliyetlere verilen önemin artışı ekonomik yönden olumlu etkiler oluşturmaktadır.

- **Eğitimin teknolojiye etkisi;** 1990'lı yıllarla birlikte hız kazanan küreselleşme süreci başta iletişim, ulaşım ve haberleşme olmak üzere pek çok sektörde ulusal ve uluslararası rekabeti tetiklemiştir. Mevcut piyasada kalabilmek veya daha fazla pay alabilmek; nitelikli mal ve hizmet üretmek yanı sıra eğitim düzeyi yüksek ve teknolojiye uyumlu insan gücünün istihdamını gerektirmektedir. Birey ve firmaların piyasa başarısında insan kaynaklarını geliştirme ve etkinliğini arttırmaya yönelik eğitim harcamalarının mutlak katkısı olduđu bilinmektedir. Bilim ve teknoloji uyarılma veya geliştirme konusundaki en önemli göstergelerden birisini Ar-Ge'ye yapılan harcamalar oluşturmaktadır. Ülkemizde Ar-Ge harcamalarının GSMH içindeki payının çok düşük olduđu bilinmektedir. Ar-Ge faaliyetleri dünyada büyük ölçüde özel şirketler çerçevesinde ve üniversitelerle iş birliği halinde yürütülmektedir. Ar-Ge faaliyetlerini sürdürmek adına başta vergi teşviki olmak üzere, araç gereç temininde hibe ve mali yardımların sürdürülmesi, inovasyon, proje pazarları, sanayi-üniversite işbirliği fuar ve festivalleri (Süleyman Demirel Üniversitesinde olduđu gibi SANTEK, SANTEZ), vb. yapılan çalışmalara kadar teknoloji üretimi adına her türlü faaliyete desteęin artırılmasına, "teknoloji ithal eden deęil üreten bir ülke olmak" için hukuki, mali ve ekonomik önlemler ve düzenlemelere ağırlık verilmesi gerekmektedir<sup>43</sup>.

## SONUÇ

Eğitim, okul öncesi ve ilköğretimi içeren temel eğitimden başlayarak lisans ve lisansüstü eğitimi de içine alan formel bir süreç dışında, insanoğlunun doğumdan ölüme kadar yaşamının her alanında sürekli yararlandığı bir hizmet türüdür. Bu sürecin ilk aşamasını oluşturan temel eğitim kamusal bir mal kapsamında olup genellikle devletçe sunulurken ileri aşamalarda özellikle lise- yükseköğretim hizmeti karma mal niteliği ağırlıklı olarak gerçekleştirilmektedir. Bir ülkedeki eğitim düzeyinin yükselmesi başta iktisadi büyüme ve kalkınma olmak üzere kişisel ve milli gelirden artış, istihdamın artırılması vb. açıdan pek çok olumlu etkileri söz konusudur. Yapılan ampirik çalışmalardan; genel olarak eğitimin düzeyinin yükselmesiyle eğitimin getiri oranının arttığı ve temel eğitimin dięer üst eğitim alanlarına göre toplumsal getiri oranının daha fazla olduđu bulgularına ulaşılmaktadır.

Ülkemiz için eğitim ve iktisadi büyüme arasındaki ilişkiyi nicel olarak inceleyen çalışmaların pek çoğunda eğitimin reel milli gelir artışı üzerinde pozitif etkisi olduđu tespit edilmiştir. Örneğin 1980- 1990 yıllarını kapsayan bir çalışmada ortalama eğitime katılım süresindeki artışın sanayi üretimini artırdığı, 1975-2000 yıllarını kapsayan başka bir araştırmada eğitime baęlı ölçülen beşeri sermayenin eşitsizliği bölgeler arasındaki iktisadi büyüme farklılıklarına neden olan en önemli faktördür. Eğitimin birey, firma ve toplumların geleceğine yatırım yapması gibi bir özelliği olmakla birlikte bu alanda yapılan yatırımlar, dięer yatırım türlerine göre geri dönüşü ve getirisi yüksek ancak gecikmeli olma özelliği taşımaktadır. İçinde bulunduğumuz yüzyıl açısından; eğitimin halen devletin asli görevlerinden biri olduđu fakat sadece devlet tarafından yerine getirilebilecek bir hizmet olmaktan çıkarak özel sektör ya da sivil toplum kuruluşlarının hizmet sunumunda daha aktif hale getirilmesi gerektiği fikrini ön plana çıkarmıştır.

Ülkemizde eğitimin tüm aşamalarında devletin ön planda yer alarak en büyük hizmet üreticisi konumunda olduđu ve eğitim harcamaları içinde en büyük payın ilköğretim düzeyine yapıldığı görülmektedir. Özellikle devletin sunduđu hizmeti nicelik ve nitelik yönünden yetersiz olduđu fikrine sahip olan bireyler bütçeleri içinde önemli düzeydeki kaynaklarını eğitime sarf etmekten çekinmemektedirler. Özellikle dar gelirli aileler, toplam bütçelerinden eğitime ayırdığı payın zengin ailelerden daha fazla olduđu bilinmektedir.

<sup>43</sup> Umut TAŞ- Füsün Yenilmez, agm. s.164-170.

Eğitim alanında 1990 sonrası dönem itibarıyla ülkemizde önemli gelişmelerin yaşanmasına rağmen, uluslararası karşılaştırmalarda henüz iyi bir konumda olmadığımız görülmektedir. Konsolide bütçe içinde veya GSMH içinde eğitime ayrılan payın hem Avrupa Birliği hem de OECD ülkeleri ortalamasının oldukça altındaki bir düzeyde bulunmaktadır. Başta AR-GE harcamaları olmak üzere, yükseköğretimden okul öncesi eğitime kadar tüm eğitim aşamalarında ayrılan kaynakların artırılması gerekmektedir. Bu amaçla; eğitim alanına yatırım yapan özel sektörün vergisel avantajlar yoluyla daha çok kaynak kullanmasını sağlamak amacıyla başta Avrupa Birliği ülkelerince benimsenen gelir ve kurumlar vergileri yönünden tam ya da kısmi muafiyet- istisnalar, eğitim giderlerinin ya da eğitim kuruluşlarına yapılan bağış ve yardımların matrahtan indirilebilmesi, kişiler açısından eğitimlerini sürdürebilmek amaçlı elde ettikleri bazı gelirlerin vergi dışı bırakılması vb. hususunda özel düzenlemeleri yapılması veya mevcut düzenlemelerin kapsamının genişletilmesine gidilmelidir.

Ayrıca, özellikle eğitim harcamaları yüksek olan günümüz gelişmiş ekonomilerinde, beşeri sermaye unsurlarına yapılan yatırımlar sayesinde bugünkü gelişmişlik düzeyine ulaştıkları bilinciyle; eğitim harcamaları ve verimliliği artırıcı uzun vadeli ve ülke gerçeklerine uyumlu politikaların geliştirilmesi, mevcut eğitim hizmeti harcamalarının miktarının en az bir kat artırılması, eğitim ile ilgili iktisadi ve mali istatistiklerin yapılması, yayınlanması, dokümanların saklanması, güncellenmesi, herkes tarafından kolay erişiminin sağlanması, üçüncü sektör olarak adlandırılan sivil toplum örgütlerinin sayıca artırılması, eğitim alanında etkin biçimde önemli görevler atfedilmesine yönelik düzenlemelerin yapılmasına çalışılmalıdır.

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# Türkiye’de kentsel bütünleşme sürecinde halk eğitim merkezlerinin araçsal rolü üzerine bir deneme

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## Özet

Kentsel bütünleşme sorunsalı, kentsel alanda yaşanan sosyal ve mekânsal bütünleşmenin sağlanmasında yaşanan güçlüklerle bağlı olarak gerçekleşen bir olgudur. Kentsel bütünleşme sorunsalının çözümünde Halk Eğitim Merkezleri, araçsal bir rol üstlenebilir. Bu merkezlerin kuruluş amaçları arasında kentlileri geliştirmek, kırdan göç edenlerin kentsel uyumunu sağlamak, bireyleri daha yetkin ve donanımlı kılmak gibi önemli amaçlar bulunmaktadır. Bu amaçlar bağlamında Halk Eğitim Merkezlerinin etkin çalışmalarının kentsel sorunların çözümünde etkili olabileceği savunulmuştur.

**Anahtar Kelimeler:** Kentleşme, Kentsel Alan, Kentsel Bütünleşme, Halk Eğitim Merkezleri.

## An Essay on the Instrumental Role of Public Education Centers in Turkey's Urban Integration Process

### Abstract

Urban integration problematic in urban areas experienced difficulties in maintaining social and spatial integration is a phenomenon that occurs depending on. In the solution of the problem of urban integration Public Education Centres can play an instrumental role. Develop urbanites, those who migrate from rural to urban ensure compliance, more competent and qualified individuals to make such a major purposes of these centers are among the objectives of the organization. For this purpose, in the context of the effective operation of Public Education Centres to be effective in solving urban problems has been proposed.

**Keywords:** Urbanization, Urban Areas, Urban Integration, Public Education Centers.

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### Giriş

Karmaşık bir toplum yapısının, bireysel düzeyde çözülemeyecek sorunların üstesinden gelmesine olanak sağladığı ve kendine özgü nitelikleri bulunan bir yerleşim sistemi olma durumundan kaynaklı olarak kenti, özellikle sakinlerinin ekonomik ve sosyal faaliyetlerinin çeşitliliği karakterize eder (Hout, 2000: 33). Kent toplumu ise kendi içinde farklılaşmış, uzmanlaşmış tarımsal olmayan bir iş düzeni ve bu işlerde çalışanların da kendi içinde farklılaşmış ve tabakalaşmış bir nüfusa sahip olmasıyla tanımlanır (Kıray, 2007: 19). Tarih boyunca kent nüfusunun kırsal alandan kentsel alana yönelen göçlerle beslendiği sıklıkla vurgulanır. Bu tespitin Türkiye kentleşme süreci için de geçerli olduğu belirtilmelidir. Türkiye kentleşme sürecinde yaşanan göç olgusunun neden olduğu barınma sorunu, kentsel bütünleşmeyi etkileyen kritik bir sorun olarak addetmek mümkündür.

Türkiye’de kentleşme süreci, İkinci Dünya Savaşı’nın sonuna kadar Ankara dışında neredeyse durağan bir seyir izlemiştir. Ülkede sanayileşmeye dayalı bir kentsel yapının ortaya çıkması 1950’li yılları bulmuştur (Kıray, 2007: 7). 1950’li yıllardan başlayarak ülkede basit üretim teknolojisinin yerini yavaş yavaş traktör gibi yeni üretim teknolojisine bırakmaya başlaması, kırsal alandaki işsizliği görece artırmıştır. Tekeli (1982: 66-67)’ye göre, bu yıllarda kırdan koparak kente gelen geniş kitleler, emeğin yeniden üretimini pahalılaştırmadan, yani ücretleri artırma talebinde bulunmadan geçekundu seçeneğine başvurarak konut sorununu çözmüştür. Dolayısıyla kırdan kente göç edenlerin barınma sorunu, geçekundu tarzı yapılaşmayı doğurmuştur. 1980 sonrası gelişmiş ülkelerde sanayisizleşme eğilimi, sınırlı devlet politikası bağlamında devletin birçok alandaki aktif faaliyetini sonlandırması ve refah devleti uygulamalarının giderek erozyona uğraması, işsizlik ve aile yapısındaki değişimler, yoksulluk ve toplumsal dışlanma gibi bir dizi sorunlar (Darby, 2014), geçekundu sorununu derinleştirdiği gibi mevcut kentsel sorunları da çeşitlendirmiştir. Bu sorunlar, kente ve kentliye karşı işlenen

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suçları ve şiddet olaylarını tetiklemiştir. Kentte işlenen suç ve şiddet olayları adeta gündelik yaşamın sıradan pratikleri arasına giren edimlere dönüşerek kentsel bütünleşmeyi olumsuz etkilemiştir.

Bu araştırmanın konusu, kentsel bütünleşmeyi olumsuz etkileyen nüfus yoğunlaşmasının neden olduğu ekonomik, sosyo-kültürel ve mekânsal sorunlara Halk Eğitim Merkezlerinin çalışmaları üzerinden çözüm üretilebileceği argümanına dayanır. Bu bağlamda öncelikle kentsel bütünleşme kavramı üzerinde durulmuştur. Sonrasında kentsel bütünleşme olgusu üzerinde olumlu etkileri olacağı varsayılan Halk Eğitim Merkezlerinin örgütsel yapısına ve çalışma sistemine değinilmiştir. Son olarak söz konusu merkezler tarafından yürütülen çalışmaların kentsel bütünleşme üzerindeki olumlu katkıları irdelenmiştir.

### **Kavramsal Açıdan Kentsel Bütünleşme**

Kentsel bütünleşme (urban integration) kavramı, kentsel alandaki kamu ve özel kesim birimleri ile kent sakinlerinden oluşan tüm kent aktörlerinin birleşmesi ve kaynaşması sonucu gerçekleşen daha uyumlu ve sağlıklı bir bütünleşik kent yapısını tanımlar (Özler, 2012: 217). Kentsel bütünleşmeye ilişkin ayrıntılı bir çözümleme “sosyal bütünleşme”, “sosyal uyuşma”, “kentlileşme”, “sosyal çözülme”, “sosyal ayrışma” gibi bir dizi kavramlar üzerinden toplumsal ilişki örüntülerine değinmeyi gerektirir. Çünkü kentsel bütünleşme, kentsel alanda toplumun alt ve üst yapısını oluşturan politik, ekonomik, sosyo-kültürel ve mekânsal süreçlerin uyum içindeki bütünleşik halini tanımlayan geniş kapsamlı bir kavramdır. Bu özelliği itibarıyla birden çok kavrama referansta bulunmayı gerektirir. Ancak genel hatlarıyla kentsel bütünleşme, mekânsal bütünleşme ve sosyo-kültürel bütünleşme şeklinde kentin alt ve üst yapısını tanımlayan kavramlar üzerinden incelenebilir. Sosyo-kültürel ve ekonomik toplulukların kentsel mekânda sokak ya da mahalle şeklinde yan yana eklenmeleri mekânsal ya da fiziksel bütünleşme olarak tanımlanır. Ancak kentin yapılı çevresine karşılık düşen mekânsal bütünleşmenin yanı sıra kentliler aralarındaki ilişki örüntüleri, ekonomik ve sosyo-kültürel bağlamlarda gerçekleşmediği takdirde gerçek anlamda kentsel bütünleşme olgusundan söz edilemez. O halde mekânsal bütünleşmenin yanı sıra kentsel alanda yaşayan bireylerin ya da grupların politik tercihlerini, üretim ilişkilerini, ortak değerlerini, kurallarını, erdemlerini, paylaşımlarını tanımlayan politik, ekonomik ve sosyo-kültürel bağlamlar, kentsel bütünleşmenin üst yapısını oluşturan toplumsal ilişki ağının varlığını da zorunlu kılar.

Kentsel bütünleşme kavramını açıklama konusunda referans alınabilecek en önemli kavramlardan biri de belki de “sosyal bütünleşme” kavramıdır. Toplumsal yapıya dair görece daha eski bir kavram olan sosyal bütünleşmeden amaçlananın ne olduğu Buck (2005: 47) tarafından; “ortak değerler ve kent kültürü, sosyal düzen ve sosyal kontrol, sosyal bütünlük ve gelir dağılımındaki eşitsizliklerin azaltılması, sosyal ağlar ve sosyal sermaye, yere bağlılık ve kimlik” şeklinde belirtilmiştir. Esasında sosyal bütünleşme kavramı, Auguste Comte'un “sosyal uyuşma” (Con-sensus Social) ifadesine dayandırılır. Sosyal uyuşma kavramı ise bir toplumdaki bütün grupların ve sosyal yapının tüm unsurları ile maddi ve manevi kültür unsurlarının bir araya gelerek, işleyen bir bütünü meydana getirecek şekilde birbirlerini tamamlaması ve birbirleriyle kaynaşması olarak tanımlanır (Sosyal Bütünleşme, 2011). Toplumun tüm bileşenlerinin birbirleriyle kaynaşması ve uyumlu işleyen bir bütün olarak kalabilmesi, toplumsal düzenin korunması ve toplumsal çözülmenin engellenmesiyle olanaklı olabilir (Kurtkan, 1986: 288). Ne var ki toplumda mutlak bir bütünleşmeden, tam bir uyumdan söz edilemez. Diğer bir ifadeyle mutlak bir bütünleşme, toplumdaki dinamizmin yok olmasıyla sonuçlanabilir. O halde kentsel bütünleşmeden kasıt, katı ve mutlak olmayıp göreceli bir durumdur. Dolayısıyla sosyal bütünleşme, toplumdaki farklılıkları bütünüyle ortadan kaldırmaz ve önlemez; tersine, farklılığı ve çeşitliliği eşgüdüm ve yönlendirir (Tezcan, 1995: 215). Tüm farklılığı ve çeşitliliğiyle kentlilerin bir arada ve uyum içinde yaşamasını sağlar. Diğer taraftan bir süreci gerektiren bu durum, kentteki devingenliğe denk düşen “kentleşme hareketinden” ve bu hareketin sonuçlarından olan kişinin “kentlileşme” halinden söz etmeyi gerektirir.

Bir yerleşme biçimi olarak kentin başlıca belirleyici fonksiyonu nüfus yoğunluğuna bağlı kentleşme hareketi olduğu tartışılmaz bir gerçektir. Kentleşme hareketi ise sanayileşmeye ve ekonomik değişmeye paralel olarak kent sayısının artması ve mevcut kentlerin büyümesi sonucunu doğuran, toplum yapısında artan oranda örgütlenme, işbölümü ve uzmanlaşma yaratan, insanların davranış ve ilişkilerinde kentlere özgü değişikliklere yol açan bir nüfus birikim sürecidir (Yavuz, 1978: 22). Bu tanım çerçevesinde kentleşme hareketi, çözülme ve yoğunlaşma biçiminde iki ucu olan bir akım olayını ifade eder (Kartal, 1992: 33). Buna göre coğrafi olarak iki uçtan birincisi olan “kır”, çözülme; ikincisi olan “kent” ise yoğunlaşmaya karşılık gelir. Çözülmenin ve yoğunlaşmanın özelliklerine uygun ve bunlara bağımlı biçimde gerçekleşen “akım hareketi” ise kır ile kent arasında ve kırdan kentte yönelen doğrusal üzerinden gerçekleşir. Bu durum, kentleşme olgusu ya da kentsel gelişme/genişleme olarak da ifade edilebilir. Kent olgusu, toplumsal pratiğin tümünü içeren genel bir gerçektir (Lefebvre, 2013: 49). Bu bağlamda kentsel süreçlerin üst yapısını oluşturan kentlileşme pratiği, özellikle kentte göç edenler üzerinde yarattığı değişim nedeniyle kentsel bütünleşme sürecindeki önemli pratiklerden biri olarak öne çıkar. Kartal (1992: 21)'a göre zamansal süreç bağlamında kentlileşen insanda, ekonomik ve sosyal olmak üzere iki açıdan değişim söz konusu olur. Yazarın ifadesiyle “ekonomik bakımından kentlileşme”, kişinin

geçimini tamamen kentte veya kente özgü işlerle sağlıyor duruma gelmesiyle açıklanır. “Sosyal bakımdan kentleşme” ise kır kökenli insanın türlü konularda kentlere özgü tavır ve davranış biçimlerini, sosyal ve tinsel değer yargılarını benimsemesi ile gerçekleşir.

Kısa bir süre öncesine kadar yaygın olarak büyük kentler ölçeğinde karşılaşılan ve marjinal kesime özgü olarak nitelendirilen kentleşme ya da kentleşme sorunsalı, Gürel (2001: 138)’e göre son yıllarda, ülke coğrafyasının önemli bir bölümünü etkileyecek bir düzeye ulaşmıştır. Yazarın, kentle bütünleşme sorunsalında marjinal kesim olarak nitelediği kesimin, kente göç edenlere karşılık geldiği düşüncesindeyiz. Ne var ki, kentte doğup büyümesine ve kentin gündelik yaşam akışı içinde bulunmasına karşın kentleşemeyen (politik, ekonomik ve sosyo-kültürel açıdan kente eklenemeyen) önemli bir kesimden de söz edilebileceği inancındayız. Kentte farklılaşmayı ve ötekileştirmeyi derinleştiren bu durum, “sosyal ayrışma” kavramı üzerinden irdelenebilir.

Günümüzde hemen her mekânsal ölçekte farklı etmenlerle farklı boyutta görülen sosyal ayrışma, kavramsal olarak farklı gruplar arasında ortaya çıkan bir takım eşitsizlikler sonucu oluşur (Tümtaş, 2012: 70). Bu eşitsizlikler kentsel alanda, ekonomik ve sosyo-kültürel açıdan farklı niteliklere sahip grupların birbirleri ile iletişimlerinin kesilmesi ve birbirlerine karşı duyarsızlaşması sonucunu doğurabilir. Bu duruma ilişkin önleyici/iyileştirici tedbirler alınmadığı veya politikalar üretilmediği durumda kentsel bütünleşmenin tam karşısında yer alan sosyal çözülme ya da sosyal dışlanma, kaçınılmaz olur. Kentsel uyum ve ahengi yok eden, kentsel hizmetlere erişimde eşitliği zedeleyen sosyal çözülme veya dışlanma sorunu, kentsel bütünleşmeyi tesis etme rolünü üstlenebileceğine inandığımız Halk Eğitim Merkezlerinin çalışmalarına esasında önemlilik atfeder.

### **Halk Eğitim Merkezlerinin Örgütsel Yapısı ve Çalışma Sistemi**

Halk Eğitim Merkezleri, Türkiye Milli Eğitim Bakanlığı bünyesinde oluşturulan Hayat Boyu Öğrenme Genel Müdürlüğü’ne bağlı olarak ülkenin tüm kent ve ilçelerinde örgütlenen yaygın eğitim kurumlarıdır. Halk Eğitim Merkezlerinin örgütsel yapısı ve çalışma sistemi, *Milli Eğitim Bakanlığı Yaygın Eğitim Kurumları Yönetmeliği*’ne göre düzenlenmiştir. Bu merkezler, ücretsiz ya da küçük bir katkı payı karşılığında dönemsel olarak genel, mesleki ve teknik nitelikli çok sayıda kurs açmaktadır. Bu kurslara devam eden kursiyerlere, kursun başarıyla tamamlanması durumunda Milli Eğitim Bakanlığı onaylı kurs bitirme sertifikası verilmektedir.

Milli Eğitim Bakanlığı Yaygın Eğitim Kurumları Yönetmeliği çerçevesinde, Türkiye Cumhuriyeti Anayasası’ndaki hak ve yükümlülükler atıfta bulunulmuştur. Bu Yönetmeliğin içeriğinden bireylerin kişisel ve fiziksel yeteneklerini geliştirmek, nitelikli işgücü yetiştirmek, göç edenlerin kentsel alandaki uyum kabiliyetini geliştirmek üzere Halk Eğitim Merkezlerinin ekonomik, sosyal ve kültürel amaçlı olarak geniş bir alanda kurs düzenleme ve yürütme yetkisinin bulunduğu anlaşılmaktadır. Söz konusu merkezlerin kurs açma ve yürütme konusundaki geniş hareket alanı, bu merkezlerinin kentsel bütünleşme konusunda zımni de olsa önemli bir rol üstlenmiş olduğu ya da üstlenebileceği şeklinde yorumlanabilir.

Mevcut durumda ülke genelindeki sayısı dokuz yüzü aşan Halk Eğitim Merkezlerinde; okuma-yazma kursları, mesleki-teknik kurslar, sosyal-kültürel kurslar ve uygulamalar, eğitsel kol çalışmaları ana sınıflandırması altında çok sayıda kurs açılmaktadır. Yerel ihtiyaçlar bağlamında niteliksel olarak farklılık sergileyebilen bu kurslar, Halk Eğitim Merkezleri’nin kendi bina ve tesisinde, mahalle ve kırsalda oluşturulan kurs yerlerinde, eğitim odalarında, rehabilitasyon gerektiren hastanelerde, kamu ve özel kuruluşlara ait binalarda, örgün eğitim kurumlarına ait binalarda yürütülmektedir. Açılan kurslarda, kadrolu öğretmen ve kadrolu usta öğreticiler görev yapmaktadır. Öğretmenlerin yetersiz kalması durumunda çevre okulların öğretmenlerinden ya da ek ders ücreti karşılığında üniversite öğretim üyelerinden, diğer kurum ve kuruluşların uzman ve usta öğretici niteliğine haiz yetişmiş insan gücünden yararlanma olanağı bulunmaktadır (MEB, 2014: 1-4).

### **Halk Eğitim Merkezlerinin Kentsel Bütünleşmeye İlişkin Araçsal Rolü**

Kentsel bütünleşme, mekânsal bütünleşmeyle birlikte kentsel alanda sosyo-kültürel ve ekonomik anlamda bir ilişki düzeyini içeren ve daha çok birey ile kent arasındaki ilişkiyi kentleşme kavramı üzerinden tanımlayan sosyal bütünleşme olgusunun gerçekleştirilme durumuna bağlı olarak gerçekleşir. Daha önce de belirtildiği gibi “kentsel bütünleşme”, ana hatlarıyla mekânsal ve sosyal bütünleşme olmak üzere farklı uğrakları olan geniş perspektifli bir kavram olarak tanımlanır. Dolayısıyla kentsel alanda sosyal ve mekânsal bütünleşme gerçekleşmeden gerçek anlamda bir kentsel bütünleşme olgusundan söz edilemez. Türkiye’de mekânsal bütünleşmeye ilişkin sorunlara, yerel yönetimin bir uzvu olan planlama kurumu tarafından çözüm üretilmeye çalışılmaktadır. Aynı şekilde sosyal bütünleşmeye ilişkin sorunlara da Halk Eğitim Merkezlerinin çalışmaları üzerinden çözüm üretilebilir. “Halk Eğitim Merkezlerinin çalışmaları çerçevesinde kentsel sorunlara nasıl çözüm üretilebilir” sorusu ise Milli Eğitim Bakanlığı Yaygın Eğitim Kurumları Yönetmeliğine ilişkin sınırlı içerik çözümlemesi üzerinden yanıtlanabilir.

Yönetmeliğe ilişkin içerik çözümlemesinde, Halk Eğitim Merkezlerinin amacı ve çalışma sistemi konusunda fikir veren ve kentsel bütünleşme konusunda önemli olduğu varsayılan sınırlı sayıdaki maddeler irdelenmiştir. Buna göre söz konusu Yönetmeliğin 3. maddesinin 1. fıkrasının “n” bendinde geçen “sosyal etkinlik” kavramı “kursiyerlerle halka açık olarak düzenlenen toplantı, yarışma, sergi, panel, gezi, sempozyum, festival, fuar ve benzeri kurs dışı eğitsel etkinlikler” olarak tanımlanmıştır. Bu düzenleme, söz konusu merkezlerin, düzenlediği sosyal etkinlikler çerçevesinde kentlilere daha kolay ulaşabildiklerini ve kentlilerle doğrudan iletişime geçerek eğitsel ve sosyo-kültürel etkinlikte bulunma olanaklarının yüksek olduğunu göstermektedir. Bu durum, kentsel sorunları çözme konusunda bu merkezlere önemli bir hareket alanı yaratmaktadır. Bu merkezlerin düzenlediği etkinlikler üzerinden kentsel bütünleşmeyi sağlayacak birçok değer ve davranış, kentlilere kazandırabilir. Bu amaç çerçevesinde düzenlenecek doğru, yapıcı ve kentsel sorunları çözme odaklı eğitsel ve sosyo-kültürel etkinlikler, kentsel sorunları enazlamada yardımcı olabilir.

Yönetmeliğin 5. maddesinin 1. fıkrasında yaygın eğitime ilişkin ilkelere yer verilmiştir. Bu ilkeler “herkese açıklık, ihtiyaca uygunluk, süreklilik, geçerlilik, planlı olmak, yenilik ve gelişmeye açıklık, gönüllülük, her yerde eğitim, hayat boyu öğrenme, bilimsellik ve bütünlük, işbirliği ve eşgüdüm” olarak belirtilmiştir. Özellikle ihtiyaca uygunluk, her yerde eğitim, yenilik ve gelişmeye açıklık gibi ilkeler kursların, hemen her mekânda ve çok geniş bir kesimin talep ve beklentilerine karşılık verecek şekilde açılabilceğini göstermektedir. Kentsel alanda ihtiyaçlar, talepler ve beklentiler bölgesel olarak farklılık gösterebildiği gibi bunların öncelik sıralaması da değişebilir. Kimi bölgelerde okuma-yazma kursları ya da meslek edindirme kursları daha ivedi bir ihtiyaç olarak öne çıkarken, diğer bir bölgede yabancı dil, müzik, resim gibi kültürel boyutuyla öne çıkan kurslara ağırlık verilebilir.

Yönetmeliğin 3. maddesinin 1. fıkrasının “ı” bendinde yer verilen meslek ve teknik kurslar, kişilerin daha donanımlı olarak işgücüne katılımını sağlama konusunda etkili olmaktadır. Kişilerin kent ekonomisine eklemlenme sürecinde önemli bir araç görevi gören meslek edindirme kursları, kentsel alanda daha nitelikli bir iş gücünün oluşmasını sağlar. Kentlerdeki niteliksiz işgücü, vasıfsız işlerde çalışmak zorunda kalmaktadır. Vasıfsız işler, istikrarlı olmayan düşük gelirli işlerde ve sosyal güvenceden yoksun olarak çalışmayı gerektirir. Verimli üretimi de olumsuz etkileyen bu durum, aynı zamanda toplumsal sınıfların ekonomik ve sosyo-kültürel düzeyi üzerinde de belirleyici olur. Çoğunlukla toplumdaki düşük gelir grubunu oluşturan vasıfsız işçiler için meslek edindirme kurslarının düzenlenmesi, kursiyerlerin belirli bir alanda uzmanlaşıp yetkin hale gelmesinde etkili olmakta ve söz konusu kursiyerlerin uzmanlaşmış oldukları alanda mesleklerini icra etme şansı doğmaktadır. Bu durum, hem kişinin ekonomik durumunda, hem de kent ekonomisinde olumlu anlamda ayırıcı bir durum yaratacaktır.

Yönetmeliğin 3. maddesinin 1. fıkrasının “g” bendinde kurs yeri “merkezlere bağlı olarak mahalle, köy, belde, ilçe veya il merkezlerinde her hangi bir alan ya da dalda kurs faaliyeti yapılan sabit veya geçici bina, salon ve benzeri yerler” şeklinde tanımlanmıştır. Bu maddeden şöyle bir çıkarımda bulunulabilir: Halk Eğitim Merkezlerinin eğitim ve öğretim çalışmaları kendi merkez binaları ya da okul gibi mekânlarla sınırlandırılmamıştır. Bu merkezlere, düzenledikleri kursların niteliğine bağlı olarak geniş bir alanda eğitim ve öğretim çalışmalarını yürütme olanağı sunulmuştur. O halde bu merkezler, eğitsel ve sosyo-kültürel faaliyetlerini kent ve ilçe ölçeğinden, mahalle ve kent sokaklarına kadar uzanan geniş bir alanda yürütebilir. Örneğin mahalle muhtarlarıyla gerçekleştirilecek bir organizasyon çerçevesinde bir okul ya da kahvehaneden tutun bir semt pazarına kadar mahallenin etkinliğe uygun her hangi bir noktasında, bilgi paylaşımı ya da eğitsel bir etkinlik düzenlenebilir. Bu tarz çalışmalarda altı çizilmesi gereken belki de en önemli ayırıcı durum, bu merkezlerin belli bir projeyi hayata geçirmek üzere kendiliğinden harekete geçebilme hakkına sahip olmasıdır. Buna göre kentliler, söz konusu merkezlere, açılan kurslara katılmak için doğrudan müracaat edebildikleri gibi söz konusu merkezler de belli bir projeyi hayata geçirmek üzere kendiliğinden harekete geçerek kentlilere doğrudan ulaşma seçeneğini kullanabilirler.

Yönetmeliğin 3. maddesinin 1. fıkrasının “ı” bendinde Okul Aile Birliği şöyle tanımlanmıştır: “Merkez ile aile arasındaki bütünleşmeyi ve işbirliğini sağlamak amacıyla yönetici, öğretmen, uzman, ücretli usta öğretici, kursiyer, 18 yaşından küçük kursiyerlerin velileri ile halk eğitimi konusunda deneyimli ve gönüllü kişilerden oluşan birlik”tir. Bu tanımlama, Okul Aile Birliği’nin, karar mekanizması olarak önemli bir noktada durduğunu göstermektedir. Esasında mahalli müşterek ihtiyaçlar doğrultusunda hangi alana ilişkin kursların açılacağı konusunda belirleyici olmak, kentsel bütünleşme açısından son derece önemlidir. Bu anlamda Okul Aile Birliği üyelerinin açılacak kursların belirlenmesi konusunda belirleyici konumda olmaları, üyelerin kentsel gelişmeye ve kent sorunlarına ilişkin farkındalık düzeylerini de önemli kılmaktadır.

Kentsel bütünleşmenin sağlanamadığı kentsel alanlarda, sosyal çözümme ya da sosyal dışlanma kaçınılmaz olur. Toplumda oluşan adaletsizlik, sosyal tabakalar arasındaki gelir uçurumu kuralızsızlık, siyasi belirsizlik, istikrarsızlık ve çatışma, kurumlaşma sorunları, işsizlik, enflasyon gibi siyasal, sosyal, ekonomik, psikolojik ve kültürel bir dizi etkenler sosyal çözümmenin nedenleri arasında gösterilir. Sosyal çözümmenin yaşandığı alanlarda kentsel bütünleşmeden söz edilemez. Toplumsal/kentsel bütünleşmenin oluşmadığı toplumlarda ise toplumsal



güvenden söz edilemez. Toplumsal güven, esasında sosyal kurumlara olan güven olup kurumsal güvenin en yoğun ve önemli olan biçimi ise devlete olan güvendir. Yaka (2010)'nın da belirttiği gibi devlete olan güven, sosyal kurumlar aracılığıyla tesis edilir. Planlama kurumunun mekânsal planlamada devlete olan güveni tesis etmede kullanılan bir aygıt olması gibi Halk Eğitim Merkezleri de aynı amaç için etkin olarak kullanılabilir. Kentsel alanda sosyal dışlanmayı ya da çözülmeyi önlemek, yoksullukla mücadele etmek, daha kaliteli bir yaşam alanı oluşturmak adına bu merkezler araçsal bir rol üstlenebilir. Dolayısıyla bu kurumlar, gelir düzeylerinin düşük olması nedeniyle; etnik veya dini kökenleri, toplumsal cinsiyetleri, eğitim durumları, fiziksel veya zihinsel engelleri dolayısıyla kentsel hizmetlere erişimde sıkıntı yaşayan kesimlerin sorunlarını çözme konusunda aktif rol üstlenecek şekilde işlevsel hale getirilebilir.

## Sonuç

Kente özgü ortak değerlerin kent sakinlerince kanıksanmış olması ve kentsel edimler üzerinde söz konusu bu değerlerin belirleyicilik durumu, uyumlu ve sağlıklı gelişen bir kentsel yapı/form için önemlilik addeder. Dinamik ve girift yapısı ile canlı bir organizmayı andıran kentsel alan, özellikle kent ekonomisinin işlevsel niteliğine bağlı nüfus yoğunluğunun yarattığı baskı sonucu gelişme veya mekânsal olarak genişleme eğilimi içinde olur. Bu olgu, "kentleşme" kavramını önümüze çıkarır. Ülkemizde kentleşmenin en önemli itici gücü ise kuşkusuz nüfus hareketleridir. Farklı değer ve pratikler taşıyan kırsal alandan (küçük ölçekli yerleşim alanından) kopan nüfus, kentsel alana (daha büyük ölçekli yerleşim alanına-anakente) kayar. Kendine özgü değer ve pratiklere sahip kırsal nüfus, kentsel alana geldiğinde, kente özgü değer ve pratiklerle karşı karşıya kalır. Bu anlamda kentin uzun soluklu sakinleri ve kente daha geç yerleşen yeni kent sakinleri biçiminde, kentleşme süreci boyunca her defasında yeniden oluşan farklı değer ve pratiklere sahip yeni bir kent nüfus bileşeninden söz edilebilir. Bu durumun tetiklediği başlıca kent sorunları işsizlik, niteliksiz işgücü, toplumsal tabakalar arasındaki gelir uçurumunun yarattığı alt ve üst gelir gruplarının yaşam alanları arasındaki derin farklılık, verimsiz ve istikrarsız kentsel hizmetler ve bu hizmetlere erişimde eşitsizlik olarak belirir. Kentsel alanda uyumsuzluğu, kural tanımazlığı, ötekileştirmeyi ve suça eğilimi besleyen söz konusu yapısal kent sorunları, kentsel bütünleşmeyi güçleştirir. Ancak mekânsal bütünleşmeye ilişkin sorunlara yerel yönetimin bir uzvu olan planlama kurumu tarafından çözüm üretildiği gibi sosyal bütünleşmeye ilişkin sorunlara da Halk Eğitim Merkezlerinin çalışmaları üzerinden çözüm üretilebileceği kanısındayız.

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# TÜRKİYE’NİN PISA 2012 SONUÇLARINA GÖRE BAZI DEĞİŞKENLER AÇISINDAN OECD ÜLKELERİ ARASINDAKİ YERİ

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## Özet

Sürekli bir değişim ve dönüşümün yaşandığı dünyamızda, çağın gereklerine ayak uydurabilmek ve ilerleyebilmek nitelikli bir eğitimin varlığını gerekli kılmaktadır. Eğitimin niteliğinin ölçülmesi ve değerlendirilmesinde de ulusal sınavlar kadar uluslararası sınavlar da önem kazanmaktadır. Çeşitli ülkelerin eğitim sistemlerinin karşılaştırılmasına ve buradan hareketle ülkelerin eğitim sistemlerini gözden geçirip, geleceğe yönelik politikalar geliştirmelerine imkân sağlayan bu sınavlardan biri de kısaltılmış adıyla PISA (Programme for International Student Assessment) olarak bilinen Uluslararası Öğrenci Değerlendirme Programı’dır. Ekonomik İşbirliği ve Kalkınma Örgütü (OECD) tarafından düzenlenen PISA, 2000 yılından itibaren her üç yılda bir yapılan ve Türkiye’nin 2003 yılından itibaren katılmaya başladığı, örgün eğitime devam eden 15 yaş grubu öğrencilerin günlük yaşamda gereksinim duyabilecekleri temel bilgi ve becerileri ne kadar edinebildiğini yani öğrencilerin hayata hazır oluş durumlarını belirlemeye yönelik kapsamlı bir eğitim araştırmasıdır. Bu çalışmada ise Türkiye’nin PISA 2012 sonuçlarına göre okul öncesi eğitim alma, sosyal-kültürel-ekonomik durum, okul türleri arasındaki farklılıklar gibi değişkenler açısından OECD ülkeleri arasındaki durumunun ortaya konulması ve Türk Eğitim Sistemi’nin zayıf yönlerinin belirlenip bunları geliştirmeye yönelik çözüm önerilerinin sunulması amaçlanmıştır. Betimsel modelin kullanıldığı bu çalışmada veriler, PISA bulgularının analiz edildiği yayınlardan ve veri tabanlarından (MEB, 2013; OECD, 2012) elde edilmiştir.

**Anahtar Sözcükler:** PISA, OECD, Türk Eğitim Sistemi

## Giriş

Eğitimde yapılan yenilikler ve eğitime yapılan yatırımlar sonucunda eğitimde hedeflenen seviyeye gelinip gelinmediğinin öğrenilmesi, bunun sonucunda da eğitim sistemlerine yönelik geliştirme faaliyetlerinin yapılması ulusal sınavlar kadar uluslararası sınavların da önemini ortaya koymaktadır. Ayrıca uluslararası sınavlar bir ülkenin eğitim sisteminin ne kadar etkili ve verimli olduğunu görmesinin yanında diğer ülkelerin eğitim sistemleriyle o ülkenin eğitim sisteminin karşılaştırılmasının da yapılmasını mümkün kılmaktadır. Bu gibi sınavlarla ülkelerin eğitim sistemlerindeki olumlu ve olumsuz yönleri, eğitim politikalarında yaptıkları reformların yeterliliklerini gözleme olanağı sağlamaktadır.

Uluslararası platformda ülkelerin eğitim sistemlerinin karşılaştırılmasında kullanılan sınavlardan biri de PISA (Programme for International Student Assessment) olarak bilinen

Uluslararası Öğrenci Değerlendirme Programı'dır. Türkiye, PISA uygulamasına 2003 yılından itibaren katılım göstermektedir. 34'ü OECD ülkesi olmak üzere 65 ülkenin yer aldığı çalışma; 15 yaş grubu öğrencilerin örgün eğitimde matematik, fen ve okuma becerileri alanlarında kazanmış oldukları bilgileri günlük yaşantılarında ne ölçüde kullandıklarını ölçtüğü gibi öğrenci performansı ile ilişkili olabileceği düşünülen diğer bazı göstergeler (sosyal, kültürel, ekonomik ve eğitsel) hakkındaki bilgileri de değerlendirmektedir. Günümüze en yakın tarihte yapılan en son sınav 2012 yılında yapılmıştır. PISA projesine katılan ülkelerin OECD'ye üye olma ve olmama durumlarına göre listesi Tablo 1'de verilmiştir.

**Tablo 1.**  
PISA 2012 Projesine Katılan OECD'ye Üye ve Diğer Ülkeler

OECD Üye Ülkeler	Diğer Ülkeler
Almanya	Arjantin
Amerika	Arnavutluk
Avustralya	Birleşik Arap Emirlikleri
Avusturya	Brezilya
Belçika	Bulgaristan
Çek Cumhuriyeti	Çin (Hong Kong)
Danimarka	Çin (Makau)
Estonya	Çin (Şanghay)
Finlandiya	Çin (Tayvan)
Fransa	Endonezya
Hollanda	Güney Kıbrıs
İngiltere	Hırvatistan
İrlanda	Karadağ
İspanya	Katar
İsrail	Kazakistan
İsveç	Kolombiya
İsviçre	Kosta Rika
İtalya	Letonya
İzlanda	Lihtenştayn
Japonya	Litvanya
Kanada	Malezya
Kore	Peru
Lüksemburg	Romanya
Macaristan	Rusya
Meksika	Sırbistan
Norveç	Singapur
Polonya	Tayland
Portekiz	Tunus
Slovak Cumhuriyeti	Uruguay
Slovenya	Ürdün
Şili	Vietnam
<b>Türkiye</b>	
Yeni Zelanda	
Yunanistan	

PISA projesinin 2012 yılında 34'ü OECD üyesi olmak üzere toplam 65 ülkeye uygulandığı görülmektedir. Türkiye PISA 2012'de 34 OECD ülkesi arasından 32. olmuştur. Katılımcı 65

ülke arasından alanlar bazında inceleme yapıldığında ise Türkiye'nin, Matematik alanında öğrenme seviyesi bakımından 2.seviyede 44.sırada, okuma yeterliliğinde yine 2. seviyede 42.sırada, fen yeterliliğinde de yine 2. seviyede 43.sırada yer aldığı gözlenmektedir. PISA 2012 sonuçlarına göre tüm alanlarda 1. olan ülke ise Çin (Şangay) olmuştur. Elde edilen bulgulara bakıldığında Türkiye'deki 15 yaş grubu öğrencilerin puanlarını her yıl ortalama olarak matematikte 3,2, okumada 4,1 ve fende 6,4 puan artırdığı görülmektedir (Tedmem, 2014). Ancak bu artış miktarları Türkiye'yi, en azından OECD ortalaması civarına taşıyacak düzeye henüz ulaştıramamıştır. Ortalama başarısı Türkiye'den istatistiksel olarak anlamlı şekilde farklı olmayan ülkeler ise İsrail, Hırvatistan, İzlanda, İsveç, Slovenya, Litvanya, Yunanistan, Rusya, Sırbistan, Bulgaristan, Romanya, Güney Kıbrıs, Slovakya olmuştur (MEB, 2013).

PISA sonuçları öğrencilerin akademik başarılarını ortaya koymanın yanında onların sosyo-ekonomik ve sosyo-kültürel altyapısı, ülkelerdeki eğitime harcanan para veya kişi başına düşen gelir, okullar arasındaki farklılıklar, okul iklimi, ülke olanakları, okul öncesi ve ilköğretimde okullaşma oranları, okula başlama yaşı, cinsiyet eşitliği, anne-baba eğitim durumu, öğrenim süresi, öğretmen eğitimi gibi pek çok farklı konuda araştırmacılara ışık tutan sonuçlar da vermektedir (Anıl, 2009; Aydın, Sarier ve Uysal, 2012; Berberoğlu, 2012; Demir ve Kılıç, 2010; Martins ve Veiga, 2010; Özmusul ve Kaya, 2014; Suggate, 2009). Bu çalışmada ise okul öncesi eğitim alma, sosyal-kültürel-ekonomik durum, okul türleri arasındaki farklılıklar açısından Türkiye'nin PISA 2012 sonuçlarına göre diğer katılımcı ülkelerle olan karşılaştırmasına yer verilmiştir.

### ***Okul Öncesi Eğitim Alma***

Milli eğitimin genel amaç ve ilkelerine uygun olarak belirlenen okul öncesi eğitimin amacı çocukların bedensel, zihinsel ve duygusal yönden gelişmesini ve iyi alışkanlıklar kazanmasını sağlayarak onları ilkokula hazırlamak olarak belirtilmiştir (MEB, 2004). Okul öncesi dönem olarak ifade edilen 0-6 yaş grubundaki çocukların bu süreçte aldıkları eğitim onların zihinlerinin şekillenmesinde büyük bir etken olarak görülmüş, aldıkları bu eğitimle onların kişisel gelişimlerinin yanında yaşadıkları ülkenin ekonomik ve sosyal açıdan kalkınmasına da katkıda bulunacakları ifade edilmiştir (Aslanargun ve Tapan, 2011; Oktay, 1993). Okul öncesi eğitimin öğrenci başarısını etkilemesi ve bunun uzun vadede ülke ekonomisine getireceği katkı Ekonomik İşbirliği ve Kalkınma Örgütü (OECD) tarafından düzenlenen PISA sınavlarının da ilgisini çeken bir konu olmuştur. PISA bulgularına göre okul öncesi eğitim almak, öğrencileri diğer akranlarından bir adım öne götürmekte, okul öncesi eğitim almış öğrenciler, almamış öğrencilere oranla aynı sınıf düzeyinde olsalar dahi en az 1 yıl önde olmaktadır (Tedmem, 2014).

PISA sonuçlarına bakıldığında 15 yaş grubundaki öğrencilerden okul öncesi eğitime sahip olanların oranının sadece yüzde otuzlarda olduğu görülmektedir (Tablo 2). OECD ülkelerinde her yüz öğrenciden yetmiş dördünün bir yıldan fazla okul öncesi eğitime sahip olduğu düşünüldüğünde Türkiye' deki sorunlu tablo gözler önüne serilmektedir. Ayrıca bazı OECD ülkelerindeki öğrencilerin neredeyse tamamının okul öncesi eğitim aldığı Yine PISA sonuçlarının elde ettiği bir diğer veridir.

**Tablo 2.**

Okul Öncesi Eğitime Katılım-Matematik Performansı

	Okul öncesi eğitim durumlarına göre öğrenci oranları			Ortalama matematik başarıları		
	Okul öncesi eğitim almamış öğrenciler (%)	1 yıldan az okul öncesi eğitim almış öğrenciler (%)	1 yıldan fazla okul öncesi eğitim almış öğrenciler (%)	Okul öncesi eğitim almamış öğrenciler	1 yıldan az okul öncesi eğitim almış öğrenciler	1 yıldan fazla okul öncesi eğitim almış öğrenciler
<b>Türkiye</b>	70,3	21,0	8,7	433	480	495
<b>OECD</b>	7,1	18,8	74,1	452	475	504

Kaynak: Tedmem, 2014. PISA 2012: Türkiye Üzerine Değerlendirme ve Öneriler. Öncü Basımevi, Ankara.

PISA 2012 sınavında yüksek başarı gösteren ülkelerin okul öncesi eğitime verdikleri önem bu ülkelerin başarısının altında yatan sebeplerden biri olarak karşımıza çıkmaktadır. Örneğin PISA 2012 sonuçlarına göre ülke ortalamalarında tüm alanlarda en üst sıralarda yer alan Güney Kore'nin en önemli özelliği okul öncesi eğitime verdiği önemdir. Üç ve üç yaşın altındaki çocukların okul öncesi eğitim kurumuna devam etme oranı OECD ülkelerinin ortalamasının üzerindedir. Güney Kore aynı zamanda, üç-beş yaş için okul öncesi devlet programlarıyla, çocuk bakımı programlarını birleştiren paralel bir öğrenme çerçevesi oluşturarak, doğumdan beş yaşa kadar olan süre için eğitim sistemini bütünleştirmeye yönelik çalışmalara başlamıştır. Hedef, erken yaşlardan itibaren öğrenme sürecini ve okula hazır olma durumunu geliştirmektir. Aynı şekilde Singapur'da devlet destekli okul öncesi eğitime erişim neredeyse %100'e ulaşmıştır ve ilkokula yeni başlayan öğrencilerin %99,9'u en az bir sene okul öncesi eğitime devam etmiştir. Yüksek başarı gösteren diğer bir ülke olan Çin'de ise öğrencilerin üçte ikisi okul öncesi eğitim kurumlarına devam etmektedir. Eğitim Bakanlığı 2020'ye kadar en az bir yıl okul öncesi eğitimini herkese ulaştırmak ve iki yıllık okul öncesi eğitimi neredeyse ülke tamamına yaygınlaştırmak hedefini koymuştur. Özellikle Şangay, ülkenin diğer bölgelerinin çok önünde bir hızla bu hedefe doğru ilerlemektedir ki PISA 2012 sonuçlarına göre tüm alanlarda Şangay'ın başarısı yadsınamaz bir gerçektir (Şirin ve Vatanartıran, 2014).

Okul öncesi eğitimin öğrencilerin okul başarısına büyük etkileri olduğu inancı PISA 2012 sonuçlarına göre en yüksek başarı gösteren ülkelerin ortak çıkış noktalarından olmuştur. bu sonuçtan Türkiye'nin de büyük bir pay çıkarması gerekmektedir. Ancak 4+4+4 düzenlemesi ile oldukça önemli tartışmalara konu olan ve daha öncesinde çeşitli projelerde etkili bir biçimde sürdürülmesine devam edilmekte olan okul öncesi eğitimi yaygınlaştırma projesi geri plana atılmış görünmektedir. Oysa okul öncesi eğitim sektöre uğratılmayacak kadar ciddi bir öğretim basamağıdır. PISA 2012 sonucu da göstermiştir ki Türkiye'de okul öncesi eğitim kurumlarına katılan öğrenciler PISA skoru bakımından diğerlerine göre ortalama olarak 60 puanlık avantaja sahiptir ki bu OECD ortalamasının üzerindedir ve bir yıllık bir eğitime tekabül etmektedir. 60 puanlık farkın önemli bir kısmı ailelerin sosyoekonomik kökeninden kaynaklansa da bu faktör hesaba katılmadığında bile fark yine 20 puan seviyesinde kalmaktadır (Şirin ve Vatanartıran, 2014).

## Sosyal-Kültürel-Ekonomik Durum

Öğrencilerin ailelerinin ekonomik, sosyal ve kültürel düzeyleri öğrenci başarısında en önemli etkenlerden biridir. PISA sonuçlarının analiz edildiği pek çok çalışmada (Aydın, Sarier ve Uysal, 2012; Dinçer ve Kolaşın, 2009; Tomul, 2008; Yıldırım, 2009) öğrencinin akademik başarısında, öğrencinin derse duyduğu ilgiden, okulun kaynaklarından ve ders içi öğrenme metotlarından daha çok yaşanan bölge, anne ve babanın eğitim durumu, ailenin ekonomik durumu, hane halkı büyüklüğü gibi değişkenler belirleyici olmaktadır. Böyle bir durumda da sosyoekonomik ve sosyokültürel farklılıklar öğrenci başarısızlığı, eğitime erişimde sıkıntıyı, okullar arasında kalite farklılıklarının yüksek olmasını, fırsat ve imkân eşitsizliğini, temel eğitimin herkes tarafından tamamlanamamasını beraberinde getirmektedir.

PISA sonuçları da bu olumsuzlukları doğrular nitelikte bulgular vermektedir. PISA 2012 sonuçlarına bakıldığında OECD genelinde öğrencilerin %15'i sosyal, kültürel ve ekonomik düzey açısından düşük seviyede yer alırken, Türkiye'de bu oran %69 olmuştur. Türkiye'deki tüm öğrencilerin bir kıyaslaması yapıldığında ise alt sosyoekonomik grupta yer alan öğrenciler üst sosyoekonomik gruptaki akranlarından ortalama 86 puan daha düşük performans göstermiştir (MEB, 2013). Tablo 3'te de görüldüğü gibi Türkiye'deki aileleri dörde ayırarak incelediğimizde en alt çeyrekte yer alan öğrenciler ile üst çeyrekteki öğrencilerin puan farkları 2003 yılında 122 iken, bu puan farkı 2012 yılında 86'ya inerek farkın 90 olduğu OECD ülkelerini yakalamıştır (Tedmem, 2014). Bu da bize dokuz yıllık süreç çerçevesinde sosyokültürel ve sosyoekonomik farklılıklardan dolayı meydana gelen eşitsizliği gidermeye yönelik bazı adımların atıldığını gösterir. Bu Türkiye açısından sevindirici bir durumdur. Ancak 86 puanlık bir farkın var olması Türkiye'de eğitim imkânları ve kalitesi açısından bölgesel farklılıkların bulunduğunu ve özellikle kırsal alanlarda eğitimin niteliğinin düşük olduğunu göstermektedir (Aydın, Sarier ve Uysal, 2012).

**Tablo 3.**

Ekonomik, sosyal ve kültürel durum indeksine göre PISA matematik puanlarının incelenmesi

		Alt çeyrek	2. çeyrek	3. çeyrek	Üst çeyrek
Türkiye	2012	412	436	447	498
	2003	374	395	429	496
OECD	2012	452	482	506	542
	2003	453	487	513	551

*Kaynak: Tedmem, 2014, PISA 2012: Türkiye Üzerine Değerlendirme ve Öneriler. Öncü Basımevi, Ankara.*

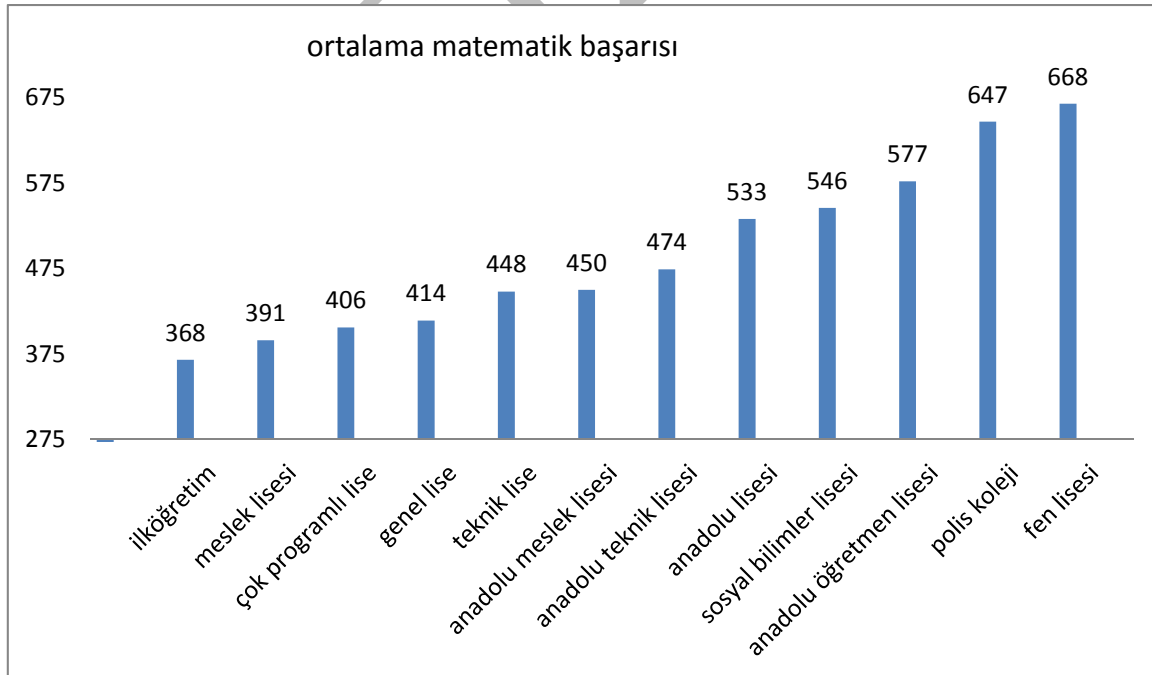
OECD ülkeleri arasında anne ve baba eğitim seviyesi değişkeni bakımından en düşük seviyeye sahip ülke olan Türkiye'de, anne ve babalar ortalama 8,7 yıl eğitime sahiptir ki bu ortalama OECD ülkelerinde 13,5'tir. PISA 2012 bulgularına göre öğrencilerin sadece yüzde ellisinden daha azının anne babası 8 yıl ve üzeri eğitim almıştır. Öğrencilerin dörtte birinin ebeveynleri üniversite eğitimi almıştır. Türkiye'de eğitim seviyesi yüksek olan ailelerin (en az biri lise sonrası eğitime devam etmiş) çocukları ile daha az eğitime sahip çocukların ailelerinin arasındaki puan farkı ise 59'dur. Yani lise sonrası eğitim almış bir ailenin çocuğu ile 8 yıldan az eğitim almış ailenin çocuğu arasında aynı sınıf düzeyinde bulunan öğrenciler için neredeyse 1,5 yıllık bir okul yılına karşılık gelen bir başarı farkı saptanmıştır (Tedmem, 2014).

## Okul Türleri Arasındaki Farklılıklar

Öğrenci velilerinin çocuklarını gönderecekleri okulla ilgili sorgulama yapmaları geçmişten günümüze devam eden bir gelenektir. Pek çok veli öğrenci başarısının okuldan okula farklılık gösterdiğinin farkındadır ve çocuğunun en iyi okulda, okulun en iyi sınıfında öğrenim görmesini arzu eder. Bu da velilerin okul seçimi konusunda bu kadar çok mücadele etmelerinin ne derecede haklı oldukları sorunsalını ortaya koymaktadır. PISA sınavı da bu soruna cevap bulmayı hedeflemiş, ülkelerdeki okullar arasındaki başarı farklılıklarının varlığını araştırmış, sonuçta Türkiye’de okullar arası başarı farkının yüksek düzeyde olduğunu öğrencinin yüksek veya düşük düzeyde başarı gösteren bir okula gitmesinin başarısında %62’lik bir değişime neden olabileceğini ortaya koymuştur (Tedmem, 2014). Tablo 4’te görüldüğü üzere okullar arası başarı farklılıkları çok büyüktür. Özellikle iki grup okulun farklı performans düzeyleri dikkat çekicidir. Bunlar düşük performans düzeyi gösteren Genel Lise, Meslek Lisesi ve Teknik Lise ile yüksek performans düzeyi gösteren Fen Lisesi, Anadolu Öğretmen Lisesi, Polis Kolejidir. Bu başarının aynı okul içinde aynı yaş grubundaki öğrenciler arasında değişiklik gösterip göstermediğine bakıldığında ise herhangi bir farklılık bulunmamıştır. Bu da Türkiye’nin eğitim sisteminin bir sonucu olarak ortaya çıkmaktadır. Çünkü Türkiye’de OKS, SBS gibi pek çok farklı sınavlarla kademeler arası geçiş sağlanarak, benzer puanlı öğrenciler bir arada toplanmaktadır. Bu da birbirinden oldukça farklı başarı gösteren okulların ortaya çıkmasına sebep olmaktadır. Bu tarz sınavlar aynı zamanda daha yüksek sosyoekonomik duruma sahip olan çocuğun daha iyi okullara gitmesine böylece eğitimde eşitsizliğin yaşanmasına neden olabiliyor.

**Tablo 4**

**Farklı türdeki okulların ortalama matematik başarı puanları**





## Sonuç ve Öneriler

Bu çalışmada Türkiye'nin PISA 2012 sonuçlarına göre sınava katılan öğrencilerin okul öncesi eğitim alma, ailelerinin sosyal-kültürel-ekonomik durumu, gittikleri okul türleri arasındaki farklılıklar açısından OECD ülkeleri arasındaki durumu ortaya konulmuştur. Buna göre öğrencilerin okul öncesi eğitim alıp almaması öğrenci başarısını pozitif yönde artırmaktadır. Okul öncesi eğitim öğrencileri bir üst kademedeki öğretim seviyesine hazırlarken, bu eğitim sayesinde okul öncesi eğitim almış öğrenciler bu eğitimi almamış akranlarına göre bir yıl daha avantajlı olmaktadır. PISA sonuçlarına göre okul öncesi eğitim alan öğrencilerin daha başarılı olması çeşitli araştırma bulgularını da destekler niteliktedir (Aslanargun ve Tapan, 2011; Dağlı, 2007; Özkesemen, 2008). Okul öncesi eğitimin bu denli önemli olması, Türkiye'deki öğrenci başarısını artırmak adına çeşitli önlemler alınmasını gerekli kılmaktadır. Okul öncesi eğitim hem kişisel hem de toplumsal getirileri göz önünde alındığında, okul öncesi eğitim yaygınlaştırılmalı ve toplumun her kesiminin faydalanabileceği bir hale getirilmelidir. Okul öncesi eğitim sadece maddi olanakları fazla olan ailelerin çocukları için değil, sosyoekonomik durumu kötü olan çocuklar için de mümkün kılınmalıdır. Bunun için ilkokuldan önceki bir yıl okul öncesi eğitin zorunlu hale getirilebilir. Getirilen yeni düzenlemeyle öğrencilerin ilkokula bir yıl daha erken başlamalarının değil okul öncesi eğitim almalarının önü açılabilir. Okul öncesi eğitimin toplumun her kesimine eşit olarak ulaşabilmesi için okul öncesi eğitim kurumları yaygınlaştırılmalı özellikle ilkokullara bağlı anasınıflarının açılması sağlanmalıdır. Ailelerin sosyal, ekonomik ve kültürel durumlarının daha iyi olması PISA sonuçlarına göre Türkiye'de olumlu yönde bir başarı artışının gözlenmesine neden olmuştur. Yani ailelerin ekonomik, sosyal ve kültürel düzeyleri yüksek olduğunda, düşük düzeydeki öğrencilerin başarısı arasındaki fark bir uçuruma dönüşmekte ve büyük bir eşitsizlik oraya çıkmaktadır. Bu nedenle dezavantajlı gruplar yönelik pozitif ayrımcı uygulamaların artırılması yararlı olabilir. Örneğin MEB'in de işbirliğiyle başarılı ve yüksek düzeydeki öğrencilerin okuduğu okullardaki öğretmenlerin daha düşük düzeye ve başarıya sahip okullara gönderilip bir rotasyona tabi tutulmasıyla bu eşitsizliğin biraz da olsa önüne geçilebilir. Türkiye'de bölgeye ve yerleşim yerine göre eğitim yetersizliklerinin ve eşitsizliklerinin giderilmesi için çaba gösterilmeli ve daha kapsamlı eğitim programları hazırlanmalıdır. Yine PISA sonuçlarına göre Türk öğrencilerinin başarısının gidilen okulla alakalı olduğu gözlenmiştir. Türkiye'deki eğitim sisteminin bir sonucu olarak bir öğrenci aynı okuldaki yaşıtlarıyla benzer başarı gösterirken, farklı okul türündeki yaşıtıyla farklı başarı göstermiştir. Birbiriyle aynı başarıyı gösteren öğrenciyi bir araya toplayan ve birbirinden farklı başarı gruplarına sahip okulların oluşmasına sebep olan Türk Eğitim Sistemi'ndeki bu ayrımcılık PISA sonuçlarıyla da doğrulanmış ve diğer ülkelerle olan başarı farkının doğmasına sebep diğer bir faktör olmuştur. Burada da yine öğretmenlerin farklı düzeylerdeki okullar arasındaki rotasyonunun sağlanması bu farklılıkların giderilmesi açısından yararlı olabilecek bir girişim olacaktır. Düşük başarı düzeyindeki öğrencilerin kişisel ve akademik başarılarının geliştirilmesi adına rehberlik hizmetleri verilebilir. Eğitim fakültesinde son sınıfta okuyan ve stajyer olarak okullara giden öğretmen adaylarının başarısız öğrencilere ek der benzerinde bir sistemle eksik konularının anlatılması ve öğrencilerin diğer akranlarıyla olan seviye farkının giderilmesine çalışılabilir. Ayrıca bu öğretmenlere özel bir bütçe oluşturularak öğretmen adaylarını daha da teşvik edici çalışmalar yapılabilir.

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İNTE 2014

# Undergraduate programming courses, students' perception and success

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## Abstract

Learning programming at university level is the challenge for both students and teachers, especially for students without previous exposure to programming. Most of the programming courses are compulsory and tough to learn for novice programmers. Students lack the understanding of basic programming concepts and algorithms and find programming difficult. Early failure of understanding important concepts weakens students' confidence and increases drop-out rate. Students' success rate and perception during most important programming courses at the undergraduate level at the Faculty of Science, University of Split over extended period of time were analyzed. Results of this research are presented in this paper.

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*Keywords:* Novice programmers; undergraduate programming courses; learning and teaching programming

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## Introduction

Programming is challenging subject for learning and teaching. Introductory programming courses at the universities are very important since they are responsible for students' acquiring of basic programming skills and knowledge. Unfortunately, they also have highest drop-out rates and we also noticed that students do not have knowledge and skills as expected even after they pass introductory programming courses. It is important to note that introductory programming courses in the literature are often "hidden" under "Computer science" title (Pears et al., 2007) (Radenski, 2006) which makes literature research more difficult.

Department of computer science at the Faculty of science (FOS), University of Split is responsible for teaching most of the programming courses for students with majors in computer science, mathematics, physics and technical science, with large number of students, especially in the introductory courses. It is not vast number of students compared to other universities in the world, but it is significant in the context of the faculty. In this paper, we examine students' success rate and perception during most important programming courses at the FOS.

In the next section we reflect on related work on programming difficulties for novice programmers and factors that might affect their learning of programming. Second section consists of data analysis and observations during three years on selected programming courses at the FOS.

## Related work

According to some researchers, students mathematical abilities often positively reflect on their programming abilities (Bennedsen, 2008), (Sauter, 1986). Hence, teachers tend to design curriculum that favors such students, while other aspect such as problem solving might be neglected.

Expert programmers know more than novices, but researchers emphasize that the quantity of knowledge is not the only difference, because experts also organize their knowledge better (Lister, Simon, Thompson, Whalley, & Prasad, 2006). Novice programmers have a tendency of making context specific programs and demonstrate superficial knowledge of programming concepts (Lahtinen, Ala-Mutka, & Järvinen, 2005). They learn syntax and little pieces of code, but lack the ability to put all the pieces of the program together.

Researchers in (Hawi, 2010) emphasize ten factors that affected their students, and some of those factors that we also noticed through observation and interviews with our students were: "learning strategy", "lack of study", "lack of practice", "teaching method", "exam anxiety" and "cheating". Some of those factors were also noted in (Bennedsen, 2008) as predictors of success for programming. Students have additional difficulties with abstract

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thinking. In the research conducted by (Eckerdal, Thun, & Berglund, 2005), students were interviewed with the purpose of determining if they understood what learning programming means. Many students stated it is special way of thinking, but were not able to describe in detail.

In the next section, we analyze success rate for students at the FOS during three academic years in order to determine if there is correlation between introductory programming courses in first and second semester and introductory mathematical courses, and to examine success rate on following programming courses.

### Undergraduate programming courses research

First year undergraduate students at the FOS have very few (if any) programming skills and knowledge. Some of those students enrolled major in computer science, and it is important to note that computer science study programme is for future school teachers of computer science. Knowing that, task for their teachers seems much more difficult since they have to teach adult novice programmers how to learn programming and also how to teach other novice programmers. Besides computer science majors, other students with major in physics, technical science and mathematics (or double major students with the combination of two subject) attend programming courses. That increases problems for teachers since different student groups (or student types) might require different approaches but curriculum is the same.

Each of two semesters at the FOS consists of 15 weeks. Most of the programming courses consist of two school hours (45 minutes) of lectures per week and two school hours of labs per week. During first semester, all students enroll introductory programming course Programming I (P1), and during second semester they enroll course Programming II (P2). During course P1 students learn procedural programming in Python as soft introduction to programming. Students find that course difficult since most of them learn programming for the first time. Second semester during P2 is still introductory, but P2 is “crossover” course between procedural programming and introductory object-oriented programming in C#. First half of P2 is sort of “crash course” in C# syntax with console applications and similar assignments and concepts covered in P1, then followed by second half of semester when students get introduced to graphical user interface.

### Data collection and analysis

We collected data from all enrolled students during three academic years and most important (and challenging) programming courses at the FOS: Programming I, Programming II, Data structures and algorithms (DSA), Object oriented programming (OOP), Computer Architecture (CA), Databases (DB), Problem solving (PS) and Network Application Programming (NAP). Since we already stated that some researchers consider mathematical abilities very important in programming, we also analyzed information on two first mathematical courses: Mathematics I (M1) and Mathematics II (M2), during first and second semester, respectively. In Table 1 there is an overview of pass rate for selected courses. Total number of students contains total number of students that only enrolled course for the first time, for all three years combined.

Table 1. Pass rate for selected programming and mathematical courses

Course	2010/11	2011/12	2012/13	All three years	Total number of students
P1	60,87 %	53,67 %	48,47 %	53,62 %	511
P2	51,08 %	44,00 %	39,09 %	44,03 %	511
DSA	86,96 %	87,69 %	72,73 %	81,92 %	177
OOP	89,32 %	79,31 %	73,85 %	81,96 %	255
CA	77,50 %	75,00 %	64,15 %	73,06 %	193
DB	100,00 %	98,44 %	83,56 %	93,12 %	189
PS	84,78 %	58,33 %	75,86 %	78,16 %	87
NAP	95,12 %	82,61 %	80,65 %	86,44 %	118
M1	50,00 %	52,52 %	21,15 %	39,55 %	397
M2	42,16 %	39,57 %	16,03 %	30,98 %	397

It is obvious that success rate for programming courses P1 and P2 are the lowest, like mathematical courses M1 and M2. Since all those courses have the lowest pass rate among observed courses, interrelationship between final exam grades for those four courses was further analyzed using correlation analysis (Cohen, Manion &

Morrison, 2007). Correlation analysis is used for measuring association between variables and there are several simple measures which depend on data type and distribution.

First step before correlation analysis is to check data distribution. There were some doubts about normality since graphical representation for each course and year diverted from normal curve (example for course M1 is on Fig. 1). Skewness coefficient was checked to determine if there is any further evidence that some variable is

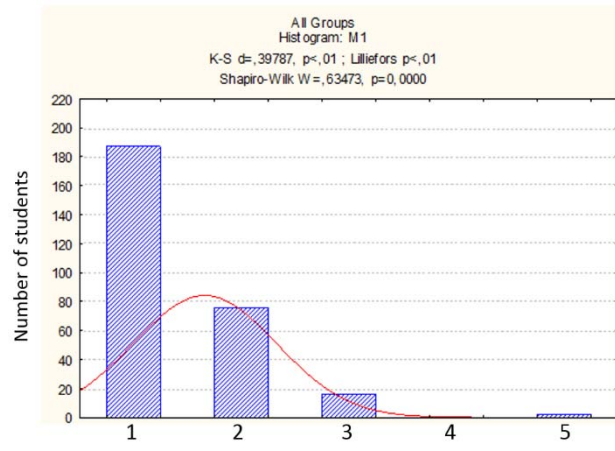


Fig. 1. Histogram for course M1 (grade distribution)

skewed.

Simple check consists of examining that skewness coefficients are not too large: absolute values of the skewness coefficients should be less than two times their standard errors. Calculation for each course during each year demonstrated that data is not normally distributed (example for year 2010/11 in Fig. 2).

Variable	Year=2010./2011. Descriptive Statistics (progr i matem)						
	Valid N	Mean	Minimum	Maximum	Std.Dev.	Skewness	Std.Err. Skewness
P1	74	2,027027	1,000000	5,000000	1,323890	0,968547	0,279197
P2	74	1,581081	1,000000	5,000000	0,921683	1,697046	0,279197
M1	74	1,500000	1,000000	3,000000	0,646381	0,938390	0,279197
M2	74	1,432432	1,000000	4,000000	0,723028	1,806875	0,279197

Fig. 2. Output analysis for year 2010./2011.

Hence data was not normally distributed, correlation analysis was conducted using Spearman's nonparametric test commonly used for ordinal data (Cohen, Manion & Morrison, 2007). Results are presented in Table 2.

Table 2. Spearman's correlation analysis

Variable	P1	P2	M1	M2
P1	1,000	0,802 *	0,655 *	0,626 *
P2	0,802 *	1,000	0,685 *	0,731 *
M1	0,655 *	0,685 *	1,000	0,747 *
M2	0,626 *	0,731 *	0,746 *	1,000

All correlations marked by asterisk are significant at the level  $p < 0.05$  which means there is significant correlation between all grades. Simple explanation might be demonstrated on example: most of the students who passed P1 also passed P2 (positive correlation 0.802). It would be wrong to assume that correlations imply causal relationships since success in one course does not cause success in other.

We stated that observed courses are considered most challenging but one might argue since pass rate for courses after first semester are much higher and that at first makes those courses seem less difficult. The fact is that students that failed course P1 were not able to enroll other programming courses besides course P2 which reduced the number of students in the following programming courses.

Students who enrolled courses more than once were also included in analysis since they participated in the survey and their expected and actual grades are presented in the Fig. 3. Since survey results were anonymous, it was not possible to compare expected grades with actual grades case by case.

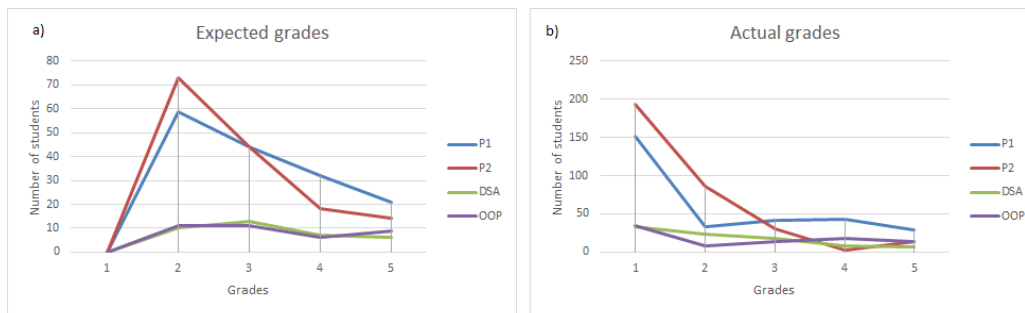


Fig. 3. (a) Expected grades (b) Actual grades

It was interesting that not a single student selected answer 1 (fail) in the survey, although there were many students who failed. The number of students who participated in the survey was much lower than actual number of students enrolled in each course. The survey was conducted once using pen and paper forms with students who were present in the lab that particular day. Some of the enrolled students unofficially dropped out, which means they did not attend classes any more but were still enrolled in the course or attended occasionally. Because of such different numbers, any comparison of the expectations and final results is not possible. For example, in P2 surveys 14 students expected grade 5, and 13 students actually got that grade. Since results were anonymous, it is not possible to know if those 13 students are really those who expected it.

Next, grade average for students that passed P1 and P2 were compared with grade averages for courses DSA and OOP. In the year 2010/11 students achieved average grade 3.19 in P1, 2.64 in P2, 3.12 in DSA and 3.09 in OOP. There is a trend of higher grades in programming courses after first year for students that pass P1 and P2.

## Conclusion

Students that enroll undergraduate programming courses at the FOS are mostly novices without any programming experience. The first year programming courses are impassable obstacle for many students. Since different researchers hint that mathematical abilities affect programming as we stated above, the correlation analysis was conducted and there is high correlation between students' success in introductory programming and mathematical courses. Curriculum for programming courses should be closely examined to determine if assignments and presented concepts possibly favor mathematical way of thinking. Courses after second semester consist of students that pursued their educational path beyond first obstacles. Some of them continue to struggle and fail because introductory programming courses could be their top potential.

Students' perception and final grades differ in percentages, but there is too high difference in the number of students that enrolled courses and students that participated in the survey. Since it was not possible to compare results, the conclusion is that students should be surveyed about their expectations directly (not anonymously). Such results would be comparable and researchers would be able to determine if students' expectations match actual results. Sometimes students have too high expectations, but sometimes exam assignments might be inappropriate.

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# Universal design teaching in architectural education

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## Abstract

The social responsibility of the architect is an important tool to enhance accessibility awareness in the society. In this sense, there is a need to develop teaching methods for architecture schools. This paper presents a model for ‘universal design’ teaching in architecture schools that aims to fulfill the need for aware and responsible architects and for society members who are aware. The paper aims to stimulate debate about universal design teaching in higher education. The paper is anticipated to provide schools and universities with ideas to set up universal design courses and to disseminate the studies in this manner.

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*Keywords: design education, universal design, universal design education, design for all, accessibility*

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## 1. Introduction

The term ‘disability’ is in need of a revision and a re-definition. Considering ‘diversity’ instead of ‘disability’ may be a good starting point for this revision. Besides, in many other situations like senility, infancy, childhood and pregnancy; social and physical requirements, anthropometrics and strength levels are far more different than the general expectations.

As the effect of physical environment on people is undeniable, physical spaces- when designed for all- have a considerable effect on participation in educational life and workforce. Yet, this requires a modification in ‘existing’ design understanding towards ‘universal’ design understanding. The leading tools for this kind of modification in design are; legal regulations and education. When these two areas lack inclusivity, all of the other policy and services in other fields become inconclusive. At this point, there is a need to examine approaches and perceptions in the context of ‘accessibility, inclusivity and universal design’. Knecht states that (Knecht, 2004); accessibility is a mandate; universal design is a movement. Accessible, adaptable, and visitable environments are covered in the codes, standards, and regulations.

Universal design is a worldwide movement that approaches the design of the environment, products, and communications with the widest range of users in mind. The Kennedy Center Access Office points out that (The John F. Kennedy Center, 2006); accessible design tends to follow the guidelines, which lay out the minimum requirements or standards for making environments accessible. Universal Design looks beyond those minimums to develop environments that are functional and usable by the broadest number of people in the society, whether disabled or not.

In ‘universal design’ context, architect has an approach that will facilitate the design to consider every user as ‘normal’. An architect who internalizes this kind of approach will no longer design the product, and then try to adapt with add-ons, in order to make the design ‘accessible’.

The social responsibility of architect appears as an important tool when it comes to create awareness to these issues in the society. Designing the everyday-living environments to be inclusive is one of the fundamental factors for awareness rising in society. However, architects who are aware of their ‘social responsibility’ are required for this purpose. Sensitivity and awareness of responsibilities cannot be expected to exist in human nature from birth. These qualities can be developed with the right kind of education and approach.

Higher Education institutions are ideal places for rising awareness of professionals and other society members. Universal Design should be taught in all places where the future professionals who will work in shaping the built environment are educated. In The Unesco/Uia Charter for Architectural Education (Unesco/Uia Charter, 2011), it is stated that; it is in the public interest to ensure that architects are able to understand regional characteristics and to give practical expression to the needs, expectations and improvement to the quality of life

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of individuals, social groups, communities and human settlements. As for the goals; a decent quality of life for all the inhabitants of human settlements and an architecture which is valued as the property and responsibility of everyone are also specified. Also, in the Charter (Unesco/Uia Charter, 2011), it is indicated that among the objectives of architectural education is the awareness of responsibilities toward human, social, cultural, urban, architectural, and environmental values, as well as architectural heritage. According to the charter; architectural education involves the acquisition of understanding of the social context in which built environments are procured, of ergonomic and space requirements and issues of equity and access.

In the conclusion part of the charter it is pointed out that; 'beyond all aesthetic, technical and financial aspects of the professional responsibilities, the major concerns, are the social commitment of the profession, i.e. the awareness of the role and responsibility of the architect in his or her respective society, as well as the improvement of the quality of life through sustainable human settlements.

This paper presents an education model of universal design in architecture that aims to fulfill the need for aware and responsible architects equipped with technical and practical knowledge, and for society members who are aware and sensitive. The model was designed as to reject the medical model and support the social model of disability. As a consequence, access was viewed as an environmental and not a medical issue. The issue was to be seen as one not of disability but of access.

The paper also aims to stimulate debate about universal design and particularly its teaching in higher education. However, with the model presented, the aim is not to define a particular curriculum for an inclusive design course, instead, the aim is to create a framework. The framework is expected to lead to further study, adaptations or alterations of the studies and courses in this field. Another aim of the paper is; to lead a way for universal design courses to be an integrated part of the whole program, not a theoretical add-on course that stands as a result of legal obligation.

## **2.Universal design and its education in architecture schools**

Universal Design is a design philosophy that aims to create an inclusive, sustainable society, where every person can participate to the greatest extent possible (Preiser, Ostroff, 2001). The universal design products benefit the users with many different abilities, limitations, and needs. Designers' new challenge is how to design products that are usable, enjoyable no matter how the user is different from others. The goal is to design the environment accessible and equal by universal design (Sooshin Choi, acc.2013).

Universal Design has been described to comprise the following three key elements (Christophersen, 2002):

User-Designer interaction:

Any design tool or technique, applied by designers, which aims to more closely align the requirements of the end user and the resulting end product(s).

Understanding people:

Information which promotes further understanding of the target market (i.e. the entire population), such as information on demographics, statistical data, descriptive information of the range of human abilities and the consequences of impairment in any of these abilities, an understanding of how human's interact with their surrounding environment, and so on.

Evidence-based findings:

Any retrospective information on experiences (positive and negative) of existing products or environments, such as the results of post-occupancy evaluations, can be fed back into the design process to better inform future designs.

Universal design concept, being not solely for architectural profession, involves architecture quite closely. Environments, when 'universal design' and 'inclusivity' concepts are considered in the designing process, will get closer to the aim of providing safe, accessible and inclusive environments for all.

RIBA states that; it is important to teach inclusive design and there are strong moral, legal, social, economic, sustainable and environmental reasons why inclusive design is important and it is evident that the expectation that architects will design inclusively is now high on the agenda. Architects and others whose work impacts on the design and quality of the built environment are expected to ensure that any design intervention is designed inclusively to meet the needs of the diverse population (RIBA).

The aim of inclusive/ universal design education is to raise awareness, to develop a sense of responsibility, to comprehend the current regulations and conditions as well as getting a grip of the historical perspective. The universal design education, by nature, adopts a multi-professional and interdisciplinary approach. Courses regarding the area are important tools to reflect 'good intentions' as the 'right behaviors and designs'.

When the courses related to the areas of universal design and accessibility for architects contain mostly standards, rules, regulations and design problems, students tend to focus on technical details, rather than users. When designers tend to ignore the human factor, environments do not go beyond being accessible and they do not reach the level of inclusivity. Students should understand that; it is the people they are finding solutions for, not the standards that need to be met. The needs and feelings of individuals should form an important part of the environment design.

Thus, universal design courses should not only be limited to technical details of the physical environment and design but also should contain a sense of the social dimension, approach and attitudes. In many countries, there are rules, standards and regulations more than enough to make environments accessible, but as long as they are solely mathematical calculations and dimensions, they remain insufficient.

The target of inclusive and universal design education should be a holistic point of view, focusing not only on the design scale but also the dimensions of the user relationships. And the ways to convey this holistic approach has to be sought in architectural departments of universities through the courses.

### 3.A universal design education model for architecture students

Design education involves both theory and practice, thus, universal design, being an important part of design, should appear not only in theoretical courses, but also in practical applications as well in the curriculum, see Fig. 1.

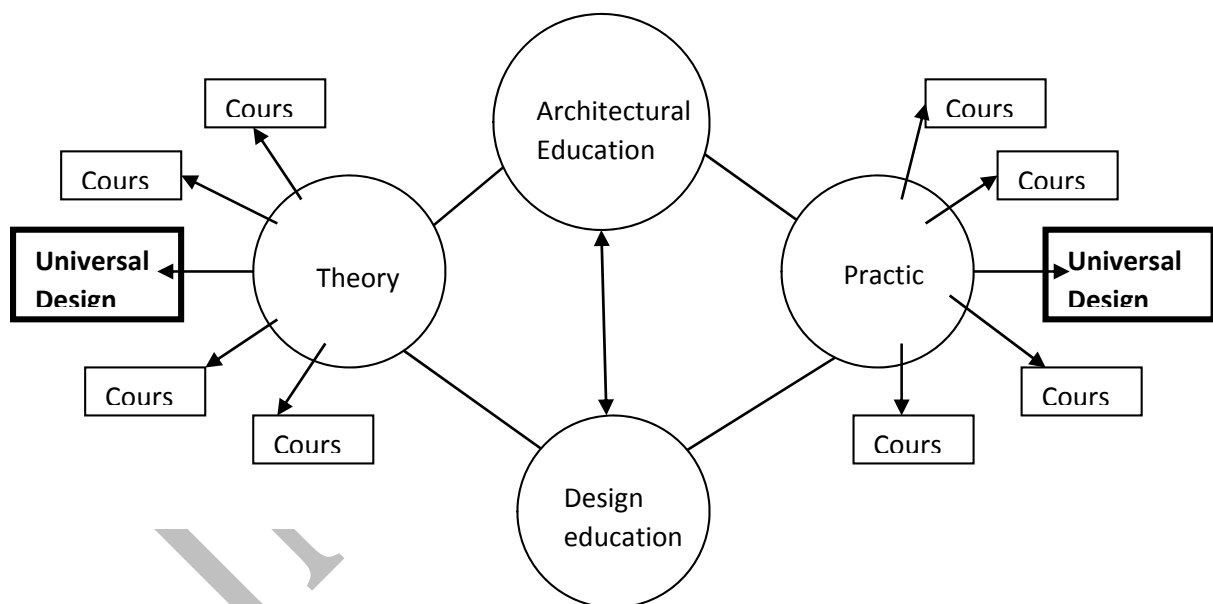


Fig. 1. Universal design education in design education curriculum

#### 3.1.Aim and Scope

Universal Design covers many topics, has extensive theoretical background as well as the opportunity of putting theory into practice. Thus, the determination of the scope of universal design education is essential. Besides lectures about theoretical issues, it is essential to use other methods like discussions, audits and case studies when teaching universal design.

In this context; the scope of the model is built upon;

- building empathy,
- social and legal awareness,

- awareness regarding the physical environment,
- universal design knowledge,
- inclusive and universal design in architectural settings,
- best practices,
- typological studies,
- developing new approaches and design solutions,
- future directions that universal design is heading to.

Within the extents of the scope described above, the framework of the model is formed as given below (adapted with changes from Christopherson, 2002):

Theoretical knowledge transfer/ Gaining Knowledge:

- Teaching of the technical aspects of the subject; historical and legal, developments, standards, the relationship between accessibility and design, anthropometrical dimensions, dimensions and requirements related to physical space.
- Making design standards and knowledge accessible.
- Providing user contribution:
- guest lectures: building empathy by inviting the persons with different needs and listening to their experiences and thoughts,
- learning about life styles and user requirements through questionnaire, interview and observation techniques,
- trying out being with a disability (using wheelchairs, blindfolds, canes etc.) and experiencing the barriers of daily-environment.
- Evaluation:
- Evaluation methods, access audits, teaching the system and tools.
- Innovation- idea generation :
- Finding new solutions to both social and design-related problems, whether being a new problem area or a conventional solution is already put.

### 3.2. Model

The universal design education model is designed to consist of 6 modules in total with four of the modules being in the undergraduate and the remaining two being in graduate course.

The first 4 modules are built upon creating awareness and basic background information, while 5th and 6th modules are formed with the expectation that graduates submitting to the course have some awareness and theoretical background about the subject. As a result, for a student who took the first 4 modules, the next two modules are continuation rather than repetition.

#### 3.2.1. 1st module: pre-evaluation:

This module has two major aims;

- to get the students realize their awareness and knowledge level about universal design and related issues prior to the course and feel the need to re-consider their approach to the subject,
- to lead to the understanding that; without having knowledge, making assumptions is unacceptable.

Process: Applying an awareness test and conducting discussions.

#### 3.2.2. 2nd module: basic disability and diversity information and case study

This module aims;

- to form a theoretical background about disability and diversity issues,
- to build awareness and,
- to encourage taking initiative.

Also, conveying the views and experiences of the ignored experts who have to live with the consequences of a disabling environment is important in this module.

There are 4 major areas of concern in this module;

- awareness regarding the different conditions of humanity,
- historical and legal perspectives,
- social approach and effective communication,
- disability types.

### *3.2.3. 3rd module: the relationship between universal design concept and architectural design*

The aim of this module is; to link disability/accessibility knowledge to architectural design process.

The main headlines to mention are;

- the relationship between different conditions of humanity and design,
- accessible, inclusive and universal design concepts,
- assistive technology,
- anthropometrical dimensions that appear in various conditions, space and reach requirements, posture positions, data about the use of force.
- physical barriers: access, circulation, recreation and building interiors.

Process: Besides the lectures about the headlines given above, exercises about physical barriers and relationship between accessibility and architectural design compose the process of this module.

### *3.2.4. 4th module: case study*

In this module, the aim is to develop the students' own evidence-based design practice experiences.

Process: Case study; problem determination and solution finding.

### *3.2.5. 5th module: review*

In the 5th module, the aim is to build a framework for universal design studies. As the students are architects, the major concern areas are;

- the review of the first 4 modules and best practices,
- the role of design on quality of life, legal arrangements and social behaviors,
- the latest update on the legal arrangements, rules and regulations both in national and international scales,
- resources and institutions to be consulted when in need in professional life.

The process includes;

- studying how universal design will be reflected on the design solutions with regard to architects' own values and works,
- discussions and sharing of the examples experienced by the students',
- the determination of resources and institutions to be consulted.

### *3.2.6. 6th module: searching and sharing (being up-to-date)*

In the last module, the aim is; searching and sharing best practices, new developments, news, trends and approaches in universal design related issues and generating innovative ideas.

Process: This module is a flexible module, providing space for sharing and commenting on recent discussions.

Also, the social responsibility of the architect and, the other areas of inclusion (social inclusivity, web sites, accessibility of educational materials, evaluation systems etc.) are to be covered in this module and the students are expected to come up with some innovative ideas not only as 'architects' but also as 'intellectual' members of society.

#### 4. Conclusion

As the awareness rises, it will be clearly seen that the boundaries and limitations do not lie inside a person but rather in the environments, products or services which fail to fully respond to all of the potential users' needs. As the concept of disability begins to be thought by means of the relationship between the individual and the environment rather than the disabled people, the point of view, that is, considering the role of the environment on the potential of the individual will become stronger. And this point of view is relatively new to many societies.

Effective 'universal design education' has to contribute to the formation of the future architects' values and help remove the environmental barriers, providing environments to be designed inclusively from the beginning of the design process, with a holistic and sustainable perception of the designer.

Universal design education has to provide a multi-professional and interdisciplinary approach and the courses should provide a learning environment that is both inside and outside the faculty.

Universal design education should not passivate the student by lecturing solely on the technical knowledge. Discussing, searching and challenging should be involved as well. Universal design education should be a mixture of both passive and active methods of learning. Searching through the related resources; applying questionnaires and making observations, gathering the data together and adding their own interpretations help the students to internalize the subject and turn it to their 'own' issues. At this point, the concept of 'learning by doing' to step in becomes a necessity. Learning by doing has to be an essential part of universal design courses.

As the area is still in the process of developing, the students have to be directed to self-learning and self-research. Also, life-long learning programmes that will be offered by organizations like the local chambers of architects are essential to sustaining universal design practice in architecture.

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# University and industry: an experience in teaching, research and artistic expression

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## Abstract

This study shows the results of a collaboration between University and industry which saw teachers, some researchers and students concentrating on reinterpreting the industrial production of more than 40 years of a historical Italian Company in terms of design and communication. Change, Transformability and Quality were the values around which ideas and experiments were developed. In the project, phases of teaching on its philosophy, led by the Company, alternated with stages of design in the field of product and communication, led by students, and phases in which other students reinterpreted these ideas coming to express them through artistic performances, later on subjects of an exhibition.

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*Keywords:* representation; product; communion

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## 1. Introduction

This study shows the stages of a journey undertaken by the Department of Sciences for Architecture-University of Genoa- Polytechnic School together with the industrial world.

In 2012, the historic Genoese company Viaggi Arredamenti and the Company FLOU, a symbol in the national and international production related to the spaces for rest, started a study and a research. This work involved not only teaching staff and researchers, but above all also hundreds of students.

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## 2. The culture of the rest

The aim of this study was to reinterpret, in terms of communication and ideation, an industrial production with more than 40 years of experience. The values around which the ideas and experiments articulated and developed were Change, Transformability, and above all Quality. The students engaged themselves to deeply examine the market peculiarities of the furniture industry nowadays and the role of a Italian Company like FLOU within it.

a



b



c



Fig.1 (a) Gladstone's Land- Edinburgh,(XVI cent.) (b) Bed of Louis XIV- Versailles (XVI cent.), (c) Georgian House Edinburgh (XVIII cent..)

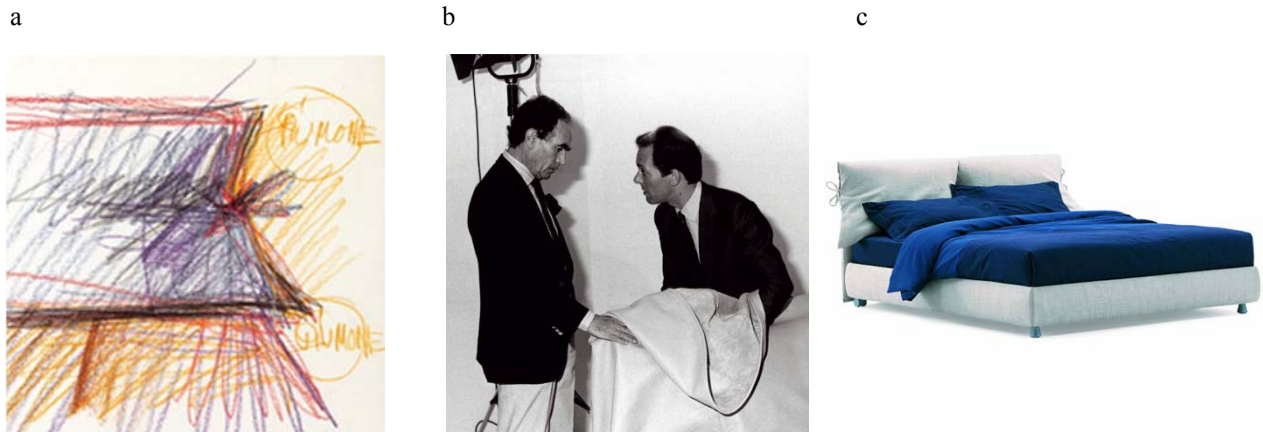


Fig.2 (a) preliminary sketch by V. Magistretti for *Nathalie* bed (b) V. Magistretti and R. Messina, founder of FLOU, (c) The *Nathalie* bed

Through specific preliminary lectures, in fact, they had the opportunity to study the origins and characteristics of the spaces for rest, to get the environments and products of contemporary designers. Attention was then focused on the production of the FLOU Company, its history, its potentiality and its change margins in order to formulate a new idea not only of a product, but also of its communication.

Other groups of students, instead, focused only on a reformulation of the communication of existing products.

The objective of this phase was precisely to simulate a real professional and scientific collaboration among young experts and businesses, identifying constraints, design requirements and possible proposals.

## 2.1 Graphic expression.

The early stages of ideation were dealt mainly by designs that summarized the initial concept and that, because of the processing speed, were easily subject to repeated changes and, in a succession of refinements, could reach a final form. The stage of development of virtual models, allowing dimensional and formal checks of a proposal, was therefore indispensable. In this phase the ideas expressed in digital form found an expression that allowed to verify their potentiality even in an environment close to reality.

Finally, the whole of this creative process was collected in tables suitable for a formal presentation in front of a group of experts, who were asked to judge the best projects to identify the authors for a stage with the Company.

Even in this case, just to achieve the effective communication in terms of enhancement of the idea, the graphic composition including drawings, rendered images, text and additional signs was looked after in a particular way so as to define the identity of the project exposed in a direct manner.



Fig.3 preliminary sketches, 3d model and final presentation of the project *Aegis* by Alama, Albergoni, Franceschi,



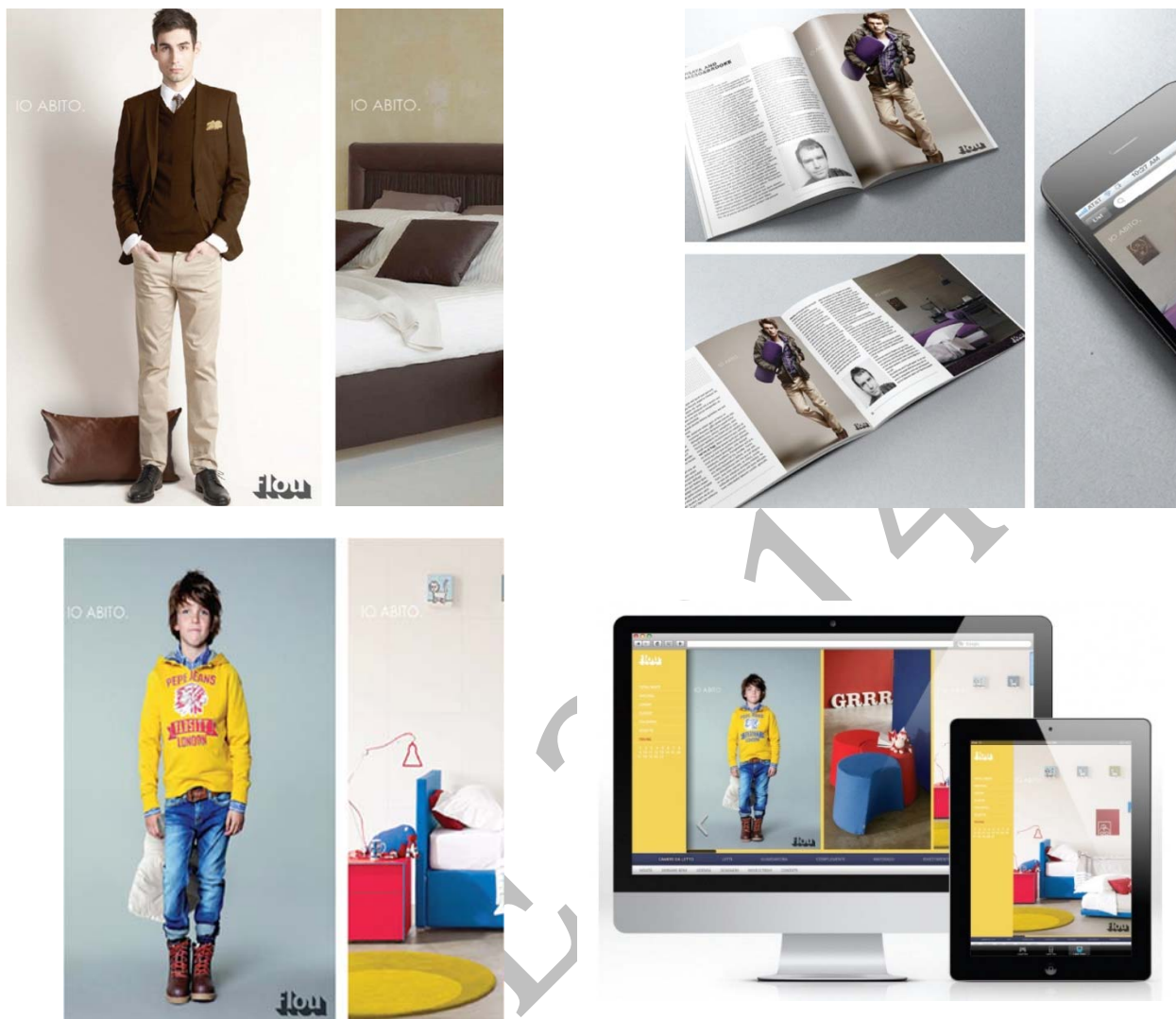


Fig.4 Study for a new communication of the FLOU company – Project by Valdenassi, Zangani.

## 2.2 The exhibition

a



b



Fig.5 (a) Drawing -by Cinzia Ratto- prepared as main image of the exhibition (b) Entrance Panel of the exhibition *Sonno & Sogni*



Fig.6 First part of the exhibition with illustrated panels

The whole research work, in which students, experts and professors worked side by side, then became the inspiration for an exhibition. The aim was not only to promote the educational model adopted, i.e. the cooperation between University and Industry, but also to underline how behind every design interpretation related both to the product and communication, there is always a creative aspect that can gather poetic and profound suggestions.

The place chosen for the exhibition was the ancient “Loggia dei Banchi”, the seat of the sixteenth-century Genoese Stock Exchange, an example of extraordinary architecture where merchants, sailors and citizens met to exchange their goods, their ideas and their aspirations. All the graphic and compositive design of the exhibition was organized by the staff of the Department of Sciences for Architecture, choosing a narrative style inspired by the illustrations of fairy tales, just to highlight the creative and imaginative dimension of this experience.

In the first part the exhibition was organized as the description of what was done in the lecture halls and in a second part as an atelier where other students, but not only, designers, experts and artists tried to express their dreams and their own world ideas about what normally lives in our home as spaces for our rest and our dreams.

Artists such as Luiso Sturla, a contemporary painter, the Ligurian Academy of Fine Arts students and of course the University of Genoa students of design and communication were invited to express figuratively their interpretation of certain iconic products of the Company. During the exhibition, each according to his inspiration, they gave birth to an artistic performance in which visitors could watch ... and in some cases even participate .

A third step also covered the final phase of the collaboration with the presentation of prototypes of the experimental project Natevo. For this project, other students, always within the Department of Sciences for Architecture, ventured into a workshop, structured ad hoc, in the study of ideas, images and designs.

They thus sought new forms of relationship among interior elements and Light, facing a project based on the concept of “hybrid” as a conceptual and functional mixture.





Fig.7 different moments during the exhibition, with students working on the prototypes

a



b



Fig.8 students working with airbrush at the project *Spaceshrooms* for an unsheatheble wardrobe



Fig.9 students and visitors at the exhibition

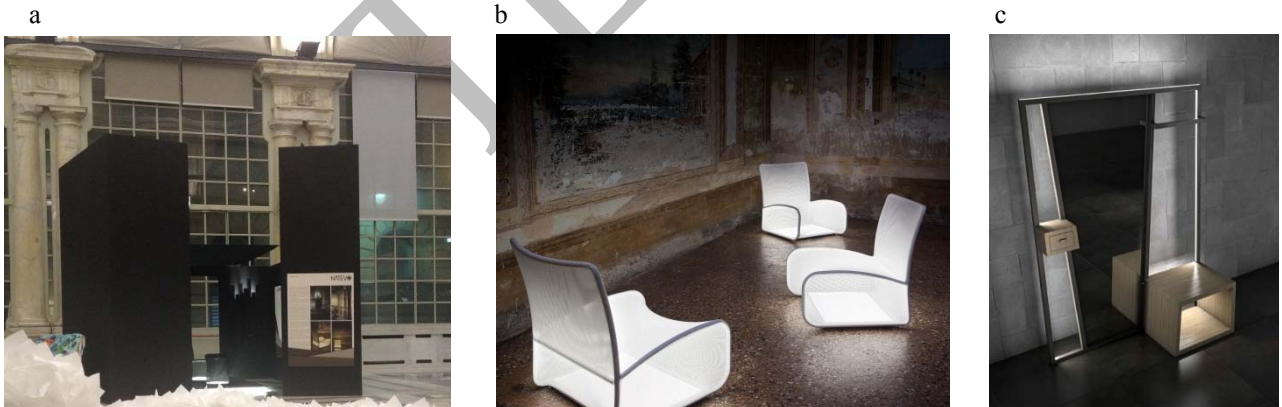


Fig.10 (a) box NATEVO at the exhibition – (b) *Nuvola* by NATEVO – (c) project *Irrettangolo* by the student Xiang Qinyue.

## Conclusion.

The research carried on with students, teachers and representatives of the industrial and productive world was, as we have just seen, very articulate and especially interesting in order to understand which elements are to be developed with a view to an increase of future professional people. Representation was the common platform around which several experiences were developed as a language necessary to support all the phases of the study: from the morphological analysis of rest spaces to the delineation of the first concepts and to the development of deeper ideas whether as for products or in regard to the communication of the strength (validity) points of the Company itself. So the pragmatic adequacy applied to graphic expression became one of the main points of the described experience.



Finally, the organization of the exhibition can be considered as the “summa” of the previous experiences with a peculiar regard to representation, examining the necessity to entrust the graphic language, by virtue of its immediacy, the whole narrative of the lived experiences.

The development of the visual arts in combination with the selected products for the exhibition was especially important to deepen the significance of shapes and colors in the perception and reinterpretation of icons in the general view of the manufacturing production such as “Nathalie” by Vico Magistretti

The result was amazing. As educators, we wanted to give our future designers the capability not only to value the example of a Company and its industrial success, but also to recognize in it the importance of a back ground of ideas, of personal involvement, of technical, professional, and organizational skills and most of all the importance of strong communication and concreteness abilities to realize a dream.

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# University industry linkage projects management system

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## Abstract

In Universities, controlling or organizing the senior projects, project proposals, thesis and internship of students is being very hard without an online system. If a project brings university and industry together it will be useful to society. But without a bridge this is not possible to students and industry owners. In this case an online system that simplifies processes and brings students, academics and industry together is needed. In this study a web based application is created. There are 5 types of users in this system and when industry has a project and needs employee then it add this project to the system and an academician would be a consultant to this project then students apply to this project. Owners of the industry can make comments about their student employers by this system and can send to the consultant. A case study of this management system was done in Computer Engineering department.

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*Keywords:* university-industry, project mangement, online sytem, project proposals, senior projects

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## 1.Introduction

Recent years in Turkey, by opening new universities the number of graduates has increased gradually however the number of experienced or well-qualified gradutors haven't increased. The most important reason is that students can't take part in a real project from industry during their university education. Looking from industry side, the same problem occurs in different point of view.

Firms in the industry want to do projects but they have problems concerning how and with whom to do. Students, who choose their projects, master's and doctorate theses in real projects which are useful for industry instead of imaginary projects, will be more experienced when they graduate from the university.

From the point of the academicians view, they will be consultant in real projects and be experienced when they are interested in current industrial problems. So they don't have to produce imaginary projects in theses for their students.

In this study an online system is designed to bring industry, students and academician together and co-operate them for solving the problems determined above. When we survey the previous systems, Sakarya University's MUYS (Professional Applications Management System) project can be seen. The aim of this system is to make the students active worker in a firm of industry in their last terms of education with the application of 3+1 in vocational schools and 7+1 in bachelor's degree. This system is a project which only covers Sakarya University whereas the developed system's is only for Sakarya University and the city of Sakarya at the beginning, but then for all of the Marmara Region's universities and industries.

Technology Transfer Offices and Technology Development Zones are opened to provide cooperation of technology and industry in universities but they aren't enough to get academicians and students together in real project without an online system. Of course only online system can't be sufficient to bring university and industry together. Besides some training, advertisements and arrangements which make students compulsory are necessary. Anyway Martin and his friends expressed that it is not an easy work. Martin and his friends studied about how to make association and provide trust in research of university and industry in three countries (UK, Japan and South Korea). They searched the associations of 618 university and industry projects which are still working. And they expressed that first formation of trust depend on the common reputation, precautions of agreement and the power of firm (Hemmert, Bstieler & Okamuro, 2014).

In another study, they investigated the effects of the cooperation of university-industry and industry-government on the performance of firms. The results of this investigation show that this cooperation didn't affect the firms at the side of innovation positively but it was emphasized that it will be positive for universities (Eom

& Lee, 2010). But this result is valid for Korea and it is clear that positive results will be taken for developing countries like Turkey. The study of Motayama has a qualification which verifies this claim. In his study, Motoyama determined that in the development of nanotechnology the cooperation of university and industry will form research cell and encourage them to work interdisciplinary (Motoyama, 2014). Fuentes and his friends say that interactions between academy and industry have three main stages. First one is drivers of interaction, second is channels of interaction and third is the benefits which were perceived from cooperation. Study based on original two surveys which were done in 2008. According to the results, channels have an important role in interaction (Fuentes & Dutrenit 2012). So, in this study an online system has been developed to reveal this and similar channels. While Fuentes was talking about the long term benefits however Saunders and Hampshire talk about both long and short term benefits. According to their research results, they understood that there were benefits and multi goals in both terms (Saunders & Hampshire, 2008).

Our study's aim is the same as the investigated the systems LCS (Technology Laboratory for Computer Science) and MCG (Motorola's Computer Group) which were built for transferring technology from academy to industry. In 1995, there weren't a system like these in the literature with this extent and content (Arvind, Dahbura, & Caro, 2000). Universities have a critical role in research. If universities don't support the industries, the world will be very different condition in negative way. In the same way, industries support the universities too and create an application area. This shows that university-industry relations are inseparable (Russell, 2009).

In this study the system which was developed was indicated and determined in details in section 2. And then, in section 3 the process of the system was explained and supported by images.

## 2.The System Developed

The system was designed as online system and developed with ASP.NET by using C# programming language. Interface elements which are used in designing web forms are from TELERIK (www.Telerik.com).

MSSQL Server 2012 was used as Database Management System. In database associations Linq was used and most database operations were done by triggers and stored procedures. The database diagram which was used in developed system is given in Fig. 1.



Fig. 1. Database diagram.

In Fig. 1 as can be seen, users table, projects table, firms table and projectApplication table that stored students applications for the projects. These tables are very important tables for the project.

### **3.Method**

The online system which is developed in this study is user based study and every user has different authority that can see different menus from other users. There 5 types of user in this system. These are;

- Admin
- Moderator
- Academician
- Firm
- Student

#### *3.1. Admin*

He is the system Administrator. He does all the insertion and deletion operations. He does especially insertion and editing of firms and academicians.

#### *3.2. Moderator*

He hasn't authority like admin but he has authority to view and update many operations.

#### *3.3. Academician*

They can be an advisor for projects that firms were added before. They grade the students which are in projects that they are as advisor. They can accept or reject student applications for projects.

#### *3.4. Firm*

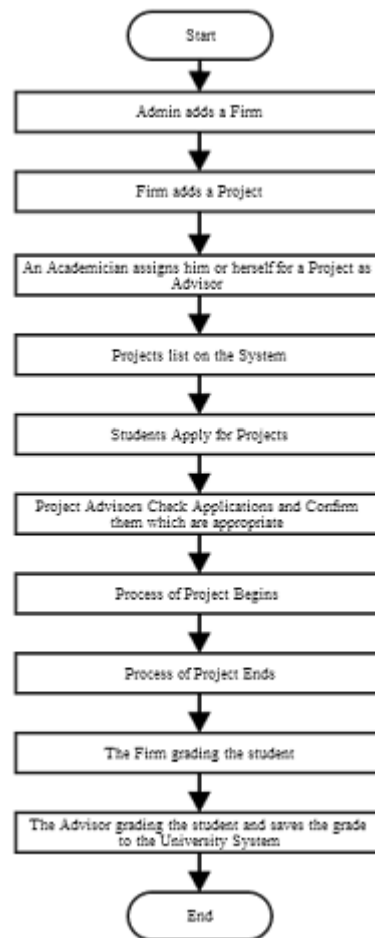
He is the user who represents the firm. He can add projects to the system. He can accept or reject student applications to the projects which are accepted by projects advisors.

#### *3.5. Student*

They can apply for a Project that has an advisor. The process of working is began when Project advisor and firm is accepted.

The types of users which mentioned above and their processes and the process of system and outputs obtained from system is given at Fig. 1.





4. Fig. 1. Database diagram.

The online system can not work until admin adds firms and academicians to the system. After the firms and academicians have been added to the system, firms who want to call for a project then the firm adds its project to the system. Projects can be seen to the students only if they are assigned to an advisor. An informative mail is sent to all academicians to inform them a new project has been added to the system by one of the firms. Academicians login to the system and they can see new projects which don't have any advisor then they can look at project details and they can assign themselves to those projects which are appropriate for them. Projects which have an advisor can be seen on the system to the students (see Appendix A). Sakarya University has the system SABİS for all online systems for education. The online system that was developed in this study uses SABİS user name and password like as our previous study (Adak & Yumusak, 2013) so students can login with their SABİS user name and password. This login system provides big simplicity for students and other processes. Students who passed from academician for a project they can study only if the firm (owner of the project) accepts the student's application. Advisor of a project can accept students more than the firm wants. But the firm will take required number of students from these students that academician advised. The working process in project for a student begins when academician and firm accept his or her application. When project is finished, the firm enters its comments and final grade about student to the system. The grade which firm gives is under the control of academician and the academician decides what ratio it will be. When academician enters the grade to the system project process is ended for this student.

#### 4. Conclusions

In this study, an online system is developed to help undergraduate and graduate students to carry out their thesis work in real-life projects. It is aimed to bring academics, students and industry together to work collaboratively. A case study of the system is conducted in Sakarya University Computer Engineering Department and it produced favorable results. In this case study, many undergraduate students have completed their senior thesis and internship duties in real-life projects in various industries. Positive results suggest that the online system developed here can easily be used in the entire Marmara region in the next stage.

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# University students' opinions on application of portfolio in higher education

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## Abstract

Click here and insert your abstract text. The purpose of this study is to determine opinions of university students towards the use of portfolio as a tool of teaching and evaluation in higher education. Also aimed to reveal if there is a difference of opinions in terms of gender (male or female), class (3th or 4th) and type of education (I. or II.) of the university students. This research is a descriptive research. The working group consists of 189 university students field of education in Kırklareli University Faculty of Arts and Sciences Department of Philosophy during fall semester in the 2013-2014 academic year. Portfolio application was carried out in the department of Philosophy at the 3rd grade "developmental psychology" lesson and 4th Grade "psychology of learning" lesson. Portfolio which was prepared over a period by students was evaluated and the obtained results have affected the students' course grade. For the purpose of the study a form was developed by researcher to determine the students' opinions towards the portfolio. The survey used as a measurement tool contains 18 items and in the form of triple likert-type like "I totally agree", "partly agree", "disagree completely". The data obtained by Survey were analyzed by SPSS 17. For this analysis procedures, percentage, mean and t-test were used. According to analyzing results value it can be said that university students' opinions regarding the application of portfolio are reasonably positive. No significant difference was found in university students' opinions about portfolio application in terms of their genders, classes and type of education.

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*Keywords:* portfolio application, students' opinion and higher education.

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## Introduction

### *Assessment in the education process*

Education must be interactive and development is being followed process. In this process it is possible to follow improving by assessment activities. Measurement and assessment is indispensable factor in instructional curriculum (Metin, 2012). Carless (2009) assert that evaluation should include theoretical and practical applications. Leithner (2011) emphasizes that assessment must be streamline and transparent process in education. Because students want to know about their success and mistake in the process of education. Thus they will study more consciously and the study became more effectively.

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### *Assessment tools*

Assessment give feedback about education process to teachers, students and parents. It is so important point fair treatment in assessment process as well. In this situation there is a quation “how can be possibile measure adequately whether or not learning has really occurred?”. Students’ learning level can measure not only by exam tests but also other alternative evaluation tools (consept map, performance tasks, project, self evaluation, sturactured grid, rubric, branched tree, drama, observation, control list, portfolio) extensively (Birgin, 2003; Corcoran, Dershimer & Tichenor, 2004; Leithner, 2011). Complex mixture of assessment models are taken into consideration in higher education. Exam tests, presentations, tasks, assignments which prepared by students can use together in education for comprehensively assessment (Gülbahar & Köse, 2006; Powell, 2013). In addition to students devolop themselves by organazing work. Thereby students can track their own growth and determine their own deficient( Baturaya & Daloğlu, 2010).

### *Portfolio as an assessment tool*

Systematic and purposefully collection of students’ working documents on their course is defined as portfolio (Arter & Spandel, 1992; Chang, 2008;) Portfolio can use as a tool of knowledge, ability, working and skill assessment in higher education (Barrett, 2001; Powell, 2013). According to Trevitt, Stocks & Quinlan (2012; 164-165) portfolio should include, five elements:

- representations of practice;
- engagement with key ideas in education, and/or the educational literature;
- reflective commentary – an autobiographical/autoethnographic aspect that takes an inquiring and critical stance;
- integration or linkage between the fi rst three elements; and
- sufficient breadth to include multiple aspects of teaching practice, e.g. course design, teaching, assessment (Trevitt, Stocks & Quinlan 2012; 164-165).

## Using Portfolio

Portfolio has a major role in teaching, learning and assessment activities. Portfolio acts as a mirror in the education process. Because it reflects students' progress. It can be said that portfolio is an evidence about summative evaluation (Baume & Yorke 2002; Brown, 2003). Elwood & Klenowski 2002 point out that summative evaluation not enough in education. Formative and summative evaluation methods must use together for effective assessment. Portfolio can use as a formative evaluation tool.

## Advantages of using portfolio

Portfolio enable to student became active in learning and assessment process (Güven & Aydoğdu, 2009). Because students carve works out frequently. Students research, write reports and present their work to create portfolio. Portfolio supports permanent learning (İzgi & Gücüm, 2012) and improves students' ability of creativity (Katırcı & Satıcı, 2010). Plus Chang, Liang and Chen's (2013) view portfolio is useful for teachers. Because teachers can determine interest and ability of their students and guide them well. In accordance with this view Klenowski, Askew and Carnell, (2006) specify portfolio is very considerable learning and assessment tool in the higher education. Additionally portfolio is valuable tool for higher education. Because they help students and teachers to know what is occurring in their teaching program and help them unroll on their own failures and inadequacy as well as successes (Winsor, 1994). The data which obtained by portfolio must be reliable and valid for acceptance as a assessment tool (Dubrovich, 2002). Kan (2007) refers that the data which obtained by portfolio must be evaluated not only by a teacher but also other teachers and experts. Teachers' and experts' results must be consistent. In this direction Oskay, Schallies, and Morgil (2008) defined that portfolio is reliable and valid tool in the assessment process.

As regards researchs conducted (Baume & Yorke 2002; Bedir, Polat & Sakacı, Brown, 2003; 2009; Güven & Aydoğdu, 2009; İzgi & Gücüm, 2012; Katırcı & Satıcı, 2010; Korkmaz & Kaptan, 2002; Shepard, 2000) it can be said that portfolio effective and usefull assessment tool.

In this research aimed to determined students' opinions about portfolio as a significant learning and assessment tool.

## Method

### Type of research

The purpose of this research is to determine the university students' opinions about application of portfolio. It is also aimed to reveal if there is a diversity of opinions in terms of gender (male or female) , class (3th or 4th) and type of education (I. or II.) of the university students. For this purpose it is the detection of current condition. Therefore, this research is a descriptive research.

### Working Group

The study group consisted of Kırklareli University Faculty of Arts and Sciences Department of Philosophy 3rd grade students (65 female, 24 male, total 89) and 4th grade students (74 female, 26 male, total 100) (totally 189) in the 2013-2014 academic year.

**Table 1: Distribution of the working group based on their class, gender and type of education**

Type of Education	Gender	Class		Total
		3	4	

I.	female	39	37	76
	male	7	12	19
<b>Total</b>		46	49	95
II.	female	26	37	63
	Male	17	14	31
<b>Total</b>		43	51	94

### *Application of Portfolio*

Portfolio application was carried out in the department of Philosophy at the 3rd grade "developmental psychology" lesson and 4th Grade "psychology of learning" lesson. According to Chang, Liang and Chen (2013; 327) "in portfolio creation, the evaluation of portfolios focuses on content completeness, appropriateness, richness, and organization and presentation". In this context homeworks were given by researcher (lecturer) to the 3rd grade students from the department of Philosophy who were learning "developmental psychology" and 4th grade students from department of Philosophy who were learning "psychology of learning" related to the topics of "developmental psychology" and "psychology of learning" lessons which were thought to develop the skills of students' "liberal education, ability to comment and research skills". Actual life examples and comments were demanded with issues which were given related to the topics for research a week's time was given to students to research and report the topic of research. The research homeworks were analyzed and feedbacked by researcher (lecturer). Feedbacks which were given to the students aimed to motivate and orientate the students more in-depth research and develop their comment ability. Feedbacks which were written on the students' homeworks can guide their later homeworks. After the feedbacks, homeworks are given back to students to hide and put them files. In this way an application was made during fall semester of the 2013-2014 academic year. This application is made over a period. Portfolio which was prepared over a period by students was evaluated and the obtained results have affected the student's course grade.

### *Data Collection Tool*

For the purpose of the study a form was developed by researcher to determine the students' opinions towards the portfolio which was prepared by them. In the preparation process of the form first the students' opinions -related to implementation and evaluation of a portfolio- were taken. In this context, open-ended questions were directed to the students. Questionnaire include those examples "what do you think about portfolio working?", "What you gain from the portfolio work?", "Do you think that the portfolio work is useful?", "Do you think that inclusion of portfolio work in the evaluation process is fair?" "Did you enjoy this work during the portfolio implementation process?" A form which consist 22 items was prepared according to the students' answers and review of the literature. Five education experts were consulted with this prepared form. According to the consults of the education experts four items were removed from survey. Thus, the survey used as a measurement tool contains 18 items and in the form of triple Likert-type like "I totally agree", "partly agree", "disagree completely".

### Data Analysis

The data obtained by Survey from department of Philosophy students whose were learning "developmental psychology" and "psychology of learning" lessons were analyzed by SPSS 17. For this analysis procedures, percentage, mean and t-test were used.

### Results and Comments

This part of the research includes findings obtained from analysis results and interpretations.

#### *University students' opinions regarding the application of portfolio*

Mean and standard deviation values were calculated according to the university students' opinions on the application of portfolio which was determined by a survey and results were presented in Table 2.

**Table 2: University students' opinions regarding the application of portfolio**

Questions	N	$\bar{X}$	SS.
1. Homeworks which I had done within the scope of the portfolio application contributed me to develop my liberal education	189	2,28	,67
2. Homeworks which I had done within the scope of the portfolio application contiributed me to discover my directions which I need to develop	189	2,12	,73
3. Homeworks which I had done within the scope of the portfolio application contiributed me to relize catchy learning	189	2,30	,71
4. Homeworks which I had done within the scope of the portfolio application contiributed me to use time efficiently	189	2,01	,75
5. Homeworks which I had done within the scope of the portfolio application contiributed me to reinforce the topics which I repeated	189	2,35	,65
6. Homeworks which I had done within the scope of the portfolio application contiributed me to study with diffrent sources	189	2,36	,69
7. Homeworks which I had done within the scope of the portfolio application contiributed me to come to class prepared.	189	2,40	,69
8.Homeworks which I had done within the scope of the portfolio application contiributed me to join the lesson actively	189	2,19	,74
9. Homeworks which I had done within the scope of the portfolio application contiributed me to develop my ability of comment.	189	2,09	,74
10. Homeworks which I had done within the scope of the portfolio application contiributed me to increase my sense of resposibility.	189	2,14	,72
11. Homeworks which I had done within the scope of the portfolio application contiributed me to show my studies better	189	2,18	,67
12.Homeworks which I had done within the scope of the portfolio application contiributed me to learn more things which I do not know	189	2,21	,69



13. Homeworks which I had done within the scope of the portfolio application contiributed me to increase my interest in course	189	2,08	,76
14. Portfolio application contiributed me to have ideas about my development	189	2,15	,77
15. Homeworks which I had done within the scope of the portfolio application contiributed me to have regular studying habits	189	1,92	,74
16. Portfolio application contiributed me to enjoy from doing homework	189	1,83	,77
17. Joining of portfolio application to evaluation process contiributed me to get a reward from my labors	189	2,25	,75
18. Using portfolio in the evaluation process contributed a fair evaluation	189	2,29	,74
<b>Total</b>	189	39,25	9,37

According to table 2 “portfolio applications; contiributed me to study with diffrent sources and contiributed me to come to class prepared” are the most like-minded items of university students. Arithmetic average value of items from the survey about the university students’ opinions regarding the application of portfolio, are changing between 2.40 and 1.83. Considering the values of items vary between 1 and 3 so it can be said values are high. University students’ arithmetic mean total scores which revealed from the survey about the university students’ opinions regarding the application of portfolio were 39.25. This value is high considering the highest values of scale is 54.00. According to this value it can be said that university students’ opinions regarding the application of portfolio are positive.

#### *University students’ opinions regarding the application of portfolio according to their gender*

Mean and standard deviation values were calculated and t-test was done to determine the diffrence whether it was changing by students’ gender according to the university students’ opinions on the application of portfolio. Results are shown on the Table 3.

**Table 3: University students’ opinions regarding the application of portfolio by their gender**

Survey	Gender	N	$\bar{X}$	SS	Sd	t
Portfolio opinion	Female	139	38.46	9.74	189	.01
	Male	50	41.46	7.90		

\*p<.01

According to table 3, male students’ opinions on the application of portfolio are more positive and according to t-test results, difference is not important.

#### *University students’ opinions regarding the application of portfolio according to their classes*

Mean and standard deviation values were calculated and t-test was done to determine the difference whether it was changing by students’ classes according to the university students’ opinions on the application of portfolio. Results are shown on the Table 4.

**Table 4: University students’ opinions regarding the application of portfolio by their classes**

Survey	Class	N	$\bar{X}$	SS	Sd	t
--------	-------	---	-----------	----	----	---

Portfolio	3	89	37.37	8.85	189	.21
opinion	4	100	40.93	9.54		

\*p<.01

According to table 4, the 4th grade students' opinions on the application of portfolio are more positive and according to t-test results, difference is not important.

#### *University students' opinions regarding the application of portfolio according to their type of education*

Mean and standard deviation values were calculated and t-test was done to determine the difference whether it was changing by students' type of education according to the university students' opinions on the application of portfolio. Results are shown on the Table 5.

**Table 5: University students' opinions regarding the application of portfolio by their type of education**

Survey	Type Of Education	N	$\bar{X}$	SS	Sd	t
Portfolio opinion	I.	94	41.16	8.57	189	.25
	II.	95	37.33	9.79		

\*p<.01

According to table 5, I. teaching students' opinions on the application of portfolio are more positive and according to t-test results, difference is not important.

#### **Discussion and Conclusion**

The purpose of this study is to investigate the university students' views on the portfolio that they prepared in "developmental psychology" and "psychology of learning" courses and define relationship of university students' views on the portfolio and their gender (male or female), their classes (3th or 4th) and their type of education (I. or II.). For this purpose, prepared survey was administered to university students. The data obtained were analyzed. According to analyzing results value it can be said that university students' opinions regarding the application of portfolio are reasonably positive. Especially university students emphasized that portfolio applications; contributed me to study with different sources and contributed me to come to class prepared. In the literature there are studies (Akdağ, Çinici & Akgün, 2004; Breault, 2004; Ersoy, 2006; Gülbahar & Köse, 2006; Metin, 2012; Mıhladı, 2007; Özyenginer, 2006; Powell, 2013) supporting this result. Also the results show that university students think that it is fair assessment using portfolio.

In order to determine whether university students' opinions on application of portfolio scores differed between genders of university students, an independent-sample t-test was conducted. The independent-sample t-test scores show that there is no significant differences between the university students' opinions on application of portfolio ( $t=-.01$ ;  $p<.01$ ) in terms of gender. According to the scores, male university students have more positive opinions ( $\bar{X}=41.46$ ) on application of portfolio than females ( $\bar{X}=38.46$ ). The results were obtained by Metin (2012) contrast with this study results. Because According to Metin (2012), female students have a little bit more positive opinions towards performance assessment than males.

In order to determine whether university students' opinions on application of portfolio scores differed between university students' classes (3th or 4th), an independent-sample t-test was conducted. The independent-sample t-test scores show that there is no significant differences between the university students' opinions on application of portfolio ( $t=-.21$ ;  $p<.01$ ) in terms of classes. According to the scores, 4th grade students have more positive opinions ( $\bar{X}=40.93$ ) on application of portfolio than 3th grade students ( $\bar{X}=37.37$ ).

In order to determine whether university students' opinions on application of portfolio scores differed between university students' type of education (I. or II.), an independent-sample t-test was conducted. The independent-sample t-test scores show that there is no significant differences between the university students' opinions on application of portfolio ( $t=-.25$ ;  $p<.01$ ) in terms of type of education. According to the scores, I. Teaching students have more positive opinions ( $\bar{X}=41.16$ ) on application of portfolio than II. Teaching students ( $\bar{X}=37.33$ ).

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# Use of robots and tangible programming for informal computer science introduction

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## Abstract

Children are exposed to technology, computer programs and games quite early but they only possess surface understanding about requirements for their realization. Children in 1st and 2nd grade (ages 7 – 9) are already familiar with basic computer science concepts, mainly through experience with more or less intelligent toys (robots). Taking mentioned into account introducing concepts of programming and behavior is required in early education. Results of the research based on specially made set of cards and robots used to encourage deep logical thinking and provide more immersive experience are presented in this paper.

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*Keywords:* Programming; Elementary school children; Behaviour; Robot

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## Introduction

Children are often exposed to technology, computer programs and games (Peach et.al, 2011) (Wartella & Jennings, 2000) quite early but they only possess surface knowledge about this matter, and they are not yet capable to fully understand the world they live in (Star, 2013). Computer games and smart toys like Furby, Aibo and similar robot toys are easily available to the large number of preschool and elementary school children (Cagiltay, Kara & Aydin, 2014). This exposure to technology in early ages has an effect on their school achievements and grades (Delen & Bulut, 2011). Therefore it is necessary to evaluate current teaching methods in elementary schools and to see whether they could be modified or expanded on order to make to most of current situation by adjusting them to the needs and capabilities of the modern day children. This paper presents the results of a research that was conducted with elementary school children. Research description and obtained results are presented and discussed.

## Research description

In Croatia, school children are introduced to computer science in 5<sup>th</sup> grade (ages 11 – 12). We believe that children in 1<sup>st</sup> and 2<sup>nd</sup> grade (ages 7 – 9) are already familiar with basic concepts regarding computer science, mainly through experience with more or less intelligent toys. This claim is supported by our last year's experiment (Zaharija, Mladenović & Boljat, 2013). In that experiment children were shown basic concepts like robot and simple movement commands, thus introducing them a concept of programming and basic programming procedures. It was noticed that all of the children were already familiar with basic concepts but they expected swift and very complex results from their written programs. Another thing that was noted, is that most of the children employed "trial and error" method for solving given problems, constantly changing their solution until they found the right one.

In order to avoid same situation happening again, we used specially made set of cards intended to encourage logical thinking and provide more immersive experience when dealing with robots. It should be noted that each group of children was only available for 30 minutes during organized workshops that took place as a part of annual School Day events. It is necessary to emphasize that the main goal of this experiment was not to present a formal approach to teaching but to motivate children and increase their interest to science.

Our workshop was organized in three main sections:

1. Physical level

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- a. Introducing the robot
  - b. Review through robot analysis
2. Robot behaviour
  - a. Robot behaviour description and introduction to programming cards
  - b. Implementing the behaviour in constructed robot
3. Demonstration
  - a. Demonstrating different types of behaviour
  - b. Demonstrating generalized robot behaviour with quadcopter robot.

### *Physical level*

First section of the workshop was dedicated to the introduction of the robot. Children were shown two Lego Mindstorms robots and some of the robots' characteristics were described. This particular type of robot was chosen because Lego Mindstorms robots are often used for educational purposes, in elementary school (Lin et.al., 2010), high school (Church et.al., 2010) and as well in college (Cuéllar & Pegalajar, 2014). Main parts of the robot were presented to them - motors, touch sensor, ultrasound sensor, color sensor and the "brain" (i.e. central processing unit of the Lego Mindstorms robot, also called "the brick"). Children were then presented with printed cards, each of them containing the picture of one particular part described earlier. They were then handed a single piece of paper with two different boxes. One was labeled "Robot FEELS with this parts" (Figure 1a. – 1) and the other one "Robot ACTS with these parts" (Figure 1a. – 2). Their task was to put each card in appropriate box. Most interesting part of this experiment was to see how they would label the brain of the robot. Figure 1.a shows an example of this experiment, with different cards categorized in two boxes.

After finishing this step, children were then given the task to design their own robot, using familiar parts. Again, we used cards with pictures of various parts on them. Children were given a paper representing the base of the robot with 9 (nine) available slots that could be filled with one robot part of their choosing. They had at their disposal multiple cards depicting the same part so they could make many different combinations of robots. Figure 1.b depicts one example of robot design made by one of the children.

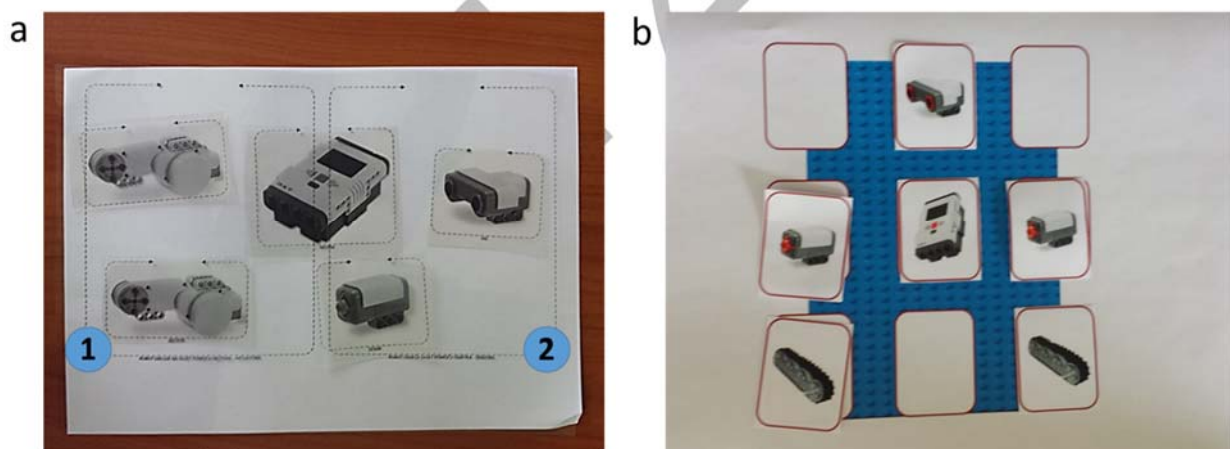


Fig. 4. Sorting robot parts (a) and designing own robot (b)

### *Robot behavior*

After finishing the first part of the workshop regarding physical level of robots we moved into second phase associated with robot behavior. Similar to the previous phase, this one also consisted of two different sections. First the concept of robot behavior was explained to the children. Main goal was to teach them that there is a big difference between robot construction and robot programming and that that it is not sufficient just to build the robot but they should also define its behavior. Few examples of robot behavior were described (follow someone, avoid obstacles, look for green color etc.). After that they were presented with another set of cards, depicting various concepts that could be used to define behavior. These concepts were mixture of sensor stimuli and available actions (near, far, move forward, move backwards etc.) as well as logical concepts (good/true and bad/false). Their task was to define a set of rules (i.e. behavior) for the robot they constructed in previous phase. This was done by logically combining available cards (for example – "near" + "move backwards" + "good"). Figure 2. shows an example of set of rules defined by one of the children for their robot.



Fig. 5. Defining robot behaviour using cards with different concepts

### *Demonstration*

Final phase of the workshop was to demonstrate their current progress using real physical robots. This was done by using two previously mentioned Lego Mindstorms robots. One robot was set to execute program containing rules corresponding to “good behavior” (i.e. robot would back off when he came too close to another object), while the other robot was running the “bad behavior” version of the program (going forward even when detecting obstacles in front of him and stopping only after he collided with something).

In order to help them generalize the idea behind robot programming and behavior we used another type of robot, completely different from those two previously presented. Robot in question was A.R. drone quadcopter. Children were shown that this robot is differently constructed (it has no wheels but has four motors and can fly) but it still has some similar characteristics (it possesses an ultrasound sensor but one that is pointing down i.e. measuring his distance to the ground when flying). Goal of this demonstration was to show the children that this type of robot is also able to exhibit good behavior – when the robot detects that it is too close to the ground or some other obstacle it automatically ascends in order to avoid crashing into ground or said obstacle. Figure 3. shows one of the demonstrations using Mindstorms robot.



Fig. 6. Demonstrating different types of robot behaviour to one group of children using Lego Mindstorms robots.

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## Research methodology

For the purposes of data collection during this experiment, we used appropriate qualitative research method (Creswell, 2013) with descriptive approach, mainly through participant observation and interviews (Seidman, 2012). Participant observation was public and with moderate researcher involvement while the interviews were unstructured as that was most suited for our target group.

Subjects for the experiment were chosen between 2<sup>nd</sup> and 3<sup>rd</sup> grade of elementary school children because it was determined that they did not have any formal education regarding computer science concepts since our last year's (2013.) encounter. Sampling was judgmental (Kumar, 2012), done by the teacher who selected the children that were generally more interested in selected topic. Subjects were divided into four different groups, each one consisting with 9 – 12 children. Figure 4. shows one group of the children during the experiment, along with the teachers observing and collecting data.



Fig. 7. One group of children during experimental phase

During the observation, we took photographs of completed solutions as well as photographs of the steps between in order to draw conclusions regarding problem solving procedures that the children used.

## Results

During all three phases of the experiment there were some interesting observations. Some of them are presented in following sections.

### *Physical level*

Majority of children accurately classified robot motors as parts used for acting and sensors as parts used for feeling. Problem was sorting the brain within one of those two categories. After brief discussion many children concluded that the brain is used both for feeling and acting so they positioned the card with the picture of brain in the middle thus positioning it in both categories. Final conclusion was that the brain was controlling the whole body (robot).

There were also some interesting observations during the robot designing phase. Most of the children used typical setup similar to the real robots they were shown before (two wheels, one brain and one of each type of sensors). However, some children used different designs with more parts of the same type. Each children with different design was asked to explain their design. There were some interesting designs as well as explanations for those designs. Some children used more than two wheels ("So our robot goes faster than the other ones") or two ultrasound ("So it can look in front and behind him") and touch sensors ("Because I want it to have two hands"). In two different occasions children designed the robot with two brains. When asked to clarify their design, one child explained that the first brain is used for consciousness and the other one for sub-consciousness

and that he learned those terms from TV. Second child's explanation for having two brains is that second one is used as a backup, in case the main one breaks.

### *Robot behavior*

During this phase most of the children were able to define basic robot behavior in a way that when robot detects something near him it should back away and move forward when he is detecting that objects are far away. It was interesting to see that along with the rules representing good behavior (marked with "good – ok" card) they also defined unwanted type of behavior (going forward when something is near is not good). It should be noted that not all of the children has successfully completed this task – some were able to do so only after getting the help from one of the teachers while few children were unable to finish the task regardless of the received help from the teachers.

### *Demonstration*

This part was mostly demonstration of different robots and their behavior. There was very little or no active involvement of children in this phase so there were no particular data collected, aside from few remarks regarding robots and demonstration.

## **Conclusion**

Children reacted positively to this type of workshop and were quite active and interested throughout all three phases of the experiment. It could be noted that great number of children already possess not only basic knowledge about computer science and robotics but they are also familiar with more complex concepts (taking their age in account). This coincides with our claim that children could be exposed to formal education regarding computer science earlier than it is currently the case (5<sup>th</sup> grade in elementary school). Given the results obtained from experimental study described in this paper, we believe that these kind of workshops are encouraging active involvement of children during classes. That would make them more appropriate for learning this type of matter then current teaching methods, especially when taking into consideration the age of the children.

After examining the results of second phase of experimental study (the one related to programming robot's behavior) it was noticed that not all of the children were successful in completing their task, even with the help of the teacher. Contrary to that, results from the first phase (regarding robot parts and construction) were significantly better. That also leads to the conclusion that children are already familiar with basic concepts but some of them lack the deeper understanding of those concepts. In order to expand that knowledge it would be advisable to incorporate workshops like this in the official school curriculum, at least in the form of optional (elective) class.

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# Use of theater for a sustainable improvement of written & oral skills:a sample activity realized with Molière's plays

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## Abstract

When training language teachers, it is necessary to plan a continuous development and improvement of written and oral skills, especially in the case of some teacher candidates who had not have the opportunity to study abroad, in countries where the foreign language that they are supposed to teach is spoken by native speakers. Therefore, for a sustainable improvement of the skills mentioned above, some practical activities have been planned and realized, in the scope of certain courses such as French Syntax and French Literature given in French teacher training Department of Istanbul University, during the academic year of 2013-2014. So, the main objective of this paper is to present an applied study, realized in French Literature course with students of the French Language Teacher Training Department of Hasan Ali Yucel Education Faculty in Istanbul University. The study consists of four steps which are reading, rewriting, adaptation and staging of plays of the famous French writer Molière. Within the context of this study, two plays adapted by the students and the achievements obtained will be presented.

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*Keywords:* French, french teacher training, written and oral skills, theater in foreign language teaching, Moliere.

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## Issues and objectives

In foreign languages learning, acquisition of writing skills is essential, but no language is really acquired without oral communication skills. In the specific case of the French language learning in Turkey, despite the use of the latest methods that are intended to enable acquisition of oral skills, the levels of learners in general, appear to be unchanged. Knowing very well that the success of education is only possible with French language teachers who are supposed to have all the necessary knowledge and skills, we consider starting with querying their training, while on the other hand, setting up their training to improve their competency levels will certainly contribute to the improvement and the success of teaching of French as a foreign language in primary and secondary schools. From this basic idea, it seems useful and necessary to plan and design practical studies in the approach of subject materials taught even for the theoretical courses such as linguistics, syntax and literature that have in common the language studies. As we think that the use of theater can allow improvement of a number of skills, in the frame of French Literature courses, we have planned and realized an activity with Molière's plays, containing several stages from reading until staging. Each step aims acquisition of a language skill. So, in this paper, a practical study that we have conducted with the main objective of improving, especially, written and oral communication skills of French Teacher candidates' through French Literature course will be presented.

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## Framework and Approach

In language skills development, as in many existing language teaching methods aiming at making students able to perform tasks using the linguistic tool involving actively students in the learning process plays an important role in the success. Because this kind of approach allows on one hand to transform knowledge into competence, and on the other hand, to gain better literary knowledge. Therefore in the frame of French Literature I course, in French teacher training Department of Istanbul University some practical activities have been planned and realized during the academic year of 2013-2014. Some of Molière's plays chosen by the students were studied, analyzed, rewritten and staged. To complete the study, fourteen weeks (i.e. duration of one semester) were estimated. Then the second year students of the license have made this work in four key stages: 1. Guided Reading of play texts; 2. Lexical, syntactic and semantic analysis; 3. Rewriting and adaptation; 4. Staging. Although certain students did not contribute to the work for various reasons, a vast majority has participated to this practical study. Four groups have studied on four plays of Molière which are "The Miser" (L'Avare) "The Imaginary Invalid" (Le Malade Imaginaire), "The School for Wives" (L'Ecole des Femmes), and "Dom Juan". Each group of students had to first read the play chosen and analyze it on the lexical, syntactic and semantic level to acquire and to appropriately use different registers of language in French. From a sociocultural point of view, this study was also supposed to allow for observation and understanding of the features of main characters of Molière's plays, which are considered to be universal, and making an adaptation easily. So, after the guided reading of play texts, students have thought on the possibilities of making an adaptation and wrote a short story in the form of a play to be staged. They have presented the scripts and discussed them in the classroom. The plays adapted have been written first in Turkish and then translated into French, considering the registers of language. Throughout this study the students working in the same group have met two or three times in a week. For staging, after the distribution of the roles to be played, they chose to play only once and make a video of it. Finally, the videos of four plays staged, have been presented and viewed in classroom at the end of the semester. In this paper, only two representative adaptations will be presented.



Fig. 1. L'Ecole des femmes School for wives).

## The Two plays adapted

**The Miser:** The character of the miser was suited into the role of a student girl at university. This is a hardworking ambitious, selfish, and a kind of nerd student. She is also ready to do everything for obtaining the highest scores in the exams and she does not either share with or lend her notes taken during courses to some of her classmates who are some kind of a band of dullards, incapable to understand what professors tell and try to teach and then to write them down As the period of exams is soon, the band of dullards who have no notes to study decide first to ask the nerd, to lend them her notes. But she refuses as she always did. Hence the band decides to steel nerd's notes to teach her a lesson. Then they make a plan right away, it is now necessary to trick her. Here is the plan: One day during a break, the nerd was told that the boy she likes is waiting for her in the yard to talk with her about something. Although the nerd is not ready to rush out leaving all her stuff in the classroom, she also does not want to miss the opportunity to meet the boy who, in her mind, is going to tell her

something that she has been waiting for. She makes the band of dullards to swear that they would not touch her bag with her notes inside and then goes to meet the boy in the yard. As soon as she goes, her mate Şeydanur from the band steals her notes that were hidden in her bag. As she already suspected something, the nerd looks right away for her notes immediately after returning to the classroom and starts crying like hell. Here is an extract of script written in French by students:

« (Derya avec un étonnement d'un moment, elle sort en laissant son sac. Şeyda a vu la sortie de Derya après elle rentra a la classe pour boire de l'eau. Elle vola ses notes de Derya, s'enfuit. En ce moment-là, toute la classe est dans le jardin. La récréation finit, ils rentrent dans la classe. Derya rentre en courant et s'assis à sa place, elle ouvre son sac et elle crie.

Derya: Mes notes! Ou vous –êtes parties? Ou êtes-vous? Voleurs, meurtriers! Appelez la police! Les caméras de sécurités! Envoyez-les au conseil de discipline, condamnez-les à perpétuité ! Emprisonnez-les ! C'est un crime!! (Tout le monde est étonné. La prof. arrive. Derya en va près de prof en courant et elle dit qu'elle irait voir le doyen et lui raconterait tout.)

Yeşim: Qu'est-ce qui ce passe ici tout le monde a sa place. Quel bruit?

Derya: Madame Ils ont volé mes notes! Renvoyez-les de l'Université, surtout ma sœur!

Şeydanur: Pardon, moi? Pendant la récréation j'étais avec mes amis dans le jardin. Je ne suis même pas venue en classe. D'ailleurs, je n'ai pas besoin de ses notes.»



Fig. 2. L'Avare (The Miser) 1.



Fig 3. L'Avare (The Miser) 2.

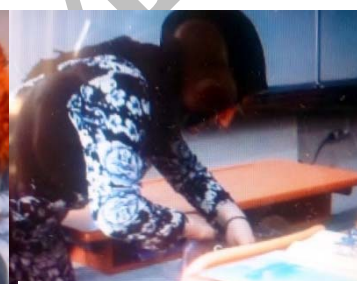


Fig.. L'Avare (The Miser) 3.

**The Imaginary Invalid:** The story of The Imaginary Invalid has been completely adapted by students into a television series inspired by the life of Ottoman Emperor Suleiman the Magnificent. However in the original version of the play, there is only one imaginary invalid, in the adapted version besides the imaginary invalid that the roles of Emperor reincarnate, whole main characters have an illness, in the form of an obsession as they are presented in the scenario. This is also what gives a humorous aspect to the story of the play. Hürrem Sultan who is the premier wife of the Emperor is obsessed by magic and spells. Mahidevran, the second wife of the Emperor is obsessed by the presence of Sultan Hürrem. Valide Sultan who is the mother of the Emperor is an obsessive-compulsive. The daughter of Sultan Hürrem is obsessed by men, and finally Hürrem's assistant Sümbül Aga has the defect of repeating everything twice. The play consists of three acts. As in the original version, the story is based on the intrigues caused by jealousy and ambition of the main characters. The play ends with a passionate crime scene organized by Mahidevran to kill Hürrem which is in fact only a dream of Mahidevran:

« Mahidevran se déguise en une femme voyante et va voir Hürrem. Elle lui demande de tendre la main pour lui dire ce qui va se passer. Juste au moment où Hürrem lui tend la main Mahidevran sort son poignard et le plante dans la poitrine de celle-ci. Le cri strident de Hürrem la réveille et elle réalise que tout cela était seulement un cauchemar ».



Fig. 5. Le Malade Imaginaire 1.

Fig.6. Le Malade Imaginaire 2.

**Les personnages dans notre pièce.**

Dans notre pièce, tous les personnages ont une maladie psychologique;

- \*Sultan Süleyman : Il est le malade imaginaire
- \*Hürrem : Obsédée par l'augure
- \*Mahidevran : Obsédée par Hürrem
- \*Vahide Sultan : Elle a une obsession du nettoyage
- \*Mihrimah Sultan : Obsédée par des hommes
- \*Sümbül Ağa : Il a une obsession de répéter
- \*Nigar Kalfa : Elle oublie tout

**Les personnages**



MIHRIMAH SULTAN



SÜMBÜL AĞA



NIGAR KALFA

**Conclusion**

This study, first of all, provided the opportunity to enrich French vocabulary of the students, who have involved actively in whole steps of the practical study and also made them able to distinguish the literary language that is most often used in the written language, from the spoken French casually used. By the same token, the students have learned and acquired the specific vocabulary and specific language of Molière, plus his époque's. In the step of staging of adapted plays, this practical work pushed the students to learn to make both individual and collective researches in a team one hand; and on the other hand, by sharing the roles and by rehearsals, to express themselves more comfortably through the roles they have played. Particularly in the step of rewriting- adaptation, exercises allowing to distinguish different registers of language contributed to the acquisition and improvement of pragmatic competence as well. In other words, students have learned to adapt their speech to different socio-cultural situations. One example would be the use of French addressee pronouns like "tu" and "vous" depending on the social context, as well as other addressee forms using the professional titles. For example, in the writing of the The Miser's scenario, in some repliques, students had first used "mon professeur" to refer "hocam" in Turkish. While this form of address is completely cultural in French and the teacher is in general called by "Madame" or "Monsieur" (except the primary school context where they are called as 'maitre, maitresse). In the same way, they learned also that in French forms of greetings, acknowledgements etc. vary depending on the social context, on the degree of intimacy, etc. Briefly, with this practical study realized through the Molière's plays, while learning French literature, students have found the opportunity to improve their written, oral and pragmatic skills in French.

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# Using augmented reality as a medium for teaching history and tourism

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## Abstract

This article discusses the use of new media in education and shows new opportunities but also risks of the use of these technologies, especially in the tourism and history. New media through a new user interface facilitates controlling of mobile applications thanks to motion and geolocation sensors and allows the data visualization in dependence on the surroundings of the user. The article will focus on the technology of augmented reality (AR) and describe how this technology can be used in education. Augmented reality is one of the newest technologies, which offers new ways how to educate effectively and attractively.

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*Keywords:* augmented reality, education, history, tourism, mobile devices, mobile applications

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## 1. Introduction to new media and augmented reality

New media play an important role in education today thanks to the mass spread of new information and communication technologies (ICT). New media enrich teaching practices with interactivity, promote communication and feedback. Typical characteristics of new media are multimodality, virtuality, communication, globality, internationalization, distribution, diversification, mobility and collaboration. This article discusses the use of new media in education and shows new opportunities but also risks of the use of these technologies, especially in the tourism and history. New media through a new user interface facilitates controlling of mobile applications thanks to motion and geolocation sensors and allows the data visualization in dependence on the surroundings of the user. New media, thanks to that, is changing the face of education and creating new opportunities for improvement the quality of teaching and learning and trying to reflect the user's information needs and at various types of restrictions. The article will focus on the technology of augmented reality (AR) and describe how this technology can be used in education.

### 1.1. What is augmented reality

Augmented reality (AR) is one of the newest technologies, which offers new ways how to educate effectively and attractively. Considering the growing popularity of mobile devices and new user interface worldwide, the use of AR on mobile devices becomes potentially very important form of education. Augmented reality is a way of displaying digital content in an image of the real world and its possible interaction with the environment and the user. As opposed to virtual reality, augmented reality does not buckle blinkers on user's eyes to isolate him – it retains full perception of the world, only enhanced with a distinguishable digital layer with information through advanced ICT. Augmented reality is not just a lab or room issue but a concept usable without restrictions both indoors and outdoors.

### 1.2. Required technologic base for augmented reality

The implementation of augmented reality provided by computer applications requires a specific hardware, currently widespread in the young generation (see chapter 2) and financially perfectly available – the cheapest device completely sufficient for augmented reality, (see chapter 1.2.2.) is on the current market in May 2014 offered at a price of EUR 60 – model Yarvik Novo Compact (Heureka, 2014) and software (see chapters 1.2.1. and 1.2.2.). As the user interface for augmented reality a few types of devices can be used. For example touch

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screen of a mobile device or head-mounted displays of Google Glass type (or Glass Up) displaying pictures right before user's eyes without the need to look away from his point of view (such way of displaying is called Head Up Display). These glasses are not available on the public market yet (April 2014), the sale is expected by the end of the year. The price should vary around USD 1.500 (USD 299 for Glass Up), therefore this article considers the mobile devices as the best solution to be used.

#### *1.2.1. Multipurpose mobile devices for augmented reality*

By multi-purpose mobile devices we mean mobile computers, which are nowadays frequently represented by notebooks/ultrabooks, smartphones or tablets. In education of history and tourism, the use of augmented reality is destined for outdoor use with a high degree of mobility of the user. For this purpose it is necessary that the application enabling displaying the augmented reality runs on computers with high degree of mobility. This means very low weight, small dimensions and due to the low power consumption and high capacity batteries also several hours of operation without the need of recharging. Internet data transfer is provided by wireless connection, preferably available everywhere via mobile data networks. Smartphone and tablet best suit these requirements, for they have very small dimensions and easier handling possibility (compared to notebooks) thanks to extremely low weight (usually no more than 0.5 kg, which is significantly lower than most notebooks and even ultrabooks, where the weight is at least double) and sufficient battery life.

The essence of augmented reality is to display digital content in real images. Everything happens within a touch screen of mobile device that captures the true picture by the front webcam. The location of digital content must match the actual content as closely as possible – eg, the original historical entrance must be displayed on the screen exactly on the point where the entry to the current building is. Therefore the ability to accurately display augmented reality requires advanced technologies, which the mobile device must provide.

These technologies include:

- Front webcam to capture the actual image in front of the user's eyes.
- GPS (Global Positioning System) satellites enabling very accurate location (accuracy within 5 to 20 meters) of the device anywhere on the Earth (called geolocation) and technologies such as gyroscope and accelerometer that can additionally determine the directional orientation and speed of movement of the mobile device, respectively the user, to display an adequate augmented reality in his vicinity. In the event that GPS is not available in the device, this technology can be substituted by the geolocation service provided by companies such as Google, Microsoft, Apple or Mozilla, which use WiFi technology, but this is only possible in areas adequately covered by these networks, ie. in urban areas. Geolocation using WiFi GPS provided in urban areas of the Czech Republic has slightly lower accuracy, which reaches the level of 21–25 meters in large cities and accuracy of 27–33 meters in smaller towns (Source: Authors).
- In the event that the application uses data from the Internet, the availability of mobile data technologies (Generation 2G – GPRS / EDGE, 3G – UMTS / HSPA / LTE or 4G – LTE advanced) is essential to provide the actual underlying data for augmented reality in the shortest possible time to ensure fast response time (preferable at least 3G technology providing transmissions with the speed of several Mb/s or more).

#### *1.2.2. Mobile applications with augmented reality*

Mobile application is a type of software designed for mobile operating systems such as Android or Windows Phone. The final form of augmented reality, ie. what content is really displayed to the user, is determined just by the mobile application. The applications are also responsible for the functionality and ease of use, usually operated by the user via touch screen. Mobile application providing augmented reality can take various forms, which limit users to use it on certain operating systems only (so-called native applications) or on the contrary, allows you the freedom to use the application on any operating system (so-called multi-platform applications). A huge disadvantage of native applications today is the availability of popular applications only for the most popular operating systems – mostly Android (44.8 % worldwide penetration on all mobile devices among population in April 2014) and iOS (32.8 % penetration) (Statcounter, 2014). For all owners of devices with different operating systems (Windows Phone: 1.92 %, Symbian: 2.7 %, BlackBerry: 1.8 %, etc.) these mobile applications are often unavailable, despite the fact that among the tablets solely three dominant mobile operating systems are expected to occupy a significant market share by 2017 – Android (58.5 %) iOS (30.6 %) and Windows (10.2 %) (Jones, 2013).

The solution to this problem is provided by a multi-platform application. Typical examples are web applications supported on all modern smartphones and tablets, so that owners of devices with minority operating systems have the ability to fully use mobile applications for augmented reality just like everyone else. However most web applications does not run without a mobile Internet connection and new web technologies HTML

version 5, which web browser must support. In case the newest version isn't available it can be a problem as technologies required by the augmented reality (particularly geolocation) are available in newer versions of browsers only (Caniuse, 2014). If a mobile web application with augmented reality run on the device that does not have GPS and uses a WiFi geolocation service instead, the choice of Web browser or Geolocation Service respectively (by Google, Microsoft, Apple or Mozilla) may influence the accuracy considerably (Source: Authors).

## **2. Using augmented reality as a medium for teaching history and tourism**

Mobile devices possess the potential to significantly influence teaching and learning. Students use smartphones and tablets to communicate with their peers throughout the lecture and it is reason, why similar tools are used for learning (Dunleavy & Dede, 2009).

This potential is supported by the fact that 31 % of all mobile Internet users formed young people under 29 years old in the Czech Republic at the end of 2012 (ČTK, 2014), among youth 16 to 24 years, the number is even higher in 2014 (Czso, 2014) – 50.5 % of them used mobile Internet through cell phone (521 000 of youths) and 5.0 % through tablet (51 000 of youths).

Technology nowadays offer teachers many possibilities how to attract students and innovatively offer them learning subject. Development of technologies is still moving forward, so teachers can work with new technological tools. With the capabilities of today's computers, tablets and smartphones the learning material can not only be viewed, but with the help of augmented reality and related equipment students can directly involve themselves into interesting experiments. Augmented reality has great potential as a means of highlighting interesting features or bringing history to life.

Most already available AR applications are developed for education especially for natural sciences (chemistry, biology, mathematics – see LearnAr, 2014), but AR applications for history and related tourism remain outside the main concern of developers. Therefore, this article would like to draw attention to the possibilities that AR offers in the field of education and history. The article compares the traditional tourist information and possible usage of mobile devices with AR technology in this industry.

Knowing the history of the area in which we live, should surely belong to the knowledge base of every adult (and of the entire nation). Only those who are familiar with the past can understand the presence and create a successful future and so the mistakes of previous generations did not have to be repeated. Good knowledge of history gives man a better view and gives him an opportunity to look for analogies and comparisons in the past. Therefore, the authors would like to show that history can again become a play, fun and search for new information and revert the interest to students in this area again. Students can get a new perspective on the explanation of history and try to interpret it.

### *2.1. Using augmented reality as a medium for teaching history and tourism*

The traditional teaching of history is now enriched by a variety of historical films, photos and interviews with contemporary witnesses. Students also get to know historic sites during their school trips where the teacher presents them about important historical events. But possibilities of teaching outside are limited by the teacher's attractive interpretation and variety of newsletters, brochures, signs, banners, web links or audio guides.

Mobile device with AR technology, though, offers a much more interesting information at one place in a real space-time. Each student owning a mobile device (tablet, smartphone) can work with multimedia content enriched for the element of augmented reality. The mobile application with this technology is being installed to tablet or smartphone. It detects the location and orientation of a smartphone or tablet in space and based on these data a locally multimedia content is placed into the image – various text information (names of buildings, historical context, hyperlinks to websites, opening hours, admission, institutions), audio (old recordings, audio guides, comments), video, photographs (archive pictures) or 3D animation in the real space-time. (see Fig. 1)



Fig. 1. (a) real space-time; (b) real space-time with augmented reality.

An interesting project based on the AR was created by European research project iTacitus – “*Intelligent Tourism and Cultural Information through Ubiquitous Services. Heritage sites have huge amounts of information. However it can be difficult to present this information in a compelling way. iTacitus explored ways of using augmented reality to provide compelling experiences at cultural heritage sites. For example*

- *Superimposed Environments: 3D objects are placed into the scene on the spot in order to overlay the real scene. Like missing paintings, statues or architecture models.*
- *Annotated Landscape: Abstract context sensitive information overlays showing images, texts and videos about a certain spot.*
- *Spatial Acoustic Overlays: Transporting a place's original ambiance by virtually placing spatial audio clips in the surroundings.*” (iTacitus, 2014)

In the Czech Republic there does not exist an educational project that would offer a historical events using AR technology. There are several mobile applications which deal with history, but have not been using AR element yet. The pilot project mobile applications “Memory of Nation” starts in the Czech Republic nowadays (Paměť národa, 2014), which offers over 200 places, commented by witnesses with precise description of the location and the event. Users of the application can the given location as well as elsewhere listen to comments and read what important had happened there.

On the example of historical event – paratrooper operation Silver A (The aim of this operation was the airdrop of specially trained paratroopers in the territory of the Protectorate of Bohemia to establish a radio connection with London. To do this, they were equipped with radio code-named Libuše. In connection with the activities of this group the Germans burned down the village Ležáky in June 24<sup>th</sup> 1942), which took place in Pardubice in 1942, during the Protectorate of Bohemia era, the authors want to compare and demonstrate the benefits of AR technology in the teaching of history and tourism and with using of this technology to motivate students for further study of history.

About this national event exists many professional historical literatures, web pages and also a nature trail was called “Pardubice in the footsteps of Silver A” was established in 2012 to the 70th anniversary of the second martial law declared by the German occupiers in the Protectorate of Bohemia and Moravia. The path presents a number of places associated with activities of Silver A in Pardubice and the fate of the main participants. Visitor, who wants to learn something about this event, is given A4 size brochure in the tourist information center, where he learns the relevant information about the group Silver A. Further information are available at web pages (Magistrát města Pardubic, 2014) Those who would like to learn more about tragic lives of local people have the possibility to rent an audio guide in the regional information centre Pardubice Region Tourism. City of Pardubice made ten information tables embedded in the pavement, which indicate the direction the tourist should has to go.

AR apart from these traditional tourist information channels can offer interested persons mobile and web applications that unlike tourist information center will be accessible online, so interested persons can study whenever they want. The user will not have to use the tourist information center, search for information on the Internet, or orient on printed maps and brochures. He gets the time flexibility and mobility, and learns only the information that he is interested. In the mobile device he can view the entire route on the map, where points of interest in real space-time with important historical events will be shown. In the mobile device photographs of important historic figures will be shown, as well as audio recordings of their lives and actions, comments,

archival photographs of places and buildings that already do not exist or were changed or rearranged, texts about the event, links to web pages or non-fiction books. Comments of witnesses and video scenes or short documents appear there as well. At the marked locations (e.g. placed on the building) there will be placed markers using QR codes, which offer a variety of 3D visualization (historic buildings, no longer existing places that could be compared with reality, etc.).

Tourism and education get a new dimension in learning about new places and discovering local history and offer much more information together in a simple form stored in a mobile device. The benefit of this application is also involving students in the creation of AR and the possibility to further motivate them in the studying of history. They would be able to create and insert multimedia content on their own and so expand their knowledge of history, but also influence and educate their surroundings (see Wikitude mobile application, where possibilities is build your own AR application – [www.wikitude.com](http://www.wikitude.com)) The teacher would get further incentive element for the history teaching using teamwork which students carried out at searching and verification of a different information during their classes. There would be not only the collaboration with other students, but also the motivation to create the best possible work. Anybody can watch on his/her mobile device or the Internet their creation then.

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### Conclusion

The main aim of this article was to describe the possibility of using augmented reality as a medium for teaching history and tourism. Authors of this article compared paper tourist guide and mobile applications and outlined new opportunities and future trends in the teaching of history and tourism. History is something students should do, not something they should consume and using augmented reality as a medium can get a new and attractive look to the teaching of history. Augmented reality has great potential as a means of highlighting interesting features and bringing history to life via multimedia content in mobile device.

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# Using blogs to create a constructivist learning environment

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## Abstract

Educational environments that support constructivism are particularly beneficial to student learning. They increase motivation and information retention by actively engaging learners in the development of their understanding. E-learning technologies, specifically social networking websites, are effective tools for creating constructivist educational environments. Blogs are especially valuable platforms for constructivist learning and can be tailored to support a wide range of educational concepts and activities. This paper will present the findings of an analysis on the impact of blogs on constructivist education. It will then discuss the implications of these results in terms of teaching, followed by pedagogical recommendations.

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*Keywords:* Constructivism; Blogs; Social networking; Educational technology; E-learning

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## 1. Introduction

Educational environments that support the tenets of constructivism are particularly beneficial to student learning. They increase engagement and information retention by actively engaging learners in the development and expansion of their understanding (Dougiamas, 1998; Sunal, n.d.). E-learning technologies, specifically social networking websites, are effective tools for creating constructivist educational environments. Blogs are especially valuable platforms for constructivist learning and can be tailored to support a wide range of educational concepts and activities. Blogs, otherwise known as weblogs, are a type of web 2.0 platform that supports the development of an electronic journal (Cheng & Chau, 2011). Blogs enable individuals to easily showcase their thoughts and viewpoints for public or private online audiences and keep a record of their ideas (Deng & Yuen, 2011). This paper will present the preliminary findings of an analysis on the impact of blogs on constructivist education, including the affordances and limitations of blogs for constructivist learning strategies. It will then discuss pedagogical recommendations for creating effective constructivist educational environments with blogs.

## 2. Background

This section will provide the context for the analysis on blogs and constructivist education. It will begin by describing the learning theory of constructivism, particularly cognitive and social perspectives. It will also discuss the current literature regarding blogs as a learning tool.

### 2.1 Constructivist learning theories

The fundamental basis of constructivism is that students must actively construct their own understanding, in order for learning to be meaningful and effective (Comas-Quinn, Mardomingo, & Valentine, 2009). They accomplish this by building on their prior conceptions and directly engaging in their learning. This paper will focus on the implications of blogs in terms of two types of constructivist thinking, including cognitive and social constructivism. Piaget developed the concept of cognitive constructivism, otherwise called trivial constructivism, which focuses on learners' intellectual construction of their understanding (Dougiamas, 1998). This theory asserts that cognitive development occurs when individuals construct knowledge by directly engaging in their learning, rather than by passively receiving information (Matthews, 1994). Conversely, social constructivism, which was established by Vygotsky, emphasizes that social factors strongly contribute to knowledge development (Matthews, 1994). It stresses the significance of student-student and teacher-student collaboration, and asserts that knowledge is distributed among individuals. This perspective also reflects the tenets of situated

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education, by demonstrating the importance of community and cultural influences on learning (Comas-Quinn, Mardomingo, & Valentine, 2009).

## *2.2 Blogs in education*

Blogs are increasingly employed in educational contexts for supporting computer-mediated communication because of their capacity for collaboration (Halic, Lee, Paulus, & Spence, 2010). Widely used blogging websites include Blogger, Xanga and Myspace. Although educators are increasingly using blogs to create or augment learning environments, research is divergent in terms of their benefits for knowledge construction; for instance, studies conducted by Du and Wagner (2006) and Lin, Lieu, Kakusho, Yueh, Murakami, and Minoh (2006) demonstrated that blogs have a positive impact on student learning. Conversely, Comas-Quinn, Mardomingo, and Valentine (2009), and Deng and Yuen (2011) concluded that blogs do not contribute to constructivist learning environments. In addition to the lack of consensus of blog effectiveness, there is an absence of detailed pedagogical models that link the instructive advantages of weblogs with constructivist teaching practices.

## **3. Preliminary findings**

Given that there is a need to establish the impacts of blogs in educational contexts, this paper will present the preliminary results of an analysis on how blogs are capable of integrating constructivist principals. This section discusses the affordances of weblogs in terms of constructivist activities, followed by negative aspects of blogging for knowledge construction.

### *3.1 Positive impacts*

Blogs have numerous features that enable them to support constructivist educational activities, particularly in terms of cognitive engagement and social interaction. This section analyzes blogs in terms of how they incorporate constructivist principals.

Constructivist models for learning emphasize the need for intellectual engagement in learning materials (Dugiamas, 1998; Garrison, Anderson, & Archer, 2000). Blogs have the potential to support cognitive engagement in a variety of ways, such as through motivation. The Driver-Oldham model (1986) presents motivation as an essential element of constructivist learning (Sunal, n.d.). Studies show that blogs positively affect student motivation to learn course content, primarily because they provide students with control over their learning (Comas-Quinn, Mardomingo, & Valentine, 2009). As an electronic journal, weblogs are relevant to student lives and enable them to make decisions regarding content, communication and privacy. Furthermore, they motivate students to produce high-quality content because information is available for users worldwide to view (Halic, Lee, Paulus, & Spence, 2010; Wang & Hsua, 2008).

In addition to increasing motivation, blogs create student-centred environments that contextualize learning. They enable students to construct their own knowledge by independently creating a log of their learning (Kim, 2008). Students post inquiries for their peers, read different points of view, justify their arguments and seek external resources to further their understanding (Kim, 2008; Meinecke, Smith, & Lehmann-Willenbrock, 2013). Blogs also archive posts and viewer contributions, which enables students to keep a record of their learning (Meinecke, Smith, & Lehmann-Willenbrock, 2013). In this way, students can access their information in order to build on prior understanding and make new connections between ideas. Furthermore, since information on blogs is electronic, students are not temporally limited regarding when they can create and read posts (Comas-Quinn, Mardomingo, & Valentine, 2009). Studies show that this feature promotes constructivist learning, as it centres education on students by providing them with control over their learning (Halic, Lee, Paulus, & Spence, 2010).

Blogs also incorporate constructivism by supporting collaboration among peers and their instructor. Participating in a learning community enables students to co-construct knowledge, by sharing information, presenting points of view and resolving conflicting ideas (Wang & Hsua, 2008; Xin & Feenberg, 2007). As a result, learners progressively restructure and develop their understanding. Blogs also enable students to ask questions, exchange ideas and provide feedback (Meinecke, Smith, & Lehmann-Willenbrock, 2013; Robertson, 2011). This is because students can respond to their peers' blogs and comments (Deng & Yuen, 2011; Du & Wagner, 2006). Given that blogs can be accessible for users globally, they increase opportunities for interaction with individuals with differing perspectives and ideas (Comas-Quinn, Mardomingo, & Valentine, 2009). Studies show that, because of this affordance, blogs have a positive impact on peer-to-peer learning (Cheng & Chau, 2011; Deng & Yuen, 2011). They provide opportunities for intellectual conflict, which leads to cognitive restructuring and new understanding (Meinecke, Smith, & Lehmann-Willenbrock, 2013; Wang & Hsua, 2008). Additionally, blogs provide a medium for focused collaboration, in which students have meaningful interaction with content and their peers, with the purpose of co-constructing knowledge (Halic, Lee, Paulus, & Spence, 2010). Students can, therefore, receive coaching and support from their peers, as instructors typically have

limited time for one-on-one teacher-student interaction (Robertson, 2011).

### *3.2 Negative influences*

While blogging activities are able to support constructivism in a variety of ways, certain aspects negatively affect constructivist learning. This section presents a critical analysis of ways that blogs are not conducive to incorporating constructivism, specifically in terms of intellectual engagement and collaboration.

Certain characteristics of blogs do not promote constructivist learning, by minimizing the ability for learners to create cognitive links among concepts. This is particularly the case for two essential aspects of cognitive constructivism, including engagement and reflection (Biggs, 1996; Sunal, n.d.). Robertson (2011) argues that participating in blogging activities is disadvantageous for intellectual engagement, due to the significant quantity of blogs that students and instructors need to read, comprehend and comment on. For meaningful engagement and motivation to occur, workload needs to suit student abilities. This includes content difficulty and the time required to participate in learning activities. In the case of blogs, students may become overwhelmed by the amount of topics and concepts, causing them to read and contribute rapidly. Consequently, students provide short answers that are disadvantageous for meaningful engagement with the subject matter; for instance, Biggs (1996) demonstrated that short responses are not sufficient to facilitate high-level thinking. This is because students generally consider the topic under consideration more thoroughly when producing longer texts.

As well as impacting learners' abilities to develop cognitive connections through engagement, research shows that student reflections on blogs are not adequate to produce meaningful conceptual developments (Deng & Yuen, 2011; Kerwalla, Minocha, Kirkup, & Conole, 2009). While blogs are electronic diaries that can support cognitive changes through knowledge reconsideration and restructuring, this affordance is entirely dependent on the quality of student reflections (Biggs, 1996). Kerwalla, Minocha, Kirkup, and Conole (2009) demonstrated that students contribute the minimal amount to reflections that instructors require. Furthermore, Hall and Davison (2007) ascertained that only 20% of blog postings show meaningful reflection by students.

In addition to cognitive aspects, blogs can limit peer interaction and, therefore, social constructivism in a variety of ways. This is primarily because conversation quality and frequency significantly depends on student contributions (Du & Wagner, 2006); however, research shows that learners contribute minimally to their peers' blogs, due to time constraints (Deng & Yuen, 2011; Halic, Lee, Paulus, & Spence, 2010). When a high volume of contributions does occur, such as when instructors evaluate participation quantity, discussions often lack quality and meaning (Kerwalla, Minocha, Kirkup, & Conole, 2009). Academics attribute this to blog ownership (Deng & Yuen, 2011). Given that blogs are created and managed at the individual level, participants do not have control over content or discussion direction, which decreases their motivation for participation. As a result, conversations are frequently brief interactions between two individuals and are often social in nature rather than content-driven (Deng & Yuen, 2011; Halic, Lee, Paulus, & Spence, 2010).

## **4. Pedagogical recommendations**

Instructors can incorporate blogs into learning management systems for discussions or use them for student-led activities in both distance education and face-to-face classrooms (Halic, Lee, Paulus, & Spence, 2010). Blogs have numerous affordances that can enable them to support effective constructivist learning environments, which promote cognitive development; however, for this to occur, the learning environment must be supportive of student engagement and knowledge development. Teachers need to provide an area of research for student blogs to concentrate on. The assignment topic should have an appropriate scope that provides students with a focus, but gives them freedom of choice and sufficient range to develop their knowledge (Meinecke, Smith, & Lehmann-Willenbrock, 2013). Topics should also directly reflect curriculum requirements, in order for blogs to meaningfully contribute to learning (Meinecke, Smith, & Lehmann-Willenbrock, 2013).

Additionally, educators need to create an effective learning community, with ongoing collaboration. Sustained interaction is essential for both cognitive and social constructivism. Halic, Lee, Paulus, and Spence (2010) demonstrated that learning through blogs is maximized when students feel a sense of community. It increases student participation in blogging activities, by providing them with engagement and making them at ease sharing their ideas. Posting on each other's blogs will, consequently, provide peers with conceptual feedback, which increases motivation and provides academic support (Kim, 2008). To develop a strong online blogging community, instructors should specify detailed requirements concerning participation and the development of a classroom blogging community, which is considerate of workload (Halic, Lee, Paulus, & Spence, 2010; Kerwalla, Minocha, Kirkup, & Conole, 2009). They should also explicitly state its advantages for learning. In addition to creating a sense of community, teachers should provide a sustained online teaching presence, by facilitating discussions and providing assistance and direction (Kerwalla, Minocha, Kirkup, & Conole, 2009). To promote ongoing discussion, instructors should teach students how to employ the RSS (Really Simple Syndication) system, which enables users to receive automatic notifications regarding blog contributions

(Kim, 2008; Wang & Hsua, 2008). This feature increases time efficacy for blog activities, by minimizing the time required to search for specific blogs and posts. Teacher support and social interaction will support the continued development of student understanding.

## 5. Conclusion

This paper examined blogs in education, specifically in terms of how they incorporate principals of cognitive and social constructivism. It discussed the implications of blog features for supporting constructivist educational activities in both face-to-face and distance education courses. Based on the findings, this paper presented pedagogical strategies for maximizing the effectiveness of blogs, specifically through cognitive development and social interaction. With the integration of these methods and the consideration of blog affordances and limitations, educators can effectively use blogs to create a constructivist learning environment that supports knowledge development through engagement, reflection and collaboration.

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# Using comics with novice EFL readers to develop reading literacy

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## Abstract

The study concentrated on the possible effects of using authentic comics with EFL learners. It examined the strategies applied by novice readers in reading comics with the special focus on lexical guessing using context. The data for this illustrative qualitative case study were collected from observations, discussions, verbal report and in some cases students' writings. The results indicated possible positive effects in vocabulary development and motivation to reading and overcoming linguistic barriers in reading authentic material using the context and prior knowledge.

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*Keywords:* reading; comics; reading strategy, case study

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## 1. Introduction

Digital era has indisputably changed our lives, no matter whether we are digital natives or digital immigrants. Even the resistant people have to change their habits, practices, routines to function in the contemporary world. Even though one may be reluctant to use computers, digitalization is everywhere (TV, phones, wireless devices, self-cash machines).

The way we receive and perceive different types of information has changed significantly, similarly as information search (some of us are in a real trouble without having an access to internet and Google). We have problems to read "classical maps", we do not remember phone numbers; young people have problems to read train timetables at the stations as they prefer to use internet search on their mobiles or tablets that they take everywhere.

No matter what strategies and techniques we use it is undoubted that reading comprehension is still the skill that is inevitable and crucial for and in our lives.

## 2. Reading comprehension

The various studies indicate that readers using internet (even in case of e.g. reading newspapers online) read differently (use different techniques and strategies) compared to the readers of printed material. They tend to search for information rather than scan the text to find the answer, they tend to pass, wander from one text to another what might be the reason of their inability to concentrate on the texts that are longer and they tend to look for further (deeper) information about what they are interested in immediately as the hypertext enables the "plunge" to the problem very easily.

The fact young generation does not read has been already discussed in numerous studies but we have to underline how important it is in their life and it hardly can be substituted or compensated. Reading helps to develop vocabulary that is crucial for communication, it has also positive effects on grammar mastery, especially its understanding in context, as a result it positively influences the quality of writing and speaking as well. Reading is a tool for learning, survival but we also have to speak about the aesthetic value of literature (often transferred to audiobooks nowadays).

Reading picture books in the childhood belongs to one of the first encounters with creating stories supported by images. Even though most of them are topic-based – Animals, In the farm, Toys... we usually do not rely on

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simple description but we try to create a story associated with an image. This is the moment where we inspire the kids to be creative, to create their own stories and to use their imagination.

In juvenile years many kids (the researches show that more boys than girls) read comics, or probably more accurately said, cartoons. Many journals bring regularly the series of cartoons.

Reading at schools is regular activity and the special attention is paid to reading during language classes. During language classes we do not read to learn, however, often we learn to read, i.e. we need to teach our learners how to read, to use reading strategies.

Bornmann and Munby (2004, p. 4) (based on R. Oxford) identify the following reading strategies:

- “Compensation strategies – guessing intelligently, using linguistic and other clues
- Cognitive – analysing and reasoning deductively
- Affective – encouraging yourself and taking risks wisely”.

Eddy (2011) claims that cognitive style as well as personality play an important role in the process of foreign language acquisition, of which reading literacy is a part.

Oxford (1990) divides the strategies into two categories – direct and indirect and each of these are subdivided into 3 subcategories - the direct strategies include memory, cognitive, and compensation while indirect strategies include metacognitive, affective, and social.

Limited vocabulary can be discouraging and pupils are demotivated to read, yet successful reader uses reading strategies. Guessing can be based on prior knowledge and context. We have to admit that there are several studies that describe the researches in which poor results were gained and guessing strategies were assessed as unproductive (See Dycus, 1997). Straková (2012, p. 158) states that “Within the area of second language development the early language production in general means that the child depends heavily on context, produces words in isolation, verbalizes key words, and responds with one or two words or short phrases, points, draws, or gesture responses”.

In 2006, Nation published a paper in which he described the results of research conducted with Hu in which they “examined the relationship between text coverage and reading comprehension for non-native speakers of English with a fiction text” (Nation, 2006, p. 61). The measures used in the research were first „trialled with native speakers before they were used in the study with non-native speakers. With a text coverage of 80% (that is, 20 out of every 100 words [1 in 5] were nonsense words), no one gained adequate comprehension. With a text coverage of 90%, a small minority gained adequate comprehension. With a text coverage of 95% (1 unknown word in 20), a few more gained adequate comprehension, but they were still a small minority”. That means that for EFL learner it is naturally difficult to read an authentic novel and needs an intensive support, that might be provided, e.g. in a form of pictures and the readers have to apply different learning strategies, including guessing strategies.

### 3.Comics

Scott McCloud (1994) defines the term comics as “juxtaposed pictorial and other images in deliberate sequence intended to convey information and/or to produce aesthetic response in the water”. Harvey (2005) does not support this definition and claims that “McCloud’s definition relies too heavily upon the pictorial character of comics and not enough upon the verbal ingredient. Comics uniquely blend the two. No other form of static visual narrative does this. McCloud includes verbal content (which he allows is a kind of imagery), but it’s the succession of images that is at the operative core of his definition. I hasten to note, however, that regardless of emphasis, neither sequence nor blending inherently excludes the other.”

Many adults consider comics to be books for young children, in US full of superheroes, in Czechoslovakia known especially thanks to Foglar’s Rychlé šípy, however in Japan<sup>47</sup> it is also spread as literature for adults. The prejudice that comics are cheap substitutions of literature, written especially for kids can be easily refuted.

#### 3.1 Comics in teaching English as a Foreign Language

Rudolphe Topffer (1845, In: Scott, 1994) points out that “the picture-story, which critics disregard and scholars scarcely notice, has had great influence at all times, perhaps even more than written literature” but at the same time he adds “...in addition, the picture-story appeals mainly to children and the lower classes...”.

Williams (1995) summarises the advantages of using comics in language teaching: cartoons have a permanent visual component (unlike movies)

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<sup>47</sup> „It was in Japan where comics developed in relative isolation, spawning a host of unique approaches to making comics“ (Scott 1994, p. 210).

characters interact in here and now (you and me not the him and her of narrative)  
 characters share many of the paralinguistic aspects of interaction  
 language lies about halfway between real spoken English and "written" English  
 the language represents one man's idiolect and so is rich in fixed collocations which come round again and again  
 indifferent contexts. (Williams, 1995).

A lot of research has been done on the effects of the extensive reading on foreign language learners, however the topic of using comic books or graphic novels to develop students' English language proficiency has not been discussed so widely. Still, the result of several studies indicate the positive effects of "light" reading: on motivation, studies have shown that readers of comics are also avid readers of more advanced texts, and the use of comic book style graded readers does not hinder motivation to seek out other literature (Cary, 2004, In: Jones, 2010, p. 229)

Marsh (1978, 778) presents the results of the research conducted and describes "four major purposes for which different comics were useful: (1) vocabulary and expressions; (2) grammar; (3) conversations and compositions; (4) culture; also pronunciation, intonation and listening comprehension". Yang (2003) claims that comics can be used as step to more difficult ideas, Carry (2004) suggests that comics can be used to help students develop their writing skills, especially of story writing.

National Council of teachers of English website (2005) reports the research results brought by Shelley Hong Xu who claims that comics and graphic novels "can teach about making inferences, since readers must rely on pictures and just a small amount of text".

Cary (2004, p. 18) describes the Wright and Sherman's research who determined the readability grade levels of over six dozens daily comics based on the number and range of words per strip. This research was based on the readability for native English speakers, nor foreign language learners. He stresses the importance to consider both the amount and level of the text but also the pictures, their details and how (or whether) they support text understanding.

Basol and Sarigul (2013, p. 1625) bring an interesting a comment – they conducted research comparing the used of traditional and graphic novels in EFL classes. They used the Paul Auster's City of Glass and found out that "in the traditional text format of the novel, related with the postmodern style of the author, it was sometimes hard to distinguish the reality and delusions in the novel; however, in graphic novel format, the balloons and images that clearly represent the story line helped students a lot to connect the panels".

The studies show that the issue of comics is not new and the results of different studies proved a positive effect not only in motivation and reading but also writing and possible uses to develop vocabulary and grammar.

Using comics to support foreign language teaching we need to teach our students, comics readers, to read both pictures<sup>48</sup> and words; however, brain based learning and natural environment should be provided (Sepešiová, 2013). (This is also important in case we want to use it for e.g. creative writing.)

Nikolajeva and Scott (2001, p. 7) bring a concise summary of different categorisations of interactions between words and pictures in the books. They quote Golden (1990) who identifies 5 types of interrelations:

- a) The text and pictures are symmetrical (creating redundancy)
- b) The text depends on pictures for clarification
- c) Illustration enhances, elaborates text
- d) The text carries primary narrative, illustration is selective
- e) The illustration carries primary narrative, the text is selective.

Similarly to the above categorisation, Liu (2004, p. 226, defines 5 categories that are based on their function :

- Representation: Visuals repeat the text's content or substantially overlap with the text. (a above)
- Organization: Visuals enhance the text's coherence. (c above)
- Interpretation: Visuals provide the reader with more concrete information. (b above)
- Transformation: Visuals target critical information in the text and recode it in a more memorable form.
- Decoration: Visuals are used for their aesthetic properties or to spark readers' interest in the text.

Nikolajeva and Scott add two more (they call it) extremes, clear-cut categories – text without pictured and a wordless picture books.

Kelley (2010) stresses (quoting Vygotsky) that „Humans typically express thoughts in the form of language, and students' responses to images, though perhaps cognitively silent, still help students utilize language“

<sup>48</sup> Symbols to express "an unprintable obscenity that could make a sailor blush" (Cary, 2004, 62) lines to indicate the movement, the tools to indicate invisible object or people, use of colours etc.

(Vygotsky, 1978; Vygotsky, 1986 In: Kelly, 2011). He supports the idea of using graphic novels in education, including language teaching.

Several authors bring suggestions (using particular comics) that can be applied in language teaching. These can be very useful especially for teacher who believe in the comics value and want to try it in their teaching. They may either use the lesson plans and handouts suggested by their colleagues or simply can be motivated by their work and to create their own.

E.g. Cary (2004) suggests activities that can be used in multilingual classroom but these can be also used in EFL class. Similarly, the motivation for using comics in the multilingual class can be applied in EFL context. Cary warns that comics are not suitable for all settings and the teacher has to be careful in his decisions. Some lessons can be found on the ReadWriteThink Web site at <http://www.readwritethink.org>.

#### 4. Objective and Method

The objective that has guided the research was to find out to what extent language learners apply reading strategies, namely previous knowledge, vocabulary, syntax and context in reading new texts. The study describes results of illustrative case study that was realised in July 2013 - February 2013 with four students, including 3 females and 1 male individually for 2 months (e.g. subject SA – July-August). The one-to-one teaching that involved using comics as reading material took place irregularly, but approximately once – twice a week, what means students worked 8-12 lessons. The translation was used to check full understanding and the discussions about the techniques students used to translate the unknown words were led. The website <http://www.makebeliefscomix.com/> was also used to motivate learners and to let them think how to create context that enables understanding of the text, what later helped them to read effectively.

We realise that case studies present potential drawbacks (a) unsystematic procedures, (b) the influence of biased views on the direction of the findings and conclusion, and (c) an insufficient basis for scientific generalization (see Yin, 2008).

Different cartoons and comics were used to develop reading strategies. The decision to use comics, cartoons and graphic novels was based on the presumption that it might be easier to read the context with the support of image (or from the image) what can lead to positive feeling and higher motivation of readers.

To assess the level (difficulty) of the text we use the tools in lextutor website (<http://www.lexutor.ca/keywords/>) to make sure the text coverage is appropriate and to decide how to work with the text (especially the necessity to pre-teach vocabulary).

#### 5. Sample

Four students were involved in the study. The characteristics is summarised in the following table. We give also some information about L1 reading as we agree with the Paran's (1996, p. 30) statement who claimed that "if L1 readers possess attributes in reading which L2 readers do not, then it is the task of the language teacher to develop ways of encouraging the development of these attributes".

Table 1. Sample characteristics.

Subject	Age	Language proficiency level	Reading efficiency in mother tongue experience	Reading in mother tongue/target language
SA	10	B1-B2	Reads fluently with some hesitations (sometimes pronunciation mistakes – negative transfer from EL). He started to read in both languages-being Slovak and living in English Speaking country since he was 3. He has some vocabulary problems (especially with archaic words and diminutives – applied different word-formation rules – difference of the languages analytical vs. synthetic).	Reads in both, mother tongue and English language/ more in English /especially comics
V	10	novice	Loves reading, she reads fast and clearly, understanding of more difficult vocabulary is supported by pictures or she simply ignores them.	She prefers reading stories about kids at her age, she has never read comic books before. She reads only in Slovak.
M	16	A2	Even though she likes reading, at her childhood she had to be "forced" to read. Until these days she reads with the	Reads usually during holidays, she reads only in English language, but

ST	20	B2	hesitations when reading aloud unknown and long words, but her attitude towards reading is positive.	started to watch mini-series in English with Slovak or English subtitles.
			Started to read at the age of 4, at that time she preferred reading encyclopedia and she did not want to read stories. At the age of 7-8 she read Dahl's Matilda and that was the moment when she started to read the imaginative literature. She reads efficiently, using different strategies. She claims to have excellent Slovak language teachers at elementary and secondary schools leading the students towards reading with understanding.	Reads a lot, both fiction and non-fiction literature. She started to read books in English authentic material but never finished. During her studies she read several graded readers books.

## 6. Data Collection and Analysis

The subjects worked for two months (not at the same time). Data were collected throughout the 2-month treatment period and were gathered through the following three methods: (a) observations made for each reading session, (b) interviews related to the reading strategies applied and approach.

Even though the language of comics can seem to be easy, one can find a lot of cultural-based items and also a lot of idiomatic expressions, similarly as onomatopoeia expression what can cause problems in understanding.

In the lessons the following comics and graphic novels were (selectively) used:

Meet the Somalis - <http://www.opensocietyfoundations.org/multimedia/meet-the-somalis#zein>

Balsa Boy <http://www.viz.co.uk/free-comics/classic-strips/044-balsa-boy>

Kinney, J. (2008). *Diary of Wimpy Kid: Do-It-Yourself Book*, London: Penguin Books

Tan, S. (2003). *The Lost Thing*. Sydney: Hachette Australia

Tan, S. (2012). *Nový svět*. Praha: Labyrint (graphic novel, not comics)

## 7. Results and discussion

All subjects liked reading literature. For them it was something natural, however only ST clearly realised and used the strategies they can use in reading (she was not a novice reader, she was a part of study for the ability to make comparisons between the novice and experienced readers). With subject M (16, developed abstract thinking) we used comics in Czech language once. She used to have and partly has a "block" that she is not good at language learning. The situation has partly changed when she started to visit evening classes and filled in the "gaps" she had at elementary level. Now she progresses better, reaches better results, what leads to higher motivation and positive attitude towards English. She is also motivated by her sister (subject St) who is her "idol" and reads a lot and watches movies in English. In her case we used Czech language for presenting reading strategies. Slovak and Czech languages both belong to Slavonic language and people usually understand the languages without problems, however there are some lexical difference that might cause a problem. Nevertheless, people overcome the linguistic barriers intuitively and without hesitation. In case of English Language, a foreign language for Slovaks, people when they come across an unknown word, they got stuck and had a need to understand and guessing is not enough for them. Reading Czech comics we analysed the processes and strategies she automatically intuitively applied and let her apply them later in reading English texts.

She mostly relied on visual, pictorial context and then started with the analysis of the unknown word (started with the root of the word, affixes, and position of a word in a sentence).

Subject ST, whose prevailing intelligence is logical-mathematical, started immediately with the linguistic analysis.

Interestingly V. (similarly as ST, logical-mathematical type of intelligence) relied fully on images and was not ready to think about the unknown words what was quite understandable considering her age and ability of abstract thinking and not understanding the language system.

SA, had no problems in reading, he had no problem to read interjections (what was problem for V. who is the same age, but different language background). Linguistic barriers were overcome automatically, with no hesitations, only sometimes he asked for translation. The amount of unknown words was clear only during the translation phase as he was able to answer comprehension question. That was not truth about subject V. who stuck immediately when she came across the unknown word.

The following table summarises the strategies applied by the subjects. Even though we dealt with the translation of the words, the context was significantly important and thus evaluation of reading strategies are more appropriate in this case.

Table 2. Use of reading strategies.

Subject	Strategies applied
SA	SA used mostly visualization, ha had no problem to make mistakes, he was not willing to think a lot about the particular words, he was satisfied with understanding the general meaning and had no need to understand every single word (It was interesting to observe how frequently he intuitively used intralanguage principles).
V	Relied on the pictures, at the beginning she was afraid to say her guess or deducing loudly but in the second half of the study period she became more confident (She, in contrast to Sa, relied also on phonetic associations and the attempts to apply interlanguage, however frequently incorrectly).
M	Started to use guessing strategies at the second meeting, she was ready to take risks and make mistakes, especially when she saw the teacher was ready to explain why she was wrong in her guesses, she usually used the context and the previous knowledge to guess the unknown words. She also used a course context (she used forward and backward context to identify the word).
ST	Used lexical inferencing strategies, she applied her linguistic knowledge (she frequently considered the affixes and their meaning similarly syntactic knowledge). During reading graphic novel (Lost Thing) she considered the images, colours, fonts etc. how these supported the meaning of the text.

In relation to the students' attitudes they all expressed positive perception, in the discussions they expressed raised confidence in reading foreign texts. Based on observing we can claim that our subject used metacognitive strategies during the reading meetings as well. They monitored and assessed themselves and we could see how positively motivated they were. They were all asked to create one scene (using 3or 4 panels using the website for comics creation) based on what they read. The level of production varied but they enjoyed the activity and it was challenge for them to read the texts further to compare their stories and the original ones.

The sample was incoherent and we applied different strategies and techniques that were practiced with the subjects – with V and SA we focused more on development of visual literacy and its use to understand the text compared to M and ST where we focused more on understanding the textual context (supported by images) to understand the meaning of the words, even though (or moreover) as mentioned earlier subject ST. was strongly involved by the graphic novel (no problems with text understanding) and in the discussions she focused mainly to the interpretation of the images and the relation between the text and image.

Generally we can say, that all subjects stated they feel more confident now even though not understanding all the words; they are ready to guess, deduce the meaning, and perceive the textual and graphic details to infer the meaning.

## 8. Discussion and Conclusion

We believe that regular reading and gradual development of the reading strategies leads to automatic overcoming of linguistic barriers but there must be a careful selection of text to make sure the text is still understandable and it will not be demotivating as it happened to ST who was expected to read authentic books without appropriate proficiency level.

It has not been mentioned, but it is significantly important to consider also the fact that using comics and graphic novels leads to the development of visual literacy what as Kennedy claims (2010) is “the ability to construct meaning from images. It’s not a skill. It uses skills as a toolbox. It’s a form of critical thinking that enhances your intellectual capacity”.

If learners are trained in exploiting images, visual, fonts they are more sensitive to reading the textual context what enables their reading skills and the use of reading strategies what will lead to the increase of autonomy. . Language teachers must be familiar with such strategies and teach them to their pupils to help them take the responsibility for their own learning. Using reading strategies leads to more effective reading (learning) and supports positive motivation.

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# Using microanalysis to examine how elementary students self-regulate in math: A case study

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## Abstract

The purpose of this descriptive study was to examine how high, average, and low achieving elementary students engage in self-regulation in math. Participants were nine elementary students and their teachers from three different public schools who incorporated the International Baccalaureate Curriculum. Using a microanalytic methodology, students were asked a series of forethought, performance, and self-reflection process items about specific math problem solving. It was hypothesized that high achievers would display more self-regulated learning processes than either average or low achieving students. To provide a more detailed picture of self-regulatory functioning among the different math achievers, a case study of fifth grade students from each achievement level is also presented. Students' reports of self-regulation were also compared with teacher ratings. Results also revealed that high achievers surpassed average achievers, who in turn surpassed the low achieving student in self-regulation. The results were discussed in terms of Zimmerman's social cognitive model of self-regulation. Implications, limitations, and future research are presented.

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*Keywords:* Self-regulation; differences in self-regulatory processes; mathematics; elementary students.

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## 1. Theoretical background

Self-regulated learning has been characterized as a cyclical process whereby individuals proactively engage in their own learning (Zimmerman, 2008). From a social-cognitive perspective, Zimmerman (2000) describes that self-regulated learners engage in various processes through three sequential stages: forethought, performance, and self-reflection. The forethought phase is characterized by processes (goal setting, strategic planning, motivational beliefs) that occur before action and impacts how one engages during performance. The performance phase involves processes (self-control, self-observation) that occur during action. These processes help students to concentrate during learning and optimize their efforts because they employ strategies and monitor their own learning progress. Self-reflection processes (self-judgment and self-reaction) occur following action whereby students reflect on their performance and evaluate it relative to their goals. Self-reflection is assumed to influence subsequent forethought phases, thus resulting in a cyclical feedback loop.

### 1.1. Research on Academic Self-Regulation

Research on academic self-regulation has shown that differences exist between achievement levels. High academic achievers are described as students who set realistic goals, manage time purposefully, make accurate self-monitoring of progress, and perceive a high sense of academic efficacy for learning. In contrast, low academic achievers display low academic goals, low self-efficacy beliefs in learning and self-regulated learning, and inaccurate assessment of their performances (Kitsantas, 2002; Zimmerman, 2002). For example, Zimmerman and Martinez-Pons (1990) studied self-regulation strategies and self-efficacy beliefs of fifth, eighth, and eleventh grade students in different performance groups. The findings showed those students high in academic achievement display greater, more adaptive use of self-regulation strategies and self-efficacy beliefs than low achieving students. In a more recent study, Kitsantas (2002) examined the effect of self-regulatory processes on test preparation and performance in college students. The results of this study showed that high test scorers exhibited more self-regulatory processes while studying for an exam, taking a test, and after receiving their test results than would low test scorers. More recently, DiBenedetto and Zimmerman (2010) examined students' self-regulation with 11<sup>th</sup> graders in science. Their findings showed that high achieving students used

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more subprocesses (i.e. strategic planning, metacognitive monitoring, self-evaluative standards) than those who are average and low achievers. Science learning was also significantly correlated with key subprocesses in forethought (strategic planning) and self-reflection (self-evaluative standards, self-satisfaction). Although there is some research on younger students' isolated self-regulatory processes (Beghetto & Baxter, 2012), to our knowledge no studies have examined how elementary students self-regulate their learning in math as they prepare to engage in the task, act, and reflect on their performance. Findings may yield important insight to guide future instructional practices aimed at supporting students in self-regulated learning.

### 1.2. Measurement of Self-regulation: A Microanalytic Perspective

A variety of assessment approaches (e.g. self-report scales, interviews, and think-aloud protocols) has been used to measure self-regulation. Self-report scales are the most common method used; however some researchers have called to attention the use of contextualized measures (e.g. think-aloud methodology, SRL microanalysis) as better assessment of self-regulation (Cleary, Callan, & Zimmerman, 2012; Zimmerman, 2008). To capture self-regulation processes, social-cognitive researchers have established an assessment technique called Self-Regulated Learning (SRL) Microanalysis (Cleary & Zimmerman, 2001; Kitsantas & Zimmerman, 2002). A microanalysis is a structured interview approach that targets key self-regulation processes (e.g., goal setting, strategic planning, self-monitoring, self-evaluation) embedded in Zimmerman's cyclical model of self-regulation. Because a microanalytic approach is highly contextualized and well-equipped to capture the processes of self-regulation (Cleary, 2011), this approach has been widely used in various fields other than educational psychology. To date, research studies using a microanalytic approach have mostly been investigated on the learning of athletic skills such as free-throw shooting, volleyball serving, and dart-throwing (Cleary & Zimmerman, 2001; Kitsantas & Zimmerman, 1998, 2002). Finally other researchers have found that a microanalytic approach has greater predictive validity of student learning than other well-established teacher reports of students' self-regulation (DiBenedetto & Zimmerman, 2013).

### 1.3. Present Study

While a majority of studies have focused on self-regulation with middle school, high school, and college students (e.g., Kitsantas, 2002; Pintrich & De Groot, 1990; Zimmerman & Martinez-Pons, 1990), there remains a lack of studies done on students' academic self-regulation in the elementary years. Little is known about how mid-elementary students self-regulate. Thus, the purpose of the current study is to examine how mid-elementary grade students (grades 3 to 5) self-regulate their learning. In the present study, the microanalytic approach was used to assess students' self-regulation in math. Only a handful of research studies have used this approach to assess self-regulation in academics (Cleary et al., 2012; DiBenedetto & Zimmerman, 2010). It was expected that high achieving students will engage in more subprocesses within the three-phases of self-regulation than both average and low achieving students. Additionally, it is anticipated that students who are high in achievement will be more accurate in their perception of their self-regulation and that teachers' perception of these students are parallel to student ability to self-regulate.

## 2. Method

### 2.1. Participants

The sample consisted of nine students in third-, fourth-, and fifth-grade and their teachers ( $N = 4$ ). Participants were from three International Baccalaureate (IB) schools in the Washington DC Metropolitan area. Two to three classrooms from each school were asked to participate. The ages of the students ranged from 8 to 10 years ( $M = 8.9$ ), with 5 being female students and 4 being males. The ethnicity of students was: 4 African American, 1 Hispanic, 1 Caucasian, and 1 Asian Pacific Islander. Ethnicities of two students were not reported.

### 2.2. Materials

The Teacher Rating Scale for Assessing Elementary Student Self-Regulation in Mathematics (Kitsantas, Cohen, & Ware, 2013). This is a 25-item scale that assesses elementary students' self-regulation. Teachers rated self-regulation processes such as goal setting, strategic planning, monitoring, self-reflection, and motivation to learn in mathematics. A sample item was, "Student sets goals before approaching an assignment or difficult math problem." A 5-point Likert scale (1=almost never, 5=almost always) was used to rate how often the learning behavior in mathematics occurred. A "don't know" response was included as one of the options.

The Student Micro-Analytic Interview Protocol (Kitsantas & Miller, 2013). This instrument was developed to measure students' self-regulated learning of an academic mathematics task. This structured interview protocol

uses highly contextualized questions while students engage in solving a specific math problem (e.g. fraction problem). Microanalytic items asked direct questions about a specific math problem that was given to students to solve and included 11 items. Sample items of the specific microanalytic questions included these: “How sure are you that you can solve this math problem correctly: (10) Not sure at all to (100) Very sure” (forethought); “Are you checking to see if you are getting the answer you thought you would” (performance); “What is the main reason why you were successful or failed on this math problem” (self-reflection). An inter-rater reliability of 97.6% was reached by the two coders, with disagreements being resolved with discussion.

### 2.3. Procedure

After collecting informed consent, teachers were asked to select two to three students of different ability levels to participate in the study. After receiving parental consent from students, teachers completed the teacher rating scale for each participating student. Prior to the microanalytic interview, teachers were asked to provide the researcher with a math problem for the student to solve, which was based on what students were currently studying (e.g. comparing fractions, 4 digit subtraction, division, multiplying and dividing fractions). During the student interview, the researcher read-aloud to the student all the items. Afterwards, students were shown the math problem that was provided by the teacher and asked items pertaining to the forethought phase. Next, students were asked to solve the problem, and then asked items from the performance phase. After completing the math problem, students were asked microanalytic items from the self-reflection phase. Each student interview took approximately 20-30 minutes to complete.

## 3. Results

A descriptive case study approach was used to analyse students’ self-regulatory processes in math. Analyses of the microanalytic measurement approach provided qualitative and quantitative data for reporting differences in self-regulatory processes across the three math achievement levels. Examination of the teacher perceptions’ of their students’ self-regulation were reported using Pearson  $r$  correlations.

### 3.1. Descriptive Statistics

Table 1 provides the means and standard deviations of the teachers’ ratings of the three achievement groups. Descriptive results indicate that teachers generally viewed high math performers with higher levels of self-regulation than average and low performers.

Table 1. Means and Standard Deviations of Teacher Ratings of Students’ Self-Regulation by Achievement Level

Student ( $N = 9$ )	Self-Regulation Phases					
	Forethought		Performance		Self-Reflection	
	M	SD	M	SD	M	SD
High Achievers ( $n = 5$ )	4.30	.55	4.73	.32	4.15	.42
Average Achievers ( $n = 3$ )	4.18	.51	4.21	.28	3.67	.33
Low Achievers ( $n = 1$ )	2.88	-	3.36	-	3.22	-

### 3.2. Student Self-Regulatory Functioning in Specific Math Problem Solving

**Forethought Phase.** Regarding *strategic planning*, students were shown a specific math problem and then asked about having a plan to solve it. Six out of nine students reported having a strategic plan to solve the presented math problem. In addition, two students in third grade had no plan and one low achieving student in fifth grade failed to mention a strategic plan (i.e. look back at notes, solve it). For this item, the numbers of strategies mentioned by students were counted, with responses ranging from one ( $f = 4$ ) to two ( $f = 2$ ) strategies. Three students reported no strategy. Regarding *self-efficacy beliefs*, all students reported a high level of self-efficacy for solving the math problem. In terms of *outcome expectations*, eight students were very sure that they could solve the problem ( $M = 97.5$ ,  $SD = 3.66$ ) and one student in third grade indicated a moderate level (55 out of 100). When asked why they believe they can solve the math problem, seven students responded with a general focus and two students had a specific focus. An example of a specific focus is explaining the steps to solve the problem, while a general focus response would be talking about being confident or good at using strategies. Regarding *task interest*, most students ( $f = 7$ ) were interested in learning more about similar math problems. A

slight pattern emerged showing that older students ( $f = 3$ ) were more interested in doing similar math problems than compared to younger students ( $f = 1$ ). When asked about their *goal orientation*, all students mentioned that a mastery goal orientation was more important than a performance goal orientation.

**Performance Phase.** Regarding plan implementation, seven students indicated using their original plan to solve the math problem and one fifth grade student had mentioned setting a new plan. When asked about whether they were checking their progress, seven students mentioned that they were checking. All seven responses were valid monitoring, with various responses such as these: “I did it in my head, and then I checked to make sure the right name of food [from the problem]” and checking work using a drawing.

**Self-Reflection Phase.** Regarding *self-evaluation*, students were immediately asked after they finished the math problem whether they achieved their goal to solve the math problem. Seven students responded having achieved their goal to solve the math problem. Interestingly, students varied in responses when asked about how they knew they achieved or did not achieve their goal. Responses included the following: using a correct strategy (e.g. multiplication) ( $f = 2$ ), effort (e.g. showing work) ( $f = 1$ ), and making an incorrect calculation ( $f = 2$ ). Responses that did not fit with these were indicated as other (i.e., mentioning that they did a good job, feeling confident) ( $f = 4$ ).

Regarding *causal attribution*, seven students responded using strategies as the main reason why they were successful or failed on the math problem. The strategies mentioned varied across students. For example, a strategy that some students reported was checking one’s work. In addition to checking, they mention that “I need to show my work, check, put more than one sentence, and explain everything” and “read the question, be careful, do it, then go over it.” One student (third grader) from the average group indicated not knowing basic math skills last year thus attributed his outcome to ability. Another student (fifth grader) from the low achieving group attributed learning to effort. Regarding *satisfaction*, eight students were very satisfied with their overall performance on the math problem ( $M = 98.13$ ,  $SD = 3.56$ ) and one fourth grade student (average achiever) that received partial credit for solving the math problem reported being moderately satisfied (50 out of 100). Regarding *adaptive/defensive inferences*, students were asked what they needed to do to perform well on the next math problem. Eight students provided adaptive inferences, with seven students indicating strategies and one fifth grade student responding effort. The same third grader who attributed failure to ability responded to this item with do not know.

### 3.3. A Case Study of High, Average, and Low Achieving Fifth Grade Students

To provide a more detailed scope of the differences in SRL processes among students of different achievement levels, a case study of three fifth grade students from each achievement level was examined. Due to the small

sample size of students from each grade levels, a comparison of students across the same grade level from each achievement group were not available with third and fourth graders, thus fifth graders were selected for the case study. The three fifth graders were Kelley, a high achiever, Cindy, an average achiever, and Daniel, a low achiever. These students had the same teacher and were given the same math problem to work on.

**Forethought phase SRL processes.** In general, a high level of self-efficacy in math was reported by the three fifth grade students in each achievement level. Kelley and Daniel rated being very sure (99 out of 100) about solving the math problem; while Cindy rated a self-efficacy score of 96. The students’ *strategic planning* was qualitatively different. When students were shown a math problem, for example, Kelley described two strategies for solving a specific math problem, while Cindy provided one strategy and Daniel provided no strategies.

**Performance phase SRL processes.** During students’ performance on the specific math problem, differences were found in plan implementation. Kelley and Cindy reported using their initial plan to solve the math problem, while Daniel indicated a new plan (e.g. using strategies) that was different from his original plan (e.g. look back at notes, solve it). The data for *self-monitoring* during the math problem showed that all students were checking their answer. **Self-reflection phase SRL processes.** All students reported using one strategy for identifying when they do not understand math concept. After students finished solving the math problem, slight differences were found in *attribution* and *adaptive/defensive inferences*. For example, Kelley and Cindy both reported adaptive inferences (i.e. strategy), while Daniel reported a less adaptive inference (i.e. effort).

### 3.4. Reports of teachers’ ratings of their students’ self-regulation

Students’ reports of self-regulated learning were compared with teachers’ reports of their students’ engagement in self-regulation. Results indicate that high achieving students were rated more highly by their teachers in various SRL processes within each self-regulatory phase as compared to average and low performers. Particularly, high achieving students surpassed average achievers, who in turn surpassed low achievers in setting goals, utilizing strategies, monitoring of one’s own learning, seeking help, using higher level thinking, and

motivation. In spite of the small sample size there was a significant positive correlation between math problem solving and teacher reported task analysis,  $r = .79, p < .05$ , and math interest,  $r = .79, p < .05$ . A similar pattern of results emerged for math problem solving and strategy use,  $r = .74, p < .05$ , and strategy implementation,  $r = .75, p < .05$ . A stronger relationship was found between math problem solving and self-evaluations,  $r = .89, p < .001$ . Thus, students who reflected on their performance and evaluated it were more likely to solve the math problem correctly.

#### 4. Discussion

Using a microanalytic approach, the present study showed that mid-elementary math students report using various processes of self-regulation within Zimmerman's three-phase model of self-regulation. Findings showed that high achievers engage in more strategic thinking before, during, and after math problem solving than average and low achievers. These results are fairly consistent with previous research on science learning in high school students (DiBenedetto & Zimmerman, 2010) and test preparation in college students (Kitsantas, 2002). In addition, findings supported earlier studies using a microanalysis with high school and college athletes (Cleary & Zimmerman, 2001; Kitsantas & Zimmerman, 2002). Furthermore, a case study of fifth graders was conducted to provide more insights about the differences in self-regulation among different achievers. Finally, comparison of teachers' and students' reports of self-regulation showed that high achievers differed from average and low achievers.

##### 4.1. Patterns in Self-Regulatory Functioning in Specific Math Problem Solving Using Microanalysis

**Forethought phase.** Overall, nearly all students reported a high level of motivational beliefs within the subprocesses of *self-motivational beliefs* (i.e. self-efficacy, outcome expectation, and goal orientation). A possible reason why students reported similar levels of motivational beliefs is that primary school children tend to overestimate their competence (Bandura, 1986, 1997). Consequently, this finding suggests that children may exhibit inflated performance expectations because they underestimate the task demands. As children mature though, they gradually gain familiarity with the task demands and knowledge about their capabilities. Therefore, they become more realistic of their capabilities over time (Bandura, 1997). Regarding *outcome expectations*, however, one student (third grade) reported a contradicting response, first mentioning a high level of self-efficacy to solve the math problem, and then reporting being somewhat (55 out of 100) certain that he can solve it correctly. In addition, this student previously indicated a low level of self-efficacy in math and mentioned struggling with the current math unit (i.e. 4 digit number subtraction). In previous reports, this student (average achiever) indicated setting no goals, using general techniques, no monitoring of math progress, and maladaptive self-reflections. Overall, this student struggled to solve the math problem and reported low engagement of self-regulation processes.

In addition, most students focused on general reasons for why they can solve the math problem, with similar responses saying that "I've done it before, it takes strategy" and "I've done problems like this in my class and I've gotten them right". Interestingly, students who mentioned having done this type of problem before and being good at using strategies were the ones who received partial credit for solving the math problem. In contrast, students who mentioned a specific focus such as steps for solving the problem were the ones who solved the problem successfully. This suggests that strategic thinkers are specifically focused on a strategic plan, and in turn will tend to use correct strategies to solve math problems.

Regarding *strategic planning*, findings showed that most students had at least one strategy in mind for solving the math problem. Students who provided detailed descriptions of strategies of their plan tended to get the correct solution. This suggests that regulated students not only know when and how to use learning strategies, but can elaborate on their strategies. Elaboration, a key process of metacognitive strategies, is essential to learning as it enables students to acquire and master academic content (Alderman, 2008).

**Performance phase.** Regarding plan implementation, many students indicated using their initial plan to solve the math problem. Regarding *self-monitoring*, most students indicated checking their work. Self-monitoring is an important process of self-regulation because it informs the learner of his or her progress and helps the learner modify strategies as they engage in tasks (Zimmerman, 2000).

**Self-reflection.** After finishing the math problem, students who solved the problem correctly (high performers) used good judgments to evaluate their performance. Students (average performers) who received partial credit also attributed their performance to strategy. In contrast, the low achiever attributed his performance to effort and solved the problem incorrectly. In addition, students' degree of strategic thinking was varied among the type of achiever, with high reports of strategic thinking among high achievers. These findings are consistent with previous research showing that high performers make better judgments of their performance than lower performers (DiBenedetto & Zimmerman, 2010).

#### 4.2. A Case Study of High, Average, and Low Achieving Fifth Grade Students

The case study of three fifth graders in each achievement group showed qualitative differences in self-regulatory processes, thus validating the microanalytic approach. Kelley, the high achiever, reported an accurate perception of her math competency, used a variety of strategies, and made adaptive evaluations of her performance. Low self-regulators such as Cindy and Daniel formulated inaccurate perceptions of their ability, made fewer strategic plans, were less metacognitively aware of his or her performance, and made lower self-evaluative standards. A high level of self-efficacy was exhibited by all three students for the math problem. Realistically, Cindy and Daniel overestimated their level of competency in solving the math problem because they have yet to master the skills needed in performance. Regarding *strategic planning*, Kelley provided more accounts of strategies to solve the math problem, followed by Cindy and then Daniel. Furthermore, Kelley provided a plan that was more specific and descriptive. Cindy simply mentioned the strategy (i.e. “Just multiply it”) and Daniel did not seem to know what strategies to use.

Regarding plan implementation, Kelley and Cindy both indicated a valid plan with strategies, while Daniel did not indicate a valid plan (no strategy). Regarding *self-monitoring*, all three students indicated checking their work for mistakes. Regarding self-reflection processes, Kelley exhibited more strategic strategy use than Cindy and Daniel. In addition, Kelley generally has a good understanding of the strategies to use and can tell when a wrong strategy is used. In contrast, Cindy and Daniel indicate seeking help most of the time when they don’t understand math concepts. During self-evaluation, Kelley mentioned being confident (self-efficacy) and reflected on her goal. For Cindy, checking for mistakes to the math problem was her main focus in her evaluation; however she did not specify the steps used to check her answer. For Daniel, his evaluation was focused on the strategy (i.e. multiplication). Unlike Kelley and Cindy who both indicated strategies that were aligned to the process of learning, Daniel’s evaluation was rather a poor judgment because he was concerned with the strategy itself and not his performance. Regarding *causal attribution*, Kelley and Cindy both attributed their learning to learning strategies. In contrast, Danny attributed his outcome to effort (i.e. “I took my time, rethink, and see if I got this answer correct or not.”). Regarding *adaptive/defensive inferences*, Kelley and Cindy both indicated adaptive inferences (i.e., strategies), while Danny exhibited a defensive inference (i.e., effort). In addition, their outcomes on the math problem reflected their math ability, with Kelley solving the math problem correctly, Cindy receiving partial credit, and Daniel unable to solve the problem correctly.

#### 4.3. Teacher-Student Agreement

Finally, using quantitative data, evidence showed teacher-student agreement in reports of self-regulation among different level achievers, with high achieving students exhibiting more SRL processes than average and low achieving students. These findings supported Zimmerman’s self-regulation model and previous research showing that a microanalytic measurement is well-equipped for capturing students’ self-regulation in an academic domain (DiBenedetto & Zimmerman, 2013).

### 5. Implications and Conclusions

Despite the limitations of the present study (e.g., just one low achieving student and the targeted academic context), the findings of the current investigation have important implications for teachers. The use of SRL microanalysis in academic domain allows teachers to gather context-specific information about how students’ forethought, performance, and self-reflection are interconnected (Zimmerman, 2000). For example, students who set process-oriented goals demonstrate not only greater motivation to persist in tasks, but also more strategic strategy use, and adaptive reflections of their performance. In contrast, students who set outcome-oriented goals exhibit less motivation, demonstrate fewer strategies, and make more maladaptive reflections of their performance (Cleary & Zimmerman, 2001; Kitsantas & Zimmerman, 2002). Teachers, thus, should emphasize their students to set process goals rather than outcome goals because it is crucial to the development of self-regulation in learning.

In addition, teachers should provide guidance for when and how to use strategies (Pressley & Woloshyn, 1995). For example, teachers can advise students to set goals before doing math homework and to think about strategies beforehand (strategic planning). In preparing students for doing math homework and studying for math tests, teachers should help students to develop a repertoire of self-regulated strategies. Furthermore, teachers should instruct students to set new goals after getting back a math test. This form of self-reflection is important because it allows students to evaluate their performance. Particularly, teachers should educate students on making adaptive evaluations of performance that are based on the process of learning rather than on outcomes. Focusing on the process not only helps students to enhance math skills, but also increase self-efficacy and intrinsic interest, and performance (Kitsantas & Zimmerman, 1998). Overall, collectively, these findings provide valuable knowledge to help teachers instill self-regulated learning.

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# Using solo drama to make the teaching of social studies engaging for students

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## Abstract

Social studies is a major subject taught in schools in the United States. Research shows lack of interest in the subject by most school children. The author reflects on how he prepares teachers in a graduate drama course to use solo drama as another instructional option to address the problem. The paper also examines integrated solo drama projects by four students in their respective classrooms as case studies. The findings are synthesized to demonstrate the efficacy of this drama strategy for classroom teachers and teacher educators to adopt in making social studies meaningful and engaging for learners.

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*Keywords:* solo drama; integration; classroom teachers; social studies; engaged learning

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## 1.Introduction

The US like many other countries worldwide believe in excellent education of children upon whom a vibrant national growth depends during this 21st century and beyond. For this reason, social studies is an integral part of the elementary and high school curriculum. The general purpose for teaching this subject is to equip children with requisite knowledge and understanding of who they are; the social, historical, political, economic, and cultural heritage of their own people; about their communities, this nation and the world around them. These children are also expected to learn and have full awareness of the democratic practices and ideals including the core values of good citizenship. As a result, they will be adequately prepared to have the knowledge, values and skill set necessary for them to negotiate life successfully when they become adults. In the same vein, they will be able to contribute their quota as responsible citizens towards a more robust economic, democratic and technological advancement of the nation and the global society at large (Schell & Fisher, 2007). Unfortunately, most schools are not attaining the expected goals for teaching social studies today. Many students are increasingly getting disengaged from it. They consider it boring. This attitude on the part of students is engendered by several factors. These include the employment of conventional instructional methods which promote too much teacher talk, memorization of facts, over use of work sheets, and lack of content relevance to the personal lives of students as well as their culture and community (Seefeldt, 2005; Sunal & Hass, 2005).

It is obvious that how the subject is generally taught is a problem. The negative perception that students have about social studies will never change unless it is made appealing and relevant to them. To reverse this trend, concerted effort is being made by many teacher education institutions to orient in-service and graduate students to alternative instructional methods. The arts including a variety of drama approaches are amongst such pragmatic teaching methods considered appropriate for invigorating and engaging students in the study of social studies. However, one aspect of drama that has not been fully tapped as a tool kit for this is solo drama. The purpose of this paper, therefore, is to demonstrate the potential of this art form as a useful educational tool for social studies. First, a brief overview of solo drama and how it became part of my drama course will be presented. This will be followed by a nutshell account of how students are prepared to use solo drama method for teaching social studies in the classroom. Next, I will draw from integrated solo drama projects done by four students in their classrooms as case studies to examine the impact of the process on the learning of their students. Finally, I will synthesize my own thoughts from the findings about the efficacy of the medium to revitalize students' love for social studies.

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## **2. Meaning, nature and functions of solo drama**

Solo drama, as the name implies, is simply a play performed by an actor for an audience. It is an interactive performance piece which enables the player to involve audience members in the dramatic action (Catron, 2000). The form and content of solo drama does not necessarily conform to the conventional structure of a play. Also, the length of a performance can vary from two minutes to over one hour. This type of drama is generally used to raise awareness and educate people. The works of Saldana (2005) and Catron (2000) reveal that solo drama has other by-names like monologue, solo play, one-woman show, mono drama and one-person show. But in this paper the term monologue and solo drama will be used interchangeably.

Solo drama enjoys huge popularity in academia and in circles of amateur and professional theatre artists. For example, in *Extreme Exposure: An Anthology of Solo Performance Texts from the Twentieth Century*, Boney (2002) demonstrates how more than forty nationally acclaimed solo dramatists including Whoopi Goldberg, John Fleck, Anna Deveare Smith, have used solo dramas to sensitize society. Solo drama also features prominently in training students in the fields of acting, playwriting, and directing in theatre studies department of many colleges and universities. They are often used for audition purposes by student actors and amateur artists to contest for a role or a job (Catron, 2000). Occasionally local professional artists take solo dramas into schools. But there is little research about how classroom teacher are prepared to use solo drama as a catalyst for teaching subjects in the school curriculum including social studies. According to Sunal & Hass (2005), experiential learning which engages different modes of interaction with content, artifacts, people and events in an out of the classroom is great for making social studies meaningful to students. They also believe that this kind of learning leads to better understanding of concepts, development of critical thinking, problem solving, decision making, and attitude transformation. So does solo drama have what it takes to foster this kind of learning? Can teachers design and implement integrated solo drama lessons which make social studies purposeful and engaging? What is the evidence? These are the essential questions which guide the purpose of the paper.

## **3. Exploring the uncharted field of solo drama pedagogy**

I teach the Drama and Critical Literacy graduate course in the Integrated Teaching through the Arts program. I junket regularly across the country like my colleagues to teach my drama course in an 8-week term model. The purpose of the course is to guide students to acquire the craft of using drama as a teaching tool across the curriculum. Solo drama constitutes the core of the course. Initially, I was not aware of any precise model which teacher educators could use for preparing teachers in the theory and practice of solo drama when I thought about including it in my course. Therefore shifting the focus of the course to solo drama pedagogy was tantamount to exploring an uncharted territory. But I was able to redesign the course that has since been appropriate for the experimentation. This dream became a reality through research, personal association with professional solo drama artists in Cambridge, MA, collaboration with fellow core faculty/drama professors, and adjuncts who have dabbled in solo drama at some point in their careers.

## **4. Theoretical framework and immersion process**

My first college preparation to become a teacher got me deeply interested in Vygotsky. Since then I have been a passionate believer in his social constructivist theory. Social constructivist theorists advocate for collaborative, interactive learning processes which allow students to dig deep into understanding and constructing new knowledge from experiential activities through practical involvement, reflection, and questioning. The constructivist teacher therefore is a facilitator whose role is to support, guide, coach and co-construct learning with students (Vygotsky, 1978; Wright, 2003). These conceptualizations are also in sync with meaningful and engaged teaching of social studies (Sunal and Hass, 2005; Provenzo, Butin & Angelini, 2008). Therefore I approach the facilitation of the course through the lens of a social constructivist. There are several stages through which I take students so that they can have full orientation in the theory and practice of solo drama pedagogy. This portion of the paper provides a snapshot of the hybrid format that I use.

Online assignment prior to formal class session: This usually takes the form of a survey to find out information from my students about the grade levels they teach; demographic of students in their classes; location of their schools; their background knowledge in drama and theatre in education; and what they expect to learn from the course. This survey is posted on the Discussion Board of the course website several weeks before the class meets. The responses I get give me some useful information about the composition of the class, needs and expectations. I am able to tweak my activities and pedagogical approaches. This helps me to cater to the needs of the mix of teachers from elementary, middle, to high school; and sometimes college instructors.



First weekend of class session: The class meets face-to-face on Saturday and Sunday for the first weekend of the term. Students begin to learn the theory and practice of drama/solo drama integration into the curriculum. The process encompasses a review of the syllabus (class protocol, objectives, assigned readings, individual and group assignments, assessment, and final project); drama games; examining the place of drama in school and community education; pantomime; improvisation; elements of drama; explorations of drama strategies taken from process drama such as hot seat; tableau; questioning; writing; role play; and reflection. Students are also guided to learn the skills of drama infused lesson structures connected to the curriculum.

During this foundational stage, progression of learning experiences gradually shifts to solo drama. I introduce the students to three types of solo drama: 1) social issue monologue (deals with school, community, national and global issues of concern), 2) historical/biographical monologue (an enactment of the life of a person, past or present, who has made a difference in the lives of others) and 3) a missing voice monologue. The missing voice monologue is often based on literature: fiction or non-fiction. The intent is to give voice and visibility to any character in a text who says little or nothing at all in relationship to the adventures of the hero who represents the author's agenda. At the heart of this monologue is the application of critical literacy concept to promote diversity, multiple perspectives and social justice. Students learn to question sources of authority, power, the author or character's perspectives in a text or performance. Then they can have the opportunity to reconstruct their own meaning in relation to the realities of the world. This concept of critical literacy if applied to all three types of solo drama leads students to a point of discernment, action and transformation (Schneider, Crumple & Rogers, 2006). The students and I work together to identify sources from which to generate ideas for solo drama. For example, subjects in the school curriculum, plays, children's story books, literature, and the local newspaper. We also look for current social, cultural, economic, political, sexist and environmental issues or events.

Writing a monologue script, creating and portraying a realistic character and performance techniques are essential components of solo drama which students also learn at this phase. I find the basic guidelines about these elements suggested by Catron (2000) and Peters (2006) for actors and playwrights very useful. I adapt some of their activities and reinforce them by using the concept of 5Ws: What, Who, Where, Why and When to coach students to acquire the skills for writing and performing a monologue. Another important aspect is the schema for integrating solo drama into a lesson. I invite students to share in small groups how they write lesson plans for the subjects they teach in their classrooms. I build upon the feedback from the groups to guide students to structure a lesson plan which incorporates the following additional elements: strategies for a monologue performance by the teacher; learner involvement through questioning; hot seating; reflection; keeping journal; writing and role play. They also learn how to apply other activities like poetry, music, storytelling, visual arts and technology in the interdisciplinary lesson to deepen the learning experience.

At every phase, I use modeling to demonstrate the concept, context and process. The text books I use for the course are *Creative Drama in the Classroom* by Nellie McCaslin and *The Power of One: The Solo Play for playwrights, Actors, and Directors* by Louis Catron. I guide students to read appropriate chapters to review theories and practical approaches for foundational educational drama work and solo drama experience from the respective books. I also use videos for further illustration, reflection, and discussion. For instance, I show the video titled "*Fires in the Mirror*" by Anna Deveare Smith as an example of a social issue monologue. I pose questions for students to investigate the themes for her performance, how she devises monologues, and her purpose for using solo drama. We review her acting style, use of language, and production technique. To illustrate a missing voice monologue I simulate an integrated solo drama lesson based on *Corduroy* by Don Freeman. I scaffold the progression of activities which range from reading and interpreting author's intent; identifying missing voices in the story including Lisa; making predictions and assumptions about Lisa and her family; and performing Lisa's monologue. This is followed by hot seating Lisa in character by the rest of the class to find out more information about her feelings, behavior, values, family and relationships with other community members that surfaced in her monologue but not shared in the original story. Students are guided to ask open-ended questions during the hot seating in order to elicit constructive responses.

Reflection after the experience often leads students to discover themes such as friendship, selflessness, family values and responsibility. I organize students into groups of three and challenge them to dialogue about the importance of these qualities for parents, educators, school kids and of course, good citizenship. I do this primarily for students to realize the importance of making connection between written text, performance, school learning, and the real world. I also coach students to write short monologues for any missing voice of their choice from the original story like the toys, the night watchman and the sales lady. They configure themselves into groups of four to begin the project. First, each person explains why he or she has chosen a particular characters as missing voice. Then they take turns to practice performing the monologue and the hot seating. When the demonstration is over, I invite students to critique the strength and weakness of the process. I also encourage to suggest alternatives for what needs to be fixed. Finally, I break them into grade level groups to

discuss insights they have gained from the experience; and how they might use this pedagogy for other subjects in the curriculum.

Between Weekend Online Assignments: Students return to school after their weekend class for three weeks to continue their normal professional responsibilities in their schools. At the same time, I facilitate online study of theorists, scholars and practitioners like Dorothy Heathcote, Piaget, Froebel, Dewey, Freire, Boal, Vygotsky, and Cecily O'Neill. Students also have the freedom to choose any theorist of their choice. They do research, write a reading log to post on the class wiki. This helps them to have better understanding of educational theories and practices which would best inform their own teaching philosophy. Students also do online article review of multicultural education, critical literacy concepts and practices. This is followed by analytical, collaborative conversation and response to questions set on the discussion board by the instructor. The goal here is to have students digest these concepts in relation to how drama/solo drama can be applied to foster culturally responsive teaching that will cater to all learners including English Language Learners.

Finally, students are required to research and write a monologue script based on a proposed lesson plan to be taught in their own classrooms. Each student is expected to come to the next class prepared with props and costumes to perform the monologue. The student should also present a proposed lesson structure which includes lesson objectives, demographics of students, grade level, duration of lesson, strategies to weave in the monologue performance, hot seating, open-ended questions to engage students, supplemental creative activities to deepen further student learning and reflection.

Weekend two class session: On the Saturday and Sunday of this weekend, drama games are used to start each day. Students continue to be immersed in more drama-based approaches, multimedia application in drama, arts-based assessment methods, class text discussions, strategies for parents, family, and community involvement in student learning, integrated group drama lesson projects and presentations. But a good chunk of the week is allocated for students to perform their monologues and to share ideas about their lesson plans. Each performance is critiqued by peers and me. Feedback and constructive suggestions are also provided immediately on the structure and content of the proposed lesson plan. I create space for students to have voice to ask questions; and at the same time contribute ideas to help their colleagues. This gesture is to acknowledge their expertise as classroom teachers. I also do this kind of acknowledgement when I am facilitating practical activities or discussions. The process for performing the monologues and peer critique is carefully interspersed with the activities described above. The goal is to have students hone their instructional skills in solo drama in lieu of the actual implementation of the lessons in their respective classrooms.

Key assignment implementation project: After the end of the second weekend session, students have three weeks to fine tune their monologue scripts and lesson plans. Within this time frame, they teach the interdisciplinary solo drama lesson in their classrooms. This can either be a social issue monologue, historical/biographical monologue or a missing voice monologue that could be integrated into any subject including social studies. Each student is expected to submit the following documentation for assessment: a lesson plan, monologue script, a 6-8 page reflection paper, video clips, photographs and selected samples of student works.

## **5.Method**

Qualitative research can be conducted in a variety of ways including case study. Case studies are useful for a detailed investigation of a single case with the intention of providing some description or theory. Guba & Lincoln (1981) state that the purpose of a case study determines its content. This may be to teach, provide knowledge or to test. Lightfoot (1978), and Bogdan & Biklen (1992) also point out that multi-case studies can be done for generalizability, comparison and contrasting or integration. I used the multi case studies approach for this study. The rationale was to compare and contrast solo drama integration in a social studies lesson by classroom teachers to generate data. The information gathered would be synthesized to illuminate any contributions solo drama might make to learning social studies.

### *5.1.Participants*

Participants in this study were four, certified practicing teachers who took my drama and critical literacy course class as students. All of them but one was male. Their ages range between 25 and 40. The male teacher taught grade 9. One female taught kindergarten, the other taught grade 3. But the third person taught grade 4. They all taught in school districts located in different states. The population of students in their respective classrooms were diverse. I prepared them to use solo drama method to enhance student learning in any curriculum subject according to the process, theory and practice described above. I chose them as participants for the study because they integrated solo drama in interdisciplinary social studies lessons in their classrooms to

fulfill the final course requirement. Their projects were a good fit for the purpose of this study. They signed a consent form for me to use them for my investigation.

### *5.2.Data gathering and analysis*

Borg & Gall (1989) endorse the use of interviews, questionnaires, participant observation, examination of documents, artifacts, video and audio recording and field notes as tools for collecting data for case studies. Therefore, I used materials the teachers provided me from their key assignments as sources for the data. From each student, I collected the following: a written reflective paper between 6 and 8 pages, a lesson plan, a video clip of the teaching and learning process within the classroom context, several samples of student works, photographs of students doing individual and group projects; and photographs of the teacher performing or interacting with students.

The kindergarten teacher had predominantly white kids. There was only one kid of color in her class. However, the class was heterogeneous in terms of gender. The topic for her lesson was “Differences and Similarities” She researched and wrote her own original monologue script on Rosa Parks. She incorporated it in the lesson as a historical/biographical monologue. The 4th grade teacher had a mixed group of 19 students. There were 5 gifted students and 6 English Language Learners. There were also more girls than boys. She did an interdisciplinary social studies lesson about human needs and wants. She created a missing voice monologue for the steer skull from “Through Georgia’s Eyes” which she infused into the lesson. The 3rd grade teacher had 20 students. There were 8 students of color and 5 of them were English Language Learners. Her lesson was about “American Symbols.” She used the missing voice monologue for the integration process. The character for her monologue was the Statue of Liberty. The 9th grade teacher had 20 students in his class. There were 9 boys and 11 girls. There were also 6 students of color. His interdisciplinary social studies lesson was about “World Peace.” He wrote a monologue about the life of Mahatma Gandhi and performed it for and with the students.

I began the analysis after I had collected all the data in my possession. I sorted the lesson plans, reflection paper, video clips, photographs, monologue scripts and samples of student work according to grade levels. I examined all the written texts, watched the videos, scrutinized the photographs and took notes. I followed the approach recommended by Bogdan & Biklen (1992) to code the data according to emerging patterns. Lincoln & Guba (1985) recommend triangulation of data to sustain credibility of the study. The multiple sources from which I generated the data enabled me to compare and contrast all data while doing the analysis to validate the credibility of the study.

## **6.Results**

Four thematic strands emerged from the analysis. The first one showed that monologue enactment was a hook. There was consensus among all the teachers about this. The video clips and photographs also provided additional validation. Regardless of the age differences of students in each class, students in all classes were found to be excited. They were also riveted to the unfolding monologue performance. The teacher had no behavior issues to deal with. In her reflection she stated:

My solo drama made an impact on the children. I have a class of fourteen very young, very talkative, and active five and six year olds. They were excited and listened carefully. There were many hands up showing their eagerness to ask me “Rosa Parks” questions.

All four teachers also reported that students kept asking them about when they would do the drama again. These appeals were made several days after the lessons were over.

The second strand was student’s content knowledge and study habit. There was strong indication from all the class experiences that students’ interest in the lessons went up. So was the level of student focus and knowledge retention. There was noticeable depth to what students said and did especially grades 3, 4, and 9 students. Three things appeared to be the contributive factors: 1) the hot seating experience which gave voice to the students to ask questions or express their feelings, 2) variety of age appropriate creative arts activities and group projects, and 3) the reflection activities. The level of questioning was not deep enough from the kindergarten kids. But they were more task oriented. The 3rd grade teacher commented:

My monologue and hot seat experience hooked the class into this new unit of study. When I immediately returned to class in my own clothes, students were anxious to tell me what they remembered from our “visitor.” Following my monologue presentation, students wrote observation notes in their journals recording

what they had learned during the presentation. Students drew pictures of the statue, labeled parts on their drawings, made notes, clarified with their neighbors and table groups ... wrote personal opinion of who had come to class that day.

The third strand was inspiration and empathetic awakening. Poignant evidence was available from all four classes that students' hearts and emotions were touched profoundly as they interacted with characters. There was an instance in the video when a kindergarten kid could not hold back his feelings. That was when he heard that the bus driver was not going to let Rosa Parks get on the bus because she was black. He screamed with sincerity, "Oh, that's not fair!" Students in the 9th grade class were asked to write a letter to Gandhi about their impressions of his life. Below is an excerpt from one of the students:

Dear Gandhi,

I am writing this letter to you because I would like to remind you of what you did and also ask you a few questions. So here I go! ... Then later in 1915 you returned to India. To be moving around all the time I would like to know how your wife is feeling about this. Later in September 1924 you started a 21-day fast for Hindu-Muslim Unity. Now that sure makes a statement but isn't that very bad for your health? Also, how did that feel for you? I would like to ask you how could you bear to be in jail for all that time and more than once? I could never do that. You are very brave. I look up to you. I wish I could make a change in the world like you did.

Throughout all of the brave things that you have done, I look up to you and again I wish that I could do something even close to what you have done throughout out your life. Fasting and stuff must have been hard. Although you got through it all although it was all for the better of the people. Thank you for all that you have done.

Sincerely,  
Signed

The last strand was about family and community participation. With the exception of the 9th grade class, students in the three other classes had opportunities to interact with parents and community members. The kindergarten teacher had her integrated solo drama and social studies lesson during the Martin Luther King Week. She invited the parents of students to join the kids for an anchor presentation in her class. This was followed by discussion about friendship and acceptance with parents, family members and the kids. The teacher was the one who facilitated the discussion. Grade three students did an immigration project. They had to interview parents, a family member or someone in the community about how they got into the US. They were asked to present their findings in class. English Language Learners were allowed to do the interview with their parents in their native language. Grade four students did fund raising in collaboration with their teacher to support Home-Water for South Sudan a non-profit organization. The class teacher reported that:

It was the children who decided to do the fund raising to help provide clean drinking water for Sudan. Students collected change from parents, teachers, community members and gave of themselves.

## **7. Discussion and Conclusion**

The results of the study reveal that solo drama has the potential to stimulate active learning in social studies. The novelty about the double role of the teacher as a performer and facilitator does the magic. It sparks curiosity in students. It also sets the tone for strong motivation to engage students in the learning process. The level of collaboration between teacher and students; and among students themselves could be high especially during project-based activities. Students are able to demonstrate their academic knowledge through oral, written and creative projects instead of regurgitating isolated facts. They can synthesize information from the monologue performances, the assignments, collaboration with colleagues, and interactions with family and community members to acquire deeper understanding of concepts, issues, and values. The findings also show that solo drama thrives as a strong educational tool only if it is purposefully integrated into the curriculum with the support of other arts forms and creative projects. However, its efficacy for classroom learning could diminish if it is used solely for performance sake – that is, to entertain. This should not be the goal.

Another important discovery from the study is that the process enables students to see real nexus between home, school, and community values. I feel that when students' hearts and souls are touched they could go to any length to work towards the improvement of the lives of those who need help locally, nationally and globally. This aligns with the social action and responsible citizenship expectations of schools enshrined in the National Council for Social Studies (NCSS, 2010) report. It is also clear that teachers who receive the right preparation in

solo drama for classroom education could also contribute to raising the stakes for students to be engaged learners.

According to Jones, Valdez, Nowakowski, & Rasmussen (1994), the hallmark for meaningful and engaged learning are: interactive learning, asking questions, partnership between teacher and students to construct knowledge, problem solving, collaboration with people in school, family, community and the world as well as application of academic knowledge in real life. Erikson (2014) also draws attention to social action projects by students to affect change as an important criteria for engaged learning. By comparing and contrasting these claims, I feel solo drama has some promise for the field. First of all, the study has its limitations. But the modest insight that it has provided about the efficacy of the medium is vital. It would attract further research into solo drama pedagogy in future by educational researchers. Consequently, classroom teachers and teacher educators would begin to adopt it for making social studies a pleasant, relevant learning experience for students.

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# Üreme bilgisi dersinin öğrencilerde oluşturduğu stres ve öğrenme üzerine etkileri

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## Özet

Sağlık bilimleri alanında eğitim alan ve ileride hekim ya da yardımcı sağlık elemanı olarak çalışacak öğrencilerin üreme bilgisi ile ilgili derslerde utanma ve çekinmeye bağlı stres ve motivasyon bozukluğu yaşamaktadırlar. Çalışmanın amacı, üreme ile ilgili derslerde öğrencilerin yaşadıkları utangaçlık hatta stres seviyesi hakkında bilgi edinmek ve bu stresin öğrencilerin derse motivasyonunu ne yönde etkilediğini tespit etmektir.

Bu araştırmada tarama modeli kullanılmıştır. Veri toplama aracı olarak kullanılan anket, Selçuk Üniversitesi Karapınar Meslek Yüksekokulu Laborant ve Veteriner Sağlığı programı öğrencileri ile Veteriner Fakültesi öğrencilerine uygulanmıştır. Toplam 30 adet sorunun yer aldığı anketin ölçek kısmı 5’li likert tipi tutum sorularından 18 soru ve sosyo-demografik olgularla ilgili 12 sorudan oluşmaktadır. Çalışmada 170 anket veri analizine uygun görülmüştür. Elde edilen verilerin SPSS 20 paket programı ile analiz edilmiştir. Çalışma istatistiki anlamlılık düzeyi 0.05 olarak kullanılmıştır.

Cinsiyet açısından ele alındığında, Anatomi ve Üreme Bilgisi derslerinde ilk haftalarda kız öğrencilerin erkek öğrencilere oranla daha fazla stres yaşadığı ve utandığı belirlenmiştir ( $\chi^2=26.665$ ,  $df=4$ ,  $p<0.05$ ). Üreme Bilgisi dersinde yapılan çiftlik uygulamaları ve canlı hayvan muayeneleri kızlarda erkeklere oranla daha çok stres oluşturduğu tespit edilmiştir ( $\chi^2=17.490$ ,  $df=4$ ,  $p<0.05$ ). Üreme dersinde görsel ve nesnel materyal kullanımı da erkeklere göre kız öğrencilerde daha çok strese neden olmuştur ( $\chi^2=10.79$ ,  $df=4$ ,  $p<0.05$ ).

Üreme Bilgisi derslerinde, öğrencilerin ilk haftalardaki dersin içeriği açısından stres yaşadıkları hatta belirli bir süre derse motive olamadıkları, zaman içinde yaşanan stres ve utanma duygusunun azaldığı, bu derslerin içeriğinin mesleki gereklilik olduğu kanaatinin oluştuğu tespit edilmiştir. Kız öğrencilerin erkek öğrencilere göre daha yüksek oranda stres yaşadıkları, derslerde cinsel çağrışımlar içeren görsel ve nesnel materyallerin gösterilmesi stres oluşturmadığı tam tersine öğrenmeyi kolaylaştırdığı, çiftlik ziyaretlerinde canlı hayvan muayene ve uygulamalarının ise özellikle kız öğrencilerde stres oluşturduğu belirlenmiştir.

**Anahtar kelimeler:** Üreme, öğrenme, motivasyon, stres

## The Effects of Reproduction Knowledge Course in The Stress On Students and in Learning

### Abstract

In the courses related to the reproduction knowledge of students who study in the field of health sciences or work as a physician or an allied health staff, it is lived the disorder of stress and motivation that is tied to shame and hesitation. The purpose of the study is to learn about the level of shame and even of stress that students live during the courses related to reproduction and determine in what direction this stress affects the motivation of students in the course. In this study, the screening model was used. The questionnaire used as a data collection tool was administered to the students of Faculty of Veterinary and the students of the Programme for Health of Laboratory Assistant and Veterinary of Karapınar Vocational High School of Selçuk University. The type of scale of the questionnaire in which is totally 30 questions is five-likert scale, and it consists of 18 questions related to the attitude questions and 12 questions related to socio-demographic phenomenon. In the study, 170 surveys were eligible to data analysis. The data obtained was analyzed by the SPSS 20. The statistical significance level of the study was used as 0,005.

When considered in terms of gender, it has been determined that female students shame and experience stress more than male students in the first weeks during the courses of Anatomy and Reproduction Knowledge ( $\chi^2=26.665$ ,  $df=4$ ,  $p<0.05$ ). It has been found that the farm practices of livestock and the examination of living animals in the course of Reproduction Knowledge lead more stress for girls than boys ( $\chi^2=17.490$ ,  $df=4$ ,

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p<0.05). The use of visual and objective materials in the course of Reproduction has caused more stress for female students compared to males ( $\chi^2=10.79$ ,  $df=4$ ,  $p<0.05$ ).

In the courses of Reproduction Knowledge, it has been determined that students experience stress in the first weeks with regard to the content of the course, even they cannot motivate for a definite time, the feeling of stress and embarrassment experiencing in time decreases, and it is reached a conclusion the content of these courses is a professional requirement. Additionally, it appears that female students experience more stress than male students do, the showing of visual and objective materials containing sexual connotations in the classes does not cause stress but facilitates learning on the contrary, and the examining and practicing of living animals during the farm visits particularly lead stress for female students.

**Keywords:** Reproduction, learning, motivation, stress

## 1.Giriş

Derslerin eğitim-öğretim süreci içerisinde anlaşılıp anlaşılmadığı konusunda zaman zaman öğrencilerden geri bildirimler alınması, uygulanan eğitim-öğretim programlarının içerik ve yöntemi ile ilgili geleceğe yönelik düzenleme yapılmasında önemlidir. Çünkü eğitimle ilgili yapılanmada uygulanması ön görülen programların geçerli ve nitelikli olabilmesi için iki yönlü iletişim kurulması zorunluluğu vardır ve başarılı bir eğitim programı hazırlanmasında öğretmen kadar öğrenci de önemlidir. Bu nedenle kazanılan edininlerin paylaşılması ve sorunlara çözüm bulunmasında etkili iletişim kurulması, eğitim yaşamında başarılı olmayı kolaylaştıran bir faktördür (Boud,1988, Kunt 2014).

Stres son yıllarda çok kullanılan bir kavram olmaya başlamıştır, fakat bu sözcüğe verilen anlamlar kişiden kişiye değişmektedir. Stres, duygusal bir durumu ifade ettiği için anlamının açıklanması güçtür. Bununla birlikte, bazı insanlar stresi, yarattığı migren, yüksek tansiyon, ülser, vb. hastalıklardan yola çıkarak tanımlamaktadırlar (Engin 2013). Bazıları ise insanlar arasındaki iletişimsizlik, fazla iş, görev değişiklikleri ve hızlı değişim gibi stresi artıran değişkenler üzerinde durmaktadırlar (Balaban, 2000). Stresin farklı alanlara göre çok çeşitli tanımları yapılmakla birlikte, genel olarak “organizmanın tehlike olarak algıladığı çeşitli içsel ve dışsal uyaranlara verdiği otomatik tepki” olarak ifade edilebilir. Burada dikkat edilmesi gereken nokta, öğretimin doğasında daima stres olduğu bundan bütünüyle kaçınmanın mümkün ve doğru olmadığıdır (Engin 2013). Diğer yandan düşük düzeydeki stresin, öğretmenleri ve sunum yapanları yeni çözüm yolları aramada motive edebileceği, dolayısıyla zararlı değil, yararlı olduğu ifade edilmektedir. Ancak yüksek düzeyli stresin zararlı olduğu belirtilmektedir (Ataklı, 1996; Nagel ve Brown, 2003).

Sağlık alanında eğitim veren okullarda gerek hekim seviyesinde gerekse yardımcı sağlık elemanı seviyesinde olsun başta Anatomi, Fizyoloji, Üreme Bilgisi, Suni Tohumlama olmak üzere birçok derste penis, vagina, çiftleşme, dölleme, suni tohumlama gibi terimler sıkça kullanılmaktadır. Günlük hayatta bu terimlerin hiç kullanılmadığı ya da ayıp olarak değerlendirildiği düşünüldüğünde öğrenciler ilk derslerde farklı hislere kapılmakta ve derse motive olamamakta hatta strese girebilmektedir. Bu çalışmada Selçuk Üniversitesi Veteriner Fakültesi ve Karapınar Meslek Yüksekokulu / Laborant ve Veteriner Sağlığı Programı öğrencilerinin gerek Anatomi gerekse Üreme bilgisi derslerinde yaşadıkları stres veya utanma duygularını anlamaya yönelik bir anket çalışması yapılmıştır.

Çalışmanın amacı, söz konusu derslerde yaşları da dikkate alındığında öğrencilerin yaşadıkları utangaçlık hatta stres seviyesi hakkında bilgi edinmek, bu stresin öğrencilerin derse motivasyonunu ne yönde etkilediğini tespit etmektir. Ayrıca öğrencilerin gerek Anatomi dersine gerekse Üreme Bilgisi dersine bakışlarını değerlendirmek, kız ve erkek öğrencilerin bu derslerde yaşadığı olası stres ve utanma duygularında herhangi bir farklılık olup olmadığını tespit etmek amaçlanmıştır. Ankete katılan öğrencilerin öğrenim gördüğü bölüm ve meslek ile ilgili yaklaşımlarının belirlenmesi, bölüm tercihinde etkili olan tercih değişkenleri ve bu değişkenlerde kız ve erkek öğrencilerde farklılaşma olup olmadığının belirlenmesi amaçlanmıştır.

## 2. Yöntem

Bu başlık altında araştırma modeli, evren-örneklem, veri toplama araçları ile araştırmada kullanılan analiz tekniklerine ve araştırmanın geçerlilik ve güvenilirliğine ilişkin bilgilere yer verilmiştir.

### 2.1. Araştırma Deseni

Bu araştırmada tarama modeli kullanılmıştır. Tarama modeli problem olarak algılanan olgunun mevcut durumu ortaya konmaya çalışılmıştır. Araştırma tarama modeli çerçevesinde ele alınmış ve buna göre veri toplanmıştır. Veri toplama aracı olarak kullanılan anket, 2013-2014 Eğitim Öğretim yılında Selçuk Üniversitesi Karapınar Meslek Yüksekokulu Laborant ve Veteriner Sağlığı I ve II. Sınıf öğrencileri ile Veteriner Fakültesi 4. Sınıf öğrencilerine uygulanmıştır. Çalışmada 184 anket uygulanmış ve 170 anket veri analizine uygun görülmüştür. Veri toplama zamanı ise 2014 Nisan ayıdır. Elde edilen verilen SPSS 20 paket programı ile analiz edilmiştir. Çalışma istatistikî anlamlılık düzeyi 0.05 olarak kullanılmıştır.

Veri toplama aracı olarak kullanılan anket alanla ilgili uzmanların görüşleri doğrultusunda oluşturulmuştur. Bununla ilgili olarak veteriner fakültesi ilgili anabilim, sosyoloji ve eğitim bilimlerinden uzmanlarla ölçme aracının iç tutarlılığı test edilmiş ve bunun sonucunda uygulama yapılmıştır. Daha sonra 50

anketten oluşan bir öntest uygulanmış ve öntest sonucu olarak anketlerde revizyona gidilmiş ve böylece anket uygulamaya tabi tutulmuştur. Toplam 30 adet sorunun yer aldığı anketin ölçek kısmı 5’li likert tipi tutum sorularından 18 soru ve sosyo-demografik olgularla ilgili 12 sorudan oluşmaktadır. Ankette yer alan ölçek tutum sorularının güvenirlik katsayısı yüksektir (Cronbach’ alpha= .694).

Çalışmada, sosyo-demografik özellikler için frekans analizi, değişkenler arasında ilişkiyi ortaya koymak için crosstabs tekniği kullanılmıştır. Ölçek alt boyutları için faktör analizi, alt boyutların diğer değişkenlerle ilişkisinde iki değişkenli veriler için t testi, ikiden fazla değişkenli veriler için onewayanova( f testi) kullanılmıştır.

**Tablo 1. Öğrencilerin sosyo- kültürel özellikleri**

		Sayı	Oran %
Öğrencilerin Okulu Fakülte/Yüksekokul	Lab. Vet. Sağlığı 1.sınıf	38	22.4
	Lab. Vet Sağlığı 2.sınıf	42	24.7
	Veteriner Fak. 4.sınıf	90	52.9
	Toplam	170	100
Öğrencilerin Cinsiyeti	Kadın	72	42.4
	Erkek	98	57.6
	Toplam	170	100
Öğrencilerin Yaş Dağılımı	17-21 yaş aralığı	9	40.6
	22-26 yaş aralığı	88	57.7
	27≤ yaş aralığı	3	1.7
	Toplam	170	100
Öğrencilerin Doğum Yeri	Köy	68	40.0
	Kasaba	6	3.5
	İlçe	36	21.2
	Şehir	25	14.7
	Büyükşehir	35	20.6
	Toplam	170	100
Öğrencilerin En Uzun Yaşadığı Yer	Köy	16	9.4
	Kasaba	8	4.7
	İlçe	51	30.0
	Şehir	38	22.4
	Büyükşehir	57	33.5
	Toplam	170	100
Ailenin Gelir Seviyesi	Alt	17	10.0
	Orta alt	59	34.7
	Orta	48	28.2
	Orta üst	31	18.2
	Üst	15	8.8
	Toplam	170	100
Ebeveynlerin Eğitim Durumu (Annenin eğitimi)	Okuryazar değil	15	8.8
	Okuryazar, ilkokul mezunu	16	9.4
	değil	90	52.9
	İlkokul mezunu	15	8.8
	Ortaokul mezunu	22	12.9
	Lise mezunu	12	7.1
	Üniversite/Yüksekokul mezunu	170	100
	Toplam		
Ebeveynlerin Eğitim Durumu (Babanın eğitimi)	Okuryazar değil	1	0.6
	Okuryazar, ilkokul mezunu	6	3.5
	değil	60	35.3
	İlkokul mezunu	32	18.8



Ortaokul mezunu	41	24.1
Lise mezunu	30	17.6
Üniversite/Yüksekokul mezunu	170	100.0
Toplam		

### 3. Bulgular

Çalışma grubunu 2013-2014 Eğitim Öğretim yılında Selçuk Üniversitesi Karapınar Meslek Yüksekokulu Laborant ve Veteriner Sağlığı I ve II. Sınıf öğrencileri ile Veteriner Fakültesi IV. sınıf öğrencileri oluşturmuştur.

Tablo 1’de görüldüğü gibi araştırmanın saha uygulamasına Laborant ve Veteriner Sağlığı Programı I. ve II. sınıftan, Veteriner Fakültesi IV. Sınıftan toplam 170 öğrenci katılmıştır. Ankete katılan öğrencilerin % 42.4’ü (72) kız öğrencilerden, % 57.6’sı (98) ise erkek öğrencilerden oluştuğu görülmektedir. Öğrencilerin yaş dağılımları incelendiğinde, 17-21 yaş aralığında 59 (%40.6), 22-26 yaş aralığında 88 (%57.7) ve 27 yaş ve üzerinde ise 3 (%1.7) öğrenci bulunduğu belirlenmiştir.

Ankete katılan öğrencilerin sosyo-kültürel seviyelerini belirlemek amacıyla doğum yerleri ve şu ana kadar en uzun süre ile yaşadıkları yer sorulmuş ve cevapları köy ile büyükşehir aralığında yerleşim yerleri olarak değerlendirilmiştir. Öğrencilerin yaklaşık % 45 inin köy ve kasaba doğumlu olduğu, şehir ya da büyükşehir doğumluların oranı ise yaklaşık % 5 olarak belirlenmiştir. Buna karşılık bugüne kadar en uzun süre yaşadığı yer sorusuna verdikleri cevap ise % 55.9 gibi yarısından fazla bir oranla şehir ve büyükşehir kökenli olduğu görülmektedir. Ailenin gelir seviyesini belirlemek amacı ile sorulan sorulara verilen cevaplar, alt, orta alt, orta, orta üst ve üst seviye olarak kategorize edilmiştir. Aylık geliri 0-500 arası olanlar alt, 500-1500 arası orta alt, 1500- 2500 arası orta, 2500-4000 arası orta üst ve 4000 Lira üzeri olanlar ise üst olarak değerlendirildi. Buna göre ankete katılan öğrencilerin yaklaşık %35 i ailesinin gelirini orta altı, % 28 i orta, % 18 i ise orta üstü olarak cevaplamışlardır. Geliri üst seviye olarak cevap veren öğrenci sayısı % 10 un altında kalmıştır.

Tablo 1’de ebeveynlerin eğitimi belirlemek amacı ile sorulan sorulara verilen cevaplardan elde edilen sonuçlara göre babaların % 35 i, annelerin % 53 ü ilkökul, babaların % 24’ü, annelerin % 13’ü lise, babaların yaklaşık % 18’i, annelerin ise yaklaşık % 7’ si Üniversite /Yüksekokul mezunu olarak belirlenmiştir. Ebeveynlerin mesleki durumlarını belirlemek amacı ile sorulan sorulara verilen cevaplardan elde edilen sonuçlara göre, annelerin % 87,1’sinin ev hanımı olduğu görülmektedir. Bunun dışında % 4,7’si devlet memuru, % 3,5’i emekli, % 2,4’ü devlet ya da özel sektör çalışanı % 2,4 ‘ü ise vasıfsız hizmetli olarak tespit edilmiştir. Babalarının mesleki dağılımına bakıldığında ise, % 25,9’unun esnaf, %19,4’ünün emekli, %12,9’unun devlet memuru, %11,8’inin çiftçi olduğu görülmektedir.

Ankete katılan öğrencilerin % 75’i okuduğu bölümü kendi isteği ile bilinçli olarak, %10,6’sı ailesinin yönlendirmesi ile % 4,1’i öğretmeninin tavsiyesi üzerine, %10,6’sı ise tesadüfi olarak tercih etmişlerdir.

Cinsiyet açısından ele alındığında, Anatomi ve Üreme Bilgisi derslerinde ilk haftalarda kız öğrencilerin erkek öğrencilere oranla daha fazla stres yaşadığı ve utandığı belirlenmiş ( $\chi^2=26.665$ ,  $df= 4$ ,  $p<0.05$ ) ve istatistiki olarak anlamlı bulunmuştur. Diğer taraftan erkek üreme sistemi anlatımı ile cinsiyet arasında anlamlı farklılaşma bulunmuştur ( $\chi^2=20.928$ ,  $df= 4$ ,  $p<0.05$ ). Kız öğrenciler daha çok utanma hissi ifade ederken erkekler ise bu olguya katılmadıkları yüzdelik olarak çoğunlukla ifade etmişlerdir. Dişi üreme sistemi anlatılırken de yukarıda sonuçlara benzer şekilde kızlar daha çok utanma hissi belirtirken erkeklerde bu oran düşük kalmıştır. Sonuç istatistiki olarak anlamlı farklılaşma oluşturmuştur ( $\chi^2=21.915$ ,  $df= 4$ ,  $p<0.05$ ). Bu sonuçlara göre Üreme Bilgisi dersinin içeriğinden kız öğrencilerin özellikle ilk derslerde olmak kaydı ile erkek öğrencilere oranla daha fazla etkilendiği ve stres yaşadığını söylemek mümkündür.

Üreme Bilgisi dersinde yapılan çiftlik uygulamaları ve canlı hayvan muayenelerinin ise (suni tohumlama, suni vagina ile sperma toplanması, rektal muayene vs.) kızların %18’inde, erkeklerin % 7.2’sinde stres oluşturduğu tespit edilmiştir ( $\chi^2=17.490$ ,  $df= 4$ ,  $p<0.05$ ). Üreme dersinde görsel ve nesnel materyal kullanımı ve izlenmesinde öğrencileri cinsiyet açısından farklılaştığı gözlenmiştir ( $\chi^2=10.79$ ,  $df= 4$ ,  $p<0.05$ ). Kız öğrenciler erkeklere göre daha çok stres yaşamaktadırlar.

Laborant ve Veteriner Sağlığı I. Sınıf öğrencilerinin % 26,4’ü dersin hocası kadın olursa kendimi daha rahat hissederim cevabını vermiş, toplamda ise kız öğrencilerin % 41,6’sı erkek hoca ders anlatırken kendini rahat hissetmediğini ifade etmiştir.

Üreme bilgisi dersini almış olmak bu bilgilere ve donanımına sahip olmak Laborant ve Veteriner Sağlığı I ve II. sınıf öğrencilerinde kendimi şanslı hissediyorum diyenler oldukça yüksek bir oranda olmasına rağmen, Veteriner Fakültesi IV. sınıf öğrencileri için bu oran daha düşük kalmıştır ( $F=4.73$ ,  $p=0.10$ ,  $p<0.05$ ).

Stres tutumu ile ilgili ölçeğin alt boyutlarına bakmak için yapılan faktör analizinde; öz değerleri 1’in üzerinde ve açıklama yüzdesi %5 üzerinde olan üç faktör (üç alt boyut) tespit edilmiştir. Faktörlerin toplam

açıklama varyansı % 52'dir. Faktör KMO'su, 767'dir. Faktörlerin Barlett's testi= 1354,528 ve sig.= 0.00'dır (Tablo 2.).

Birinci alt boyut, derslerden etkilenenler boyutu olup 6 itemden oluşmuştur. En yüksek faktör yükü 0,830 ile dişi üreme sistemi anlatılırken daha çok utandığımı hissediyorum, alt boyutun açıklama oranı % 22.987'dir.

İkinci alt boyut, mesleki yeterlilik-gereklilik boyutu olarak tanımlanmakta ve 7 itemden oluşmaktadır. Bu boyutun en yüksek faktör yükü ise 0, 744 ile Üreme Bilgisi Dersinde görsel ve nesnel materyalleri izlemek dersi öğrenmemi kolaylaştırdı ifadesi olmuştur. Alt boyutun açıklama oranı % 18.50'dir.

Üçüncü alt boyut ise, başlangıç aşamasındaki utanma, strese girme veya derse motive olmakta zorlanma boyutu olup toplam 3 itemden oluşmaktadır. Bu boyutun en yüksek faktör yükü 0,721 ile Üreme dersini ilk kez dinlediğimde derse motive olmakta zorlandım olmuştur. Alt boyutun açıklama oranı % 10.51'dir.

**Tablo2. Stres Tutumu ile ilgili alt ölçekler**

Rotated Component Matrix <sup>a</sup>			
	I. Alt Boyut	II. Alt Boyut	III. Alt Boyut
Dişi üreme sistemi anlatılırken daha çok utandığımı hissettim	,830		
Erkek üreme sistemi anlatılırken daha çok utandığımı hissettim	,826		
Erkek anatomisi ve üreme bilgisi anlatılırken daha çok stres yaşıyorum	,813		
Dişi anatomisi ve üreme bilgisi anlatılırken daha çok stres yaşıyorum	,799		
Üreme dersinde çiftlik uygulaması yaptığımda /izlediğimde strese giriyordum	,695		
Üreme dersinde görsel ve nesnel materyalleri izlediğimde strese giriyorum	,694		
Üreme bil. Dersinde görsel, nesnel, materyalleri izlemek öğrenmemi kolaylaştırdı		,744	
Üreme bilgisi dersini almış olmakla kendimi şanslı hissediyorum		,743	
Üreme bilgisi dersinin içeriği öğrenme motivasyonumu artırdı		,732	
Üreme bilgisi dersinde elde ettiğim bilgilerle kendimi daha donanımlı hissediyorum		,722	
Üreme dersinde çiftlik uygulaması dersi öğrenmemi kolaylaştırdı		,578	,375
Şimdi üreme dersinde stres yaşamıyorum ve mesleki bir gerekliliktir		,451	,400
Üreme bilgisi dersinin hocası erkek olursa kendimi daha rahat hissederim		,349	
Üreme dersini ilk kez dinlediğimde derse motive olmakta zorlandım	,395		,721
Üreme dersini ilk dinlediğimde içeriğinden dolayı strese girdim	,468		,632
Üreme bilgisi dersinin hocası kadın olursa kendimi daha rahat hissederim	,420		-423

Alt boyutlar ile deneklerin en çok yaşadığı yer ( $p>0.05$ ), ailenin gelir durumu ( $p>0.05$ ), anne baba eğitim ( $p>0.05$ ), anne-baba mesleği ( $p>0.05$ ), ve meslek seçimin etkili olarak faktörlerde istatistiki olarak anlamlı bir farklılaşma bulunmamaktadır.

#### 4. Sonuç

Üreme Bilgisi ve Anatomi derslerinde, öğrencilerin ilk haftalardaki dersin içeriği açısından stres yaşadıkları hatta belirli bir süre derse motive olamadıkları, zaman içinde yaşanan stres ve utanma duygusunun azaldığı, bu derslerin içeriğinin mesleki gereklilik olduğu kanaatinin oluştuğu tespit edilmiştir. Kız öğrencilerin erkek öğrencilere göre daha yüksek oranda stres yaşadıkları, derslerde cinsel çağrışımlar içeren görsel ve nesnel materyallerin gösterilmesi stres oluşturmadağı tam tersine öğrenmeyi kolaylaştırdığı, çiftlik ziyaretlerinde canlı hayvan muayene ve uygulamalarının ise özellikle kız öğrencilerde stres oluşturduğu belirlenmiştir.

Üreme Bilgisi dersi hocasının cinsiyeti, ailenin gelir durumu, öğrencinin kırsal ya da kentsel kökenli olmasına göre stres oluşması yönünde anlamlı bir farklılaşma görülmemiştir.

Sağlık alanında eğitim veren okullarda (Tıp fakültesi, Veteriner Fakültesi, Hemşirelik Yüksekokulu, Veteriner sağlık tekniker ve teknisyeni yetiştiren okullar gibi) özellikle üreme ile ilgili derslerle ilk karşılaşan öğrencilerin yaşayacakları çekimserlik, utangaçlık ve stres duyguları dikkate alınarak eğitimin planlanması, eğitim ve öğretimde kaliteyi arttıracakı düşünülmektedir.

## 5. Kaynaklar

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# ViRo – the online tool for the networking education

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## Abstract

Education of IT technology experts is not limited to providing theoretical knowledge, rather, it should also facilitate obtaining practical hands-on experience. There is a range of ways to support the acquisition and reinforcement of skills and fundamental knowledge in the design, implementation and management of computer networks. The article provides the view and characteristics of a new didactical supporting tool ViRo (the Virtual Router) developed by the Department of InfoCom Networks of Faculty of Management Science and Informatics, University of Zilina. The tool will allow students to deepen their practical configuration skills in designing and management of computer networks and network elements in an online internet-accessible environment.

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*Keywords:* education; computer networks; knowledge; web tool

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## Introduction

Demands on the knowledge level of network professionals are increasing not only from the theoretical point of view, but especially in terms of practical knowledge. At our Department of InfoCom Networks we educate IT networking professionals and we reflect these requirements. We want our students to be prepared both theoretically and practically, and be able to translate their theoretical knowledge into practical skills in the field. Our courses are practically oriented and are supported by using modern laboratories equipped with the necessary and up-to-date professional technology. For this reason, networking courses are highly sought for by our students. However, this high interest results into excessively high utilization of laboratories, forcing us to strictly observe the schedule of practical laboratory exercises where we are limited to a few hours per week. As a result, it is difficult to provide students with laboratory overtime for deepening practical configuration skills beyond the scope of the lesson or to fully understand the theoretical and practical aspects of network communication.

One of ways to circumvent the restriction of limited access to real devices is the use of supporting tools. These tools should be available not only during main classroom exercises but also through other voluntary activities supported and available beyond the student laboratory exercises. To support the activities leading to the acquisition and reinforcement of skills and fundamental knowledge in the design, implementation and management of computer networks, there are a number of tools available (simulators or emulators). We should mention for example Cisco Packet Tracer (PT), Boson NetSim or Graphical Network Simulator (GNS3). All of them significantly differ in the functionality provided, from the simplest ones offering only very limited opportunities to the most complex one. They are designed to run on the user equipment (the student hardware) with different demands on computing power of the system, depending on the amount of network elements in the topology and the fidelity of the emulation/simulation. With these tools, the user can perform simulation of complex computer networks and their components on a single PC. The big disadvantage of these tools is usually only a partial ability to simulate the behavior and configuration of real network devices. Some simulation tools are charged, are usually platform-dependent, and put increased demands on the hardware of system on which they operate. For this reasons we have decided to develop a learning tool named Virtual Router (ViRo) which will allow us and our students to bypass limitations mentioned above, and on which the article is focused.

## Analysis of available solutions

Currently, there is available a number of applications in which the students can test their knowledge and practical skills. These tools are significantly different in functionality provided, from the simplest ones offering

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only very limited opportunities to the most complex. In the next section we mention only the most common and most complex solutions.

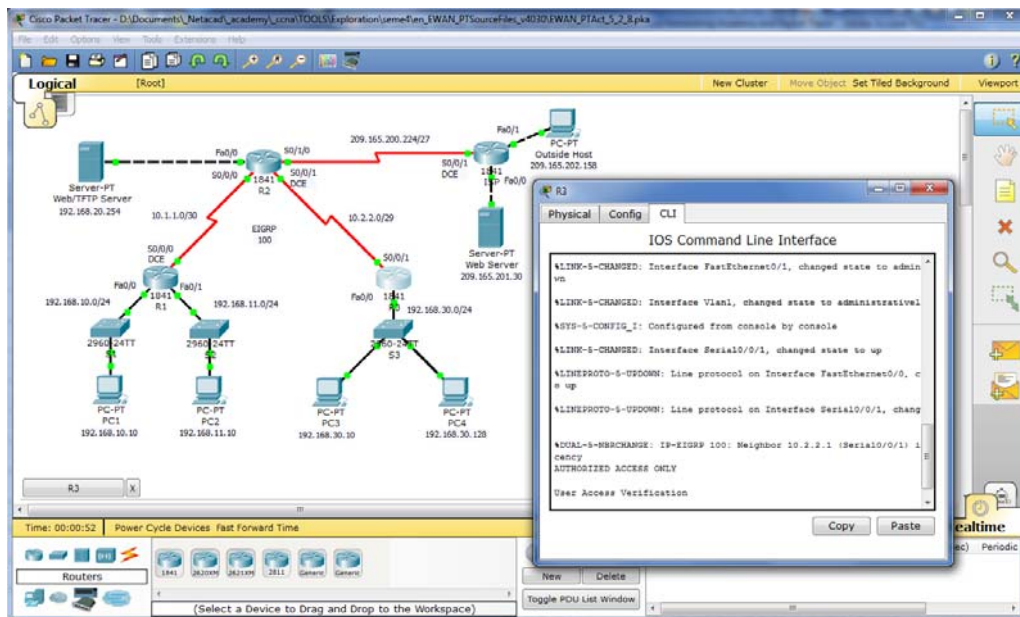


Fig. 1 Packet Tracer logical and configuration interface view

Packet Tracer (PT), developed by Cisco, is a self-paced, visual, interactive teaching and learning tool implemented in a form of computer networks simulation software primary focused at CCNA level. PT allows the creation of complex topologies and subsequent work with them. The tool is freely available to students of the faculties involved in the Cisco Networking Academy program. PT offers a unique combination of realistic simulation and visualization experiences, complex assessment and activity authoring capabilities, and opportunities for multiuser collaboration and competition. Packet Tracer excels in easy and intuitive control (see Fig. 1), the short time required to create the topology and the subsequent testing and configuration using a user-friendly graphical environment. PT disadvantage is its limited functionality. This is due to the fact that the program does not use a real image of the router operating system (IOS - Internetwork Operating System), but only functions implemented by application developers.

Boson Nets is a simulation program like PT. It consists of three parts. Boson Lab Navigator is focused on navigation in the list of generated configurations. Boson Network Designer enables to create custom network topologies. Boson NetSim is an application performing the actual simulation. The program focuses on simulation of the operations of Cisco devices. This simulator is primarily intended for those interested in CCNA and CCNP certification. The program provides a number of preconfigured network topologies, which can be solve by user, or the user can create his/her own topology using 47 different devices. The program also contains instructions and procedures for dealing with these topologies. Disadvantage of this program, the same as we mentioned for PT, is that it is only a simulator. The program does not offer the full functionality of the devices. Boson NetSim (see Fig. 2) lags behind the PT program, in visual aspect, operation and supported CLI (Command Line Interpreter) commands.

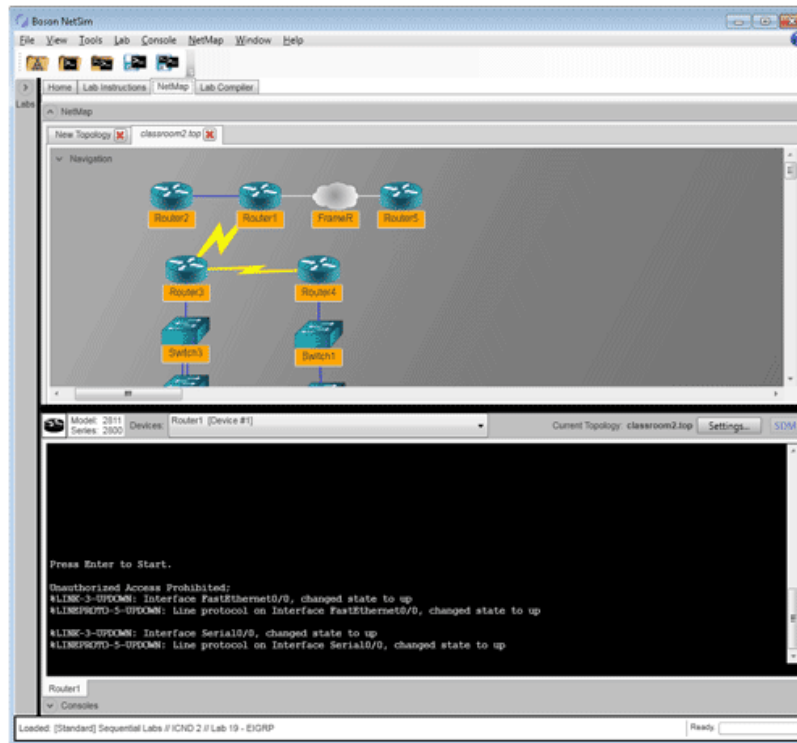


Figure 2. Boson NetSim

Another tool is open-source emulator of Cisco devices - Dynamips and its extension - Dynagen. Dynamips is multiplatform emulator of MIPS processor (MIPS - Microprocessor without Interlocked Pipeline Stages) and hardware environment. It was programmed by Christopher Fillot, originally for the purpose of emulation IOS (Internetwork Operating System) for Cisco series 7200 routers on the standard PC. The development and expansion concluded to its present form, when it supports in addition to 7200 series also 3600 series routers (models 3620, 3640 a 3660) , series 3700 (models 3725, 3745) and series 2600 (models 2610, 2650XM, 2691). Dynagen is a front-end for use with the Dynamips Cisco router emulator. It uses an INI-like configuration file to provision Dynamips emulator networks. It takes care of specifying the right port adapters, generating and matching up those pesky NIO descriptors, specifying bridges, frame-relay, ATM switches, etc. It also provides a management CLI for listing devices, suspending and reloading instances, determining and managing idle-pc values, performing packet captures, etc. The main difference between these instruments is that Dynamips does not simulate the functions of routers (like previous tools), but it does directly the emulation with Cisco IOS of real devices. The disadvantage is the need to have purchased IOS for devices that could be used by students, since it is not a free software. A suitable choice is to use the Graphical Network Simulator GNS3, which is a graphic interface for Dynamips and Dynagen (see Fig. 3). Its main advantage is that it combines a user-friendly environment and the look reminiscent of Packet Tracer with the possibilities offered by Dynamips.

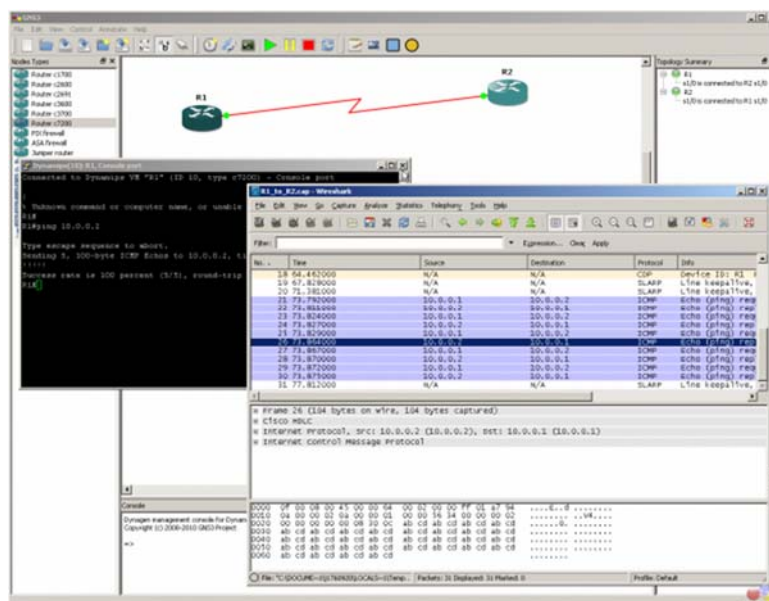


Figure 3. Graphical Network Simulator - Gns3

## Evaluation

All of the analyzed tools are designed to run on the user side – user equipment (the student). Comparing their features and functionalities for the needs of ViRo tool, Dynamips seems to be the best option. The reason for selecting this particular tool is that, unlike the other solutions it is the emulator, which provides functionality of real devices. It is platform independent and is able to function as a client/server application. Since the tool is demanding on the device's performance, we expect the integration of the tool into the client/server architecture, where the performance of the device (server on which the tool will be operated) we can guarantee, manage and secure.

## The virtual router tool

The goal of the ViRo tool is to provide on-line, internet-accessible educational tool that allows students, regardless of their software and hardware options, remote access to predefined network topologies running on an emulation server. The server will be implemented using freely distributed and platform independent simulator of computer networks. The ViRo tool would solve the problem of limited access to facilities in which students would be able to practice the configuration and management of devices in complex topologies. Students will be able to acquire and deepen practical configuration skills in the design and management of computer networks and other network components on-line via internet using this tool. The tool will be used to support networking courses of both levels of university education at the Faculty of Management Science and Informatics at the University of Žilina (Computer networks 1 and 2, Advanced routing, Network design 1 and 2).

ViRo tool will use client/server architecture. The tool will be available on-line via internet and offered through a web interface. Our main intention is to reuse existing open-source networking emulator and to provide students with access to this tool without imposing additional schedule demands. The tool will provide a number of functions available through the internet and a fully functional simulator of computer networks to its users. The tool will not require any additional installation of other software on the client computer. The tool will provide the user with a laboratory environment that emulates the real network topology student's work with on practical exercises during the networking courses. The solution offers a number of advantages, such as central management of network topologies and sets of exercises, management of operating systems for network elements, transfer of computing performance requirements of the simulations to a powerful and centrally managed network server, management of server load and use, process, personnel and time management, communication with real network, etc.

The general requirements that the ViRo tool should meet are the accessibility of the tool via internet, security, simple and user-friendly operation, and finally, the extensibility of the application with new elements. The whole system should provide the following functionality:

- The ability to log-in only for registered users and to prevent unauthorized use.
- User accounts management – create, delete, block accounts, create user groups and assign users, create access rules.
- The allocation of privileges to perform various activities within the application (creation of topologies, booking management, etc.).
- Creation of new topologies, or the use of existing ones.
- Editing, deleting and saving an existing topology.
- Saving unfinished configuration and the ability to retake and continue with the configuration later.
- Booking available topology for selected time slot of the week.
- Guaranteed maximum booking time.
- Administration of the booking (request, cancel, assign).
- Start/Stop a booked topology.
- Starting a topology without an appointment if the server has still available capacity.
- Managing system resources.
- Tracking the system.

In terms of the diversity of requirements for the system and its use, we assume three types of tool users – student, teacher and administrator. Each type of users should be able to use the functionality mentioned above, depending on authorization defined for their particular type (Fig. 4). Functionalities of the student type of user include:

- Edit personal profile.
- Access to the list of available and booked topologies within the week.
- Booking the chosen topology for a particular day and a particular time slot.
- Cancel booking before booked date.
- Start a booked topology and working in the particular time slot.
- Save unfinished work on topology.
- Restore saved unfinished topology.

The teacher has available all the options for the student, and in addition, teacher's options are supplemented by other options, such as:

- Create a new topology.
- Edit, delete, and enable/disable existing topology.
- Add new users.
- Edit and delete existing users.
- Assign user permissions and assign users to the user groups.
- View the list of currently running simulations and all upcoming bookings.
- Cancel a booking for some reason (eg. maintenance of the system), or stop running simulation.



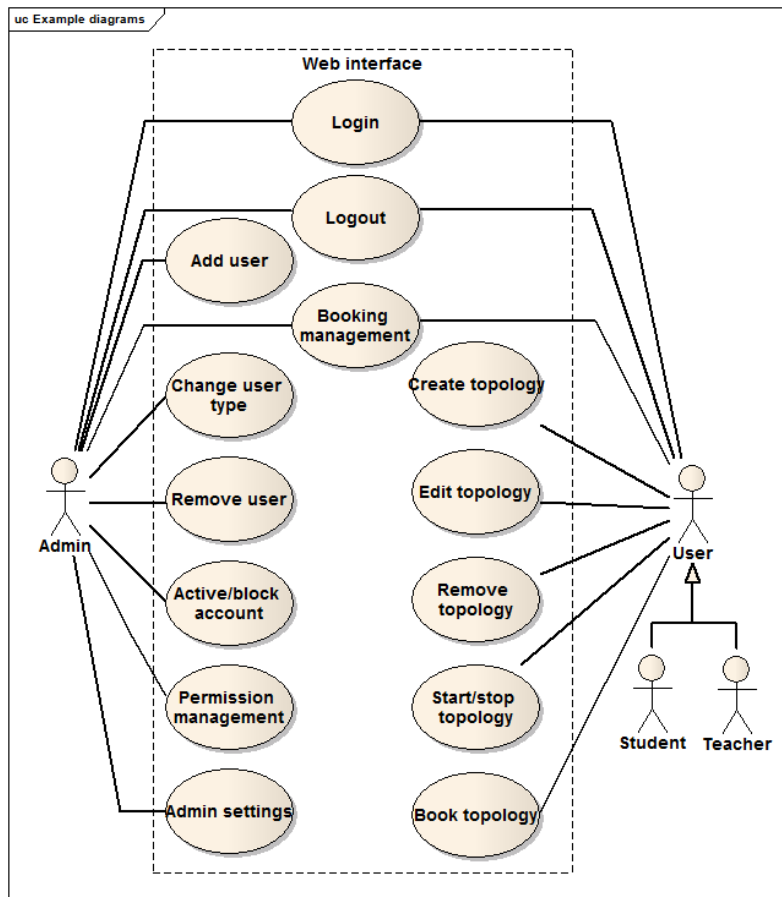


Figure 4 Use case diagram.

The administrator, as its name suggests, describes the user who will manage the whole system. Unlike the group Student/Teacher, an administrator does not use the system but provides the functionality and management for the smooth functioning of the tool. The basic tasks of the administrator will be:

- Manage web features.
- Manage content.
- Configure the portal.
- Manage users and permissions.
- Manage system resources and file system.
- Troubleshoot.
- System maintenance.

### Design and components of the ViRo tool

Based on theoretical and experimental analysis of functionalities and options for tool Dynamips/Dynagen, and taking into account all the requirements for the application resulting from the analysis, we propose the structure of the application ViRo as shown in Fig. 5. It is a solution built on the GNU/Linux operating system. In terms of memory consumption of the tool Dynamips, we will use a 64-bit version because of the possibility of using more than 4GB of RAM by a single process. The core of the application consists of Dynamips simulation program which will provide virtual device emulation. Dynamips will be extended by Dynagen extension to facilitate startup of topologies.

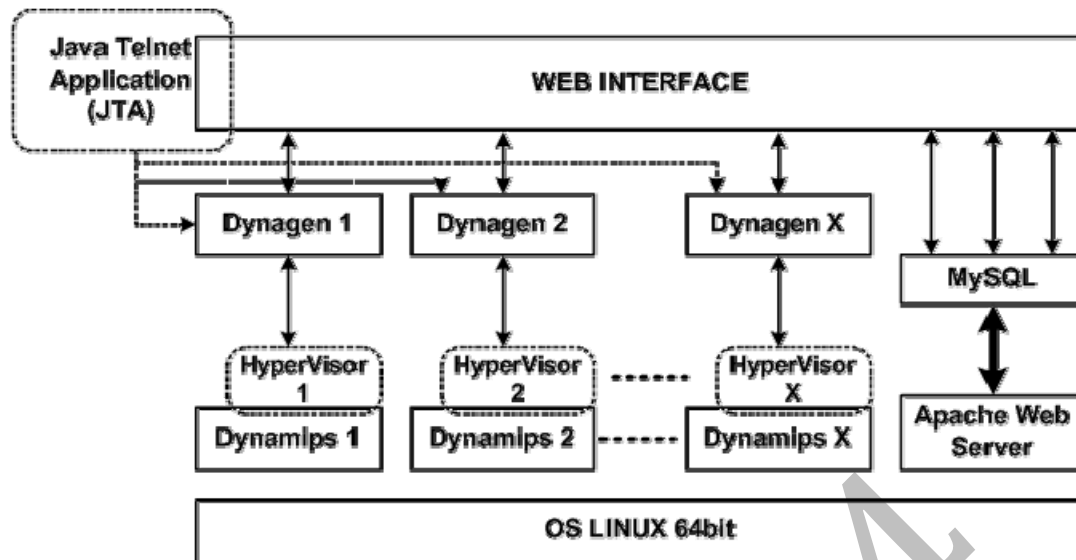


Figure 5 ViRo tool architecture.

Communication of a user with the system will be performed using a web interface, i.e. tool will be implemented as a web application. A database running in MySQL database system will be created to store the data used by web interface and by emulator applications. Communication with individual virtual devices will be accomplished by a Java Telnet Application, accessible directly from the web. Our decision to build a web application led us to the idea of extending the main tool functionalities and build a whole community portal extension allowing the sharing and the distribution of knowledge in the field of computer networks management within the CCNA and CCNP. Community portal should allow creating guides, sample topologies and results in the form of articles or blogs. It would also offer other methods of communication in the form of discussion forums and communication channels.

There are several technologies applicable for the implementation of the ViRo tool. However, because the ViRo tool have to be accessible from the internet using web, and also taking into account our possibilities, is a natural to focus on analysis of two widely used web technologies, PHP (Hypertext Preprocessor) and ASP.NET (Active Server Pages). ASP.NET is a modern server-side web application framework designed for Web development to produce dynamic Web pages. It was developed by Microsoft to allow programmers to build dynamic web sites, web applications and web services. Among its main advantages we should include the speed of application as its code is compiled, and short time of the application development process. Among its disadvantages we may count higher system resources requirements and its main focus on the Windows and IIS environment. PHP is a very popular server-side scripting language designed for web development but also used as a general-purpose programming language. Among its main advantages we should consider the speed, low system resources requirements, platform independence, wide prevalence, support and community. Its main disadvantage is slower execution compared to ASP.NET framework.

Taking into account mentioned features and functionalities as well as popularity among investigator team, we decided to use PHP. As a next step, we analyze several PHP development solutions and frameworks (Native PHP, CakePHP, proprietary frameworks, Drupal framework), and we created its pilot implementations. Since the range of requirements for the application is very wide, compounded by our decision to build a knowledge portal, we decided for Drupal Content Management System (CMS) as the final solution. Drupal is a free and open-source content management framework written in PHP and distributed under the GNU GPL. Drupal is mainly known as famous CMS system; however, it shall also be perceived as a flexible development framework. Utilizing Drupal, the development of ViRo tool is realized as a Drupal module extension providing functionalities defined during design phase, and extending main functionalities of Drupal CMS. The ViRo module is also responsible for communications with Dynamips/Dynagen emulator core. All functionalities are defined inside of two Drupal module files named .INFO and .MODULE. INFO file includes metainformation describing the module itself. The MODULE file contains the implementation of ViRo tool functions providing required functionalities, together with functions required by core Drupal functionalities (definition of group permissions, menu items linking, forms and so on). Pilot implementation of ViRo tool is using Drupal framework as is depicted in Fig. 6.

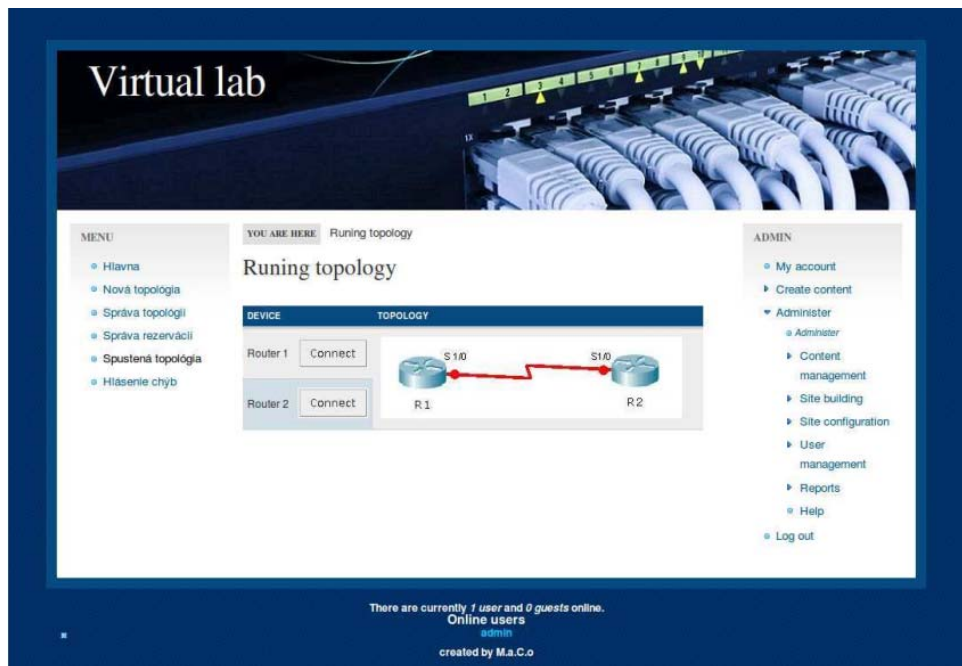


Figure 6 Sample screen of ViRo tool application.

## Conclusion

ViRo tool offers the opportunity for students and teachers to work easily and comfortably with virtual topologies. The tool provides an interface for teachers to be able to create a new topology, or edit existing ones and making them available to students who would then be able to work on them and thus improve their practical skills in the field of computer networks. The tool offers also booking system which ensures a guaranteed number of hours eligible to work in the system for each student. There will be possible to change the settings, such as the length of the blocks, the number of guaranteed hours, etc., in the system as needed. The tool will be fully extensible for new features according to user needs.

## Acknowledgment

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- Dynagen – The network configuration generator for Dynamips, available at: <http://dynagen.org/>
- Graphical Network Simulator - GNS3, available at: <http://www.gns3.net>
- Drupal CMS, available at: <https://drupal.org/>

# Visual perception of phrasing in a tai chi routine using different music accompaniments

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## Abstract

This study looks into the visual perception of phrasing in a Tai Chi routine as affected by a change of music. The research aimed to investigate whether the quality of phrasing between music and movement is improved with a more congruent accompaniment. Sixty respondents, undergraduate music majors from two universities in Malaysia, were invited to participate in this study. They were asked to evaluate the phrasing between music and movement in videos of the same Tai Chi routine but with two different music accompaniments. It was found that there is a significant difference in the evaluation, and that the video with music composed to provide a better congruence in phrasing received a higher rating.

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*Keywords:* phrasing; music; sports routine, taichi, congruence

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## Introduction

Phrasing is a basic feature of various subjects such as speech, music and dance, and generates expression, structure and direction. In the field of music, phrasing is formed with a combination of motifs, harmony, rhythms and so forth to construct larger units of musical sections and structure. Similarly to music, dance also has much association in terms of phrasing since it involves steps and movements which subsequently construct a particular choreographic structure. Although in a different context, some sports routines are closely related to dance since they involve music and choreography such as acrobatic movements, although artistic aspects are also taken into account. For dance and sports routines, the visualization or live performance are often realized from the combination of movement and music. Issues of visualization between the role of music and movement have been studied extensively, particularly in the field of film (Lipscomb and Kendall 1994; Lipscomb and Tolchinsky 2005; Marshall and Cohen 1988; Boliver et al. 1994), dance (Fogelsanger and Afanador 2006; Hodgins 1992; Jordan 2011) and instrumentalists (Davidson 1993; Dahl and Friberg 2007, Vines et al. 2011). The ways in which music influences the visual perception of a subjects, or vice-versa, have been identified. Looking into sports routines, this study aimed to investigate whether a better quality of phrasing can be achieved for an intended congruence between music and movement in a Tai Chi routine. This originates from a research to investigate whether congruence between music accompaniment and movement could improve the visual perception of a routine. However, this article only discusses the perception of phrasing amongst the respondents.

### *Phrasing in Music and Movement*

Research with paired aural and visual conditions using music stimuli that affect the perception and interpretation of the audience continue to gain attention. Despite music per se, phrasing in music relates closely to the body movements of the performers. Analyzing the physical movement of instrumentalists, research found that the movement of an instrumentalist increased together with the ratings for phrasing, dynamics, rubato and overall performances (Juchniewicz, 2008:424). It was also found that without hearing music participants can visually identify phrasing patterns from the physical movement of a performer (Wanderly and Vines 2006:183). Research from Camurri and Moeslund (2010:257) also gathered that intensity increases towards the end of a performer's phrasing and decreases at the phrase boundary with the introduction of new material. In an experiment analyzing the physical movements of pianists, it was found that the underlying phrasing structures of

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all pianists were reflected in their motion profiles (MacRitchie et al. 2013). Most of these studies show that the visual aspects of the physical movements of performers reflect musical features to the audience.

As well as instrumentalists, researchers have investigated the parallels between dance and music. Important studies that show audiences' perception of the correspondence between dance and music include Krumhansl and Schenck (1997) and Mitchel and Gallaher (2001). Hodgins (1992) in his choreomusical analysis also highlights the relationship between choreography and music, categorizing details such as rhythm, dynamics, texture, structure (figures and phrases), as an intrinsic relationship. These studies not only show that an audience can identify congruence between physical movements and music to a certain extent but also emphasize how both subjects are related. The use of music in dance closely resembles that in sports routines, which similarly involve choreography supported by a chosen music. Looking into Tai Chi as the focus of this article, its philosophy and principles can be closely associated to music in many aspects (Loo and Loo 2012, Loo and Loo 2013a, Loo and Loo 2013b). Analysis of the phrasing in sports routines from a musical perspective was investigated (Loo and Loo 2013c), which demonstrated the difference between athletes and musicians in interpreting phrase structures. Although the level of difference was not examined, a comparison in a preliminary study showed that a rhythmic gymnastics routine with a music accompaniment composed from the musician's perspective was thought by respondents both with a musical background (Loo et al. 2013d) and with a background in dance (Loo and Loo 2014) to show more congruence in the phrasing between music and movements. These researches highlighted that synchronization between music and movements in rhythmic gymnastics can enhance the visual perception of phrasing and other aspects, although more models and different sports routines should also be investigated. For these studies, respondents were only asked to choose which routine provided a better congruence, whereas the current study aimed to identify the level of effectiveness in the music function for the routine.

## Methods

A tai chi routine was chosen and the routine was prepared with two music accompaniments. Two videos were provided for the survey, one with the original music used by the athlete and the other with music composed to be more congruent from a musical perspective, aiming to provide a better visual perception for the routine. Sixty respondents from two universities, undergraduate students who are majoring in music, were invited to participate in this survey. The respondents were presented with the two videos and asked to fill in a questionnaire after each video. To avoid an irrational primacy effect, thirty respondents first watched the video with the original music followed by the one with new accompaniment and the other thirty respondents did the opposite. The questionnaire used a Likert scale in which the respondents rate the level of visual perception towards the video presented. A paired sample *t*-test was used to analyse the data for the comparison of both videos. For this study, only the question on phrasing perception will be discussed and reported.

## Result and Discussion

All respondents ( $n=60$ ) rated the level of congruence in phrasing between music and movements in two videos of the same routine with different music using a 1-5 Likert scale. Video 1 has the original music used by the athlete while video 2 was edited with a newly-composed accompaniment. The frequency distribution of the ratings for two videos is shown in table 1, where 1 indicates poor and 5 indicates excellent. The result shows that there is a higher rating in video 2, which a total of 45% respondents rated 5 (excellent), while only 18.3% rated video 1 as 5. The difference between the perception of phrasing between the two video was analyzed using paired sample *t*-test ( $p < .05$ ).

**Table 1. The frequency distribution of the rating in video 1 and 2**

Ratings	Video 1 (Percentage)		Video 2 (Percentage)	
1 (poor)	0	0	0	0
2	7	11.7	2	3.3
3	16	26.7	4	6.7
4	26	43.3	27	45.0
5 (Excellent)	11	18.3	27	45.0
Total	60	100.0	60	100.0

**Table 2 The difference between phrasing perception towards both videos using paired sample *t*-test**

Video	Mean	SD	<i>t</i>	sig- <i>t</i>
Video 1	<u>3.68</u>	<u>0.911</u>	<u>-4.506</u>	<u>.000</u>
Video 2	<u>4.31</u>	<u>0.747</u>		

Table 2 indicated that the mean score for video 2 ( $M = 4.31$ ,  $SD = 0.747$ ) is higher than for video 1 ( $M = 3.68$ ,  $SD = 0.911$ ). The analysis shows that there is a significant difference in the perception of phrasing between video 1 and video 2 ( $t = -4.506$ ,  $p = .000$ ). Therefore, this study shows that video 2, featuring the new music accompaniment, provides more congruence and better visual perception of phrasing between music and routine.

The higher percentage for video 2 may suggest that the enhancement of congruence between music and movement can improve the visual perception of phrasing in both subjects. The preliminary study of this research, where respondents were asked to answer the questionnaire in a simpler format towards a rhythmic gymnastics routine (by choosing video 1, 2 or 'the same' according to the question) also shows a positive answer for the video with new accompaniment (Loo et al. 2013). However, this study presents a more detailed rating for the level of quality in both videos. This research supports other studies which show that a 'match' between music and movement could be visually identified even though both subjects are temporally separated (Mitchel and Gallaher 2001). Research from Krumhansl and Schenck (1997) also states that 'observers are sensitive to correspondences between music and dance'.

Although experiments show that congruence between music and body movements could change or even enhance the perception of viewers, the physical aspect from the field of dance should also be taken into consideration. In Hodgins's choreomusical analysis (1992:14), he mentioned that the perception of dancers may be that differences in phrasing as 'units of musical measurement may seem arbitrary or irrelevant, but to the composer and instrumentalist they are immutable musical standards, age-old and completely intrinsic to the discipline'. As mentioned in Fongelsanger and Afanador's paper (2006), there is a growing trend in John Cage and Merce Cunningham for music to be used independently and as a sonic background for dance. However, relating to the field of audio-visual as in film music, much scientific research found that music is able to influence the visual perception of a subject (Bolivar et al. 1994, Marshal and Cohen 1998; Lipscomb and Tolchinsky 2005). Therefore, taking into account both the scientific and artistic aspects, there is still much to investigate and analyze in the field of sports routines, as these involve not only physical but also artistic content.

## Conclusion

This study showed that the visualization of phrasing perception in a sports routine could be enhanced by a more congruent music accompaniment composed from a musical perspective. While the context and principles of phrasing in many fields of expertise have their individual predilection, the visualization from the combination of the audio-visual aspects is important to present the performance of a subject such as dance, instrumental performance, animation, or (the focus in this article), sports routines. However, this research only tested respondents with a musical background and the study should be further investigated using respondents with various backgrounds.

## Acknowledgement

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# Wanted: Legitimacy. School and teachers as seen by young people: opinions and expectations

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## Abstract

This study aims to shed light on representations and perceptions of school and teachers. 560 young people, aged 18-25 and living in a region of Northern Italy, participated in the study. A quantitative survey method using structured questionnaire to obtain the data is employed. In questionnaire participants were asked about: a) evaluation of school experience; b) perceptions of school's effectiveness in reaching traditional goals; c) perceptions of school priorities, goals, problems, activities, responsibilities; d) perceptions of teachers' professional characteristics; e) perceptions of teachers' weaknesses. Results show that young people's overall evaluation of both school and teachers is generally positive; however findings suggest that the legitimization of school and teachers is in general weak, especially when we observe perceptions of priorities of school and teachers' shortcomings. This study indicates the importance of studying young people's representations and perceptions towards school and teachers as the information collected would help administrators and stakeholders to plan and maintain higher level of school effectiveness, teachers' motivation, authority and legitimacy.

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*Keywords:* Legitimation of school; school effectiveness; school perception; school priorities; teacher's authority; teachers's professional characteristics

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## 1. Introduction

The main challenges facing the education systems in the 21<sup>st</sup> century are issues of access, equity, quality and effectiveness (Botha & Makoele, 2012) in the management of educational resources. Many are directly linked to the rapid changes going on in today's world: the globalization, the development and usage of information and communication technologies at work and in day to day life, the flexibilization and the polarization of the job structure (Allen & van der Velden, 2012), the growing diversity of our societies, etc. Some challenges are short term, such as reallocations of inputs, while others are longer terms and may require a strategic approach to finding solutions. This is reflected in their increasing importance in national education agendas. Long term challenges include integration of the most fragile members of the population (i.e. immigrants and those belonging to disadvantaged social groups). At the same time, attempts to measure the outcomes of schooling have assumed greater importance in many countries in the OECD area, together with an increased focus on factors which improve outcomes (OECD, 2013). Anyway, the issue of stable and adequate financing is crucial, as well as the need to balance short-term effectiveness with longer-term growth. This creates new responsibilities, both for teachers and schools, and for the national systems within which they work.

As far as Italy is concerned, the school system in normally referred as public education. In the course of the last two decades, significant legislative measures have been implemented and several reforms have been carried out (Fornari & Giancola, 2011; Grimaldi & Serpieri, 2012). For example, school curricula have been renewed; the age range of compulsory schooling has been raised in 1999 from the age of 14 to 15 and further to 16 in 2003; the principle of school autonomy was introduced. Furthermore, the results of international learning tests (PISA, TIMSS and others) show persistently negative differences between Italy and the other industrialized countries. They also sharp territorial differences, especially in the north/south divide but also between the different kinds of educational establishments and between individuals.

In this respect, the purpose of this article is to explore the perceptions and expectations that young people between 18 and 25 years of age have of school and teachers. Specifically, it aims to shed light on the relationship between their representations and legitimization of school and teachers. Regarding the aim of the article, the following research questions need to be answered:

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- How do young people evaluate school so far in relation to its objectives, mandate and tasks?
- In its role of socialization agency, which of its main traditional functions is school capable of fulfilling?
- How is today's upper secondary education judged on the whole?
- What functions should the school give priority to in the future?
- How do young people view teachers? What are their shortcomings?

The article is organized as follows: after outlining the current structure of the Italian educational system, the theoretical framework and illustrating the study's methodological aspects, the main findings will be presented and discussed. They should be considered as exploratory, both because of their regional dimension and as a result of some limits in the data collection process.

Discussion of these results are provided as well as directions for future research.

### 1.1. The Italian educational system: some institutional features

Let us start with an overall look at the current structure of the Italian educational system.

The Italian Education System consists of three cycles of education: primary education, secondary education (lower and upper), tertiary education (see Figure 1).

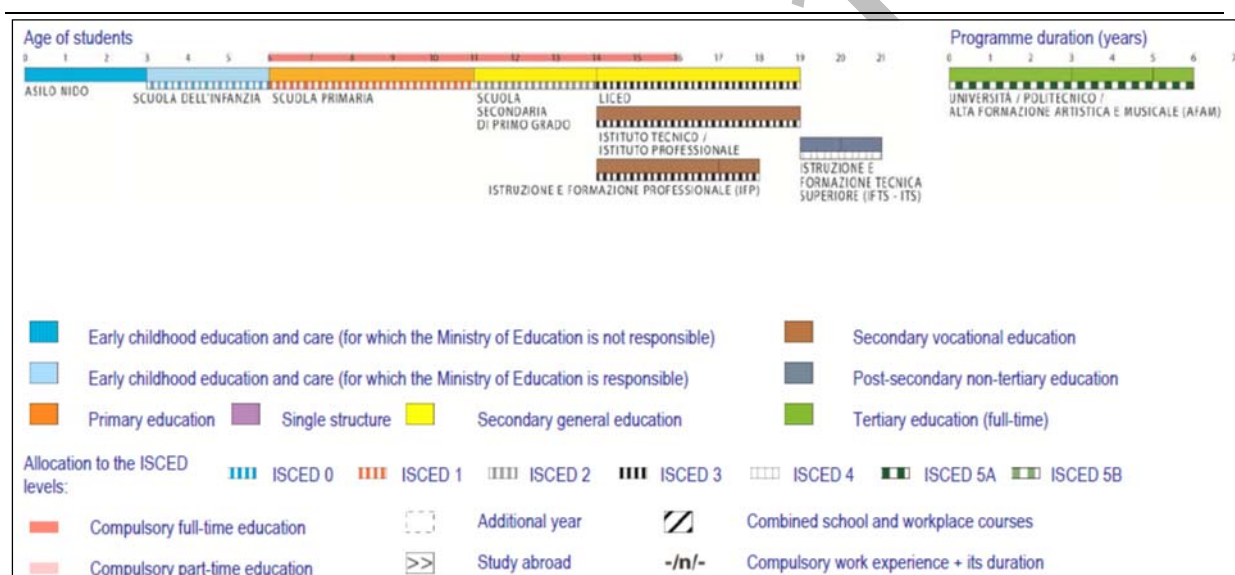


Fig. 1. The Italian Educational System  
Source: Eurydice (INDIRE 2013)

Compulsory education, lasting 10 years, starts at the age of 6. First cycle of education is made up of: primary education (lasting 5 years), for children between 6 and 11 years of age; lower secondary education (lasting 3 years) for children between 11 and 14 years of age; second cycle of orientation at upper secondary school (2 years). Second cycle of education can be accomplished either in State upper secondary schools (licei, technical institutes and vocational institutes), (lasting 5 years) for students from 14 to 19 years of age or through the three-year vocational education and training courses, falling under the competence of the Regions. Post-secondary non tertiary education is offered through post-qualification and post-diploma vocational courses organized by the Regions or higher technical education and training courses (IFTS).

Tertiary education consists in higher education offered by universities and the High level arts and music education system.

### 1.2. Theoretical framework

This article brings together two types of studies. The first concerns institutional legitimation. Legitimacy is a 'slippery' concept (Hough & Maffei, 2013). Max Weber was the first to use this term specifically. His typology of legitimate authority has achieved classical status in the literature of political-science and political sociology. Weber defined legitimacy as the quality of an order (not only a political order) to which social action is oriented.

According to the German sociologist, legitimacy is a ‘belief’: an institution is perceived as legitimate when a collectivity believes that it has the right to govern or make decisions. A number of theoretical approaches followed the tradition established by Max Weber. Among the principal ones are the strategic (Lindblom, 1994) and the institutional approaches (Di Maggio & Powell, 1983; Scott & Meyer, 1983). Mention should also be made of Suchman’s typology of legitimacy (1995). He identifies three forms of legitimacy: pragmatic, moral and cognitive. The first type, pragmatic legitimacy, refers to the instrumental value of the organization for its stakeholders. Moral legitimacy concerns the public’s normative evaluation of the choices made by an organization: in other words, it is granted when an organization reflects socially acceptable or desirable norms, standards and values. Lastly, cognitive legitimacy is accorded when an organization pursues objectives and activities that society regards as appropriate, proper and desirable. Suchman thus tells us that there is not one, but many types of legitimacy. Likewise, there can also be several kinds of legitimacy for the school and those who work in it, and they can be perceived and gauged through different indicators. For instance, legitimation may take place through the ability to participate in decision-making, or there may be legitimation based on the institution’s performance. It is on the latter that we will focus our attention in the following pages.

The second type of studies considers the school, together with the family, as being a key institution in young peoples’ growth and upbringing. Specifically, they focus on the relationship between perceptions of school experience and adolescents’ orientations to institutional authority (Gouveia-Pereira *et al.* 2003). Several studies suggest that the school experience has an enormous influence on how orientations to the institutional system are acquired (Emler, Ohana & Moscovici, 1987).

## 2. Method

This study is a part a larger research project funded by the Piedmont regional administration and entitled *The Institutional and Cultural Roots of Development in a Knowledge-Based Society*. It involved six lines of investigation. The findings presented in this article are taken from the working package n. 5, *Local governance of training and education institutions and their legitimization*.

### 2.1 Participants

The study is based on a sample of 18 to 25 year old young people (N=560) attending or had completed upper secondary schools in Piedmont, a region of Northern Italy.

Demographic data was collected on gender, age, type of upper-secondary school attended and occupational characteristics. Table 1 below presents a summary of sampling characteristics.

Table 1. Demographic characteristics of the sample (%)

Number of subjects, N (%)	male	267 (47,7)
	female	293 (52,3)
Age	18-21 years	62,5
	22-25 years	37,5
Type of upper-secondary school attended	liceo	35,4
	technical institutes	36,6
	vocational institutes	28,0
Occupational characteristics	full-time student	60,8
	employed (or in civil service)	31,1
	unemployed	8,1

### 2.2 Data collection and analysis

Research was carried out between November 2009 and April 2014 by a group of scholars at the University of Turin. Questionnaires were administered in 2011. The data were analyzed by SPSS, version 21. Dependencies between variables were determined by a goodness of fit chi-square test, the closeness of the relationship by Cramer’s contingency coefficient and the strength of differences using odd ratios. All statistical test were performed on the asymptotic significance of 0.05. In detail, the study is based on a mixed method, with two survey investigations followed by qualitative data collection through in-depth interviews and focus groups.

### 2.3 Questionnaire

The questionnaire included 51 questions with several response formats: closed-ended questions (single-choice or multiple-choice), open-ended questions, rating scales, Likert-type scale. The instrument was divided into seven sections addressing: 1) knowledge and information about the regional school system; 2) legitimation of the school system; 3) trust in school and in institutions; 4) interpersonal trust; 5) opinion of teachers’

authority; 6) dynamics of social inclusion/exclusion; 7) sociodemographic background

### 3. Findings

#### 3.1 Young people's opinions towards school's main functions and teachers' professional characteristics

School has many function tasks which include: all-round development of the individual, citizenship training, aesthetic development, conservation and promotion culture, development and cultivating good and higher values of life, development of attitude and communicative ability, etc.

Therefore an important question is whether young people think school performed well in its main functions. This item was answered on a 1 to 5 Likert-type scale ('very low' to 'very high'). Results based on Table 2 show that respondents perceived school as performing well enough (or 4 to 5 on a scale of 1 to 5) in fulfilling some of its traditional objectives: nearly half of the respondents (45%) report that school is still the best place for learning scientific and technical knowledge and a 'training ground' for learning the basics of living together (35%). Conversely, they indicate that it performs not well (or 1 to 3 on a scale of 1 to 5) in developing appreciation of the arts in different forms, in encouraging a healthy body and a responsive mind, and in citizenship education.

Table 2. Respondent's opinion towards school effectiveness on its structural functions (scale of 1 to 5) (%)

<i>In your opinion, to what extent does the school currently is able to achieve these goals?</i>	Very low			Very high	
	1	2	3	4	5
transmitting a scientific and technical knowledge			55,3		44,7
offering students skills needed in the labor market			71,2		28,8
teaching to appreciate art and developing esthetic taste			82,9		17,1
educating for citizenship			74,2		25,8
teaching how to deal with others in daily life			64,6		35,4
helping young people to understand different cultures			71,9		28,1
encouraging a healthy body and a responsive mind			77,7		22,3
promoting critical thinking skills			62,5		37,5

Teachers' role perceptions and views of their professional characteristics were also favorable in the main (see also Figure 5). Respondents perceived their teachers as well-prepared and competent (47%), convinced of the values they hold (47%) and, above all, impartial in dealing with students (Table 3).

Table 3. Perception of the justice of teachers' behaviour

<i>Do you feel that you are treated by the teachers in your school...</i>	
the same way as your classmates or other students	76,4
better than your classmates or other students	11,7
worse than your classmates or other students	11,9

#### 3.2 Trust

Trust in public institutions plays a key role in democratic societies. To the extent to which individuals rely on institutions (vertical trust), they would be more willing to participate and get involved in public life; therefore, trust in institutions impacts in the legitimacy and stability of democratic regimes.

Even though trust in public institutions has declined in Italy over time and that this decline has accelerated over recent years (particularly following the recent financial crisis), young people relied on school. As we can observe in Figure 2, the highest level of trust was expressed in classmates (83%), followed by trust in teachers, non-teaching staff and school as a whole, whereas the representative bodies (50%) exhibit comparatively lower trust.

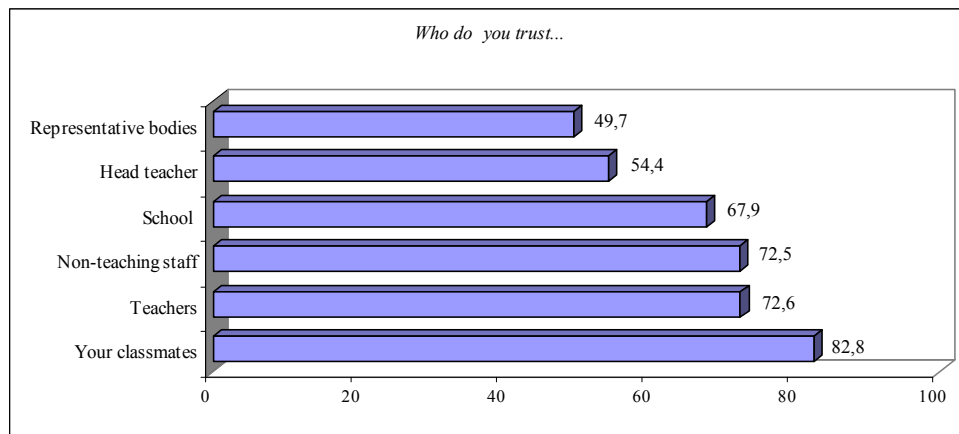


Fig. 2. The importance of classmates (% of 'yes' response)

### 3.3 School improvement priorities and perceived teachers' weaknesses

All respondents were asked to think about the school priorities that were identified as needing attention in school at the time of the interview. As shown (Figure 3), the top school improvement priority among young people interviewed was offering students skills needed in the labor market. Roughly two-thirds (64%) express this view. This priority was followed by transmitting technical-scientific knowledge, whereas developing appreciation of the arts in different forms and encouraging a healthy body and a responsive mind were not perceived as relevant priorities.

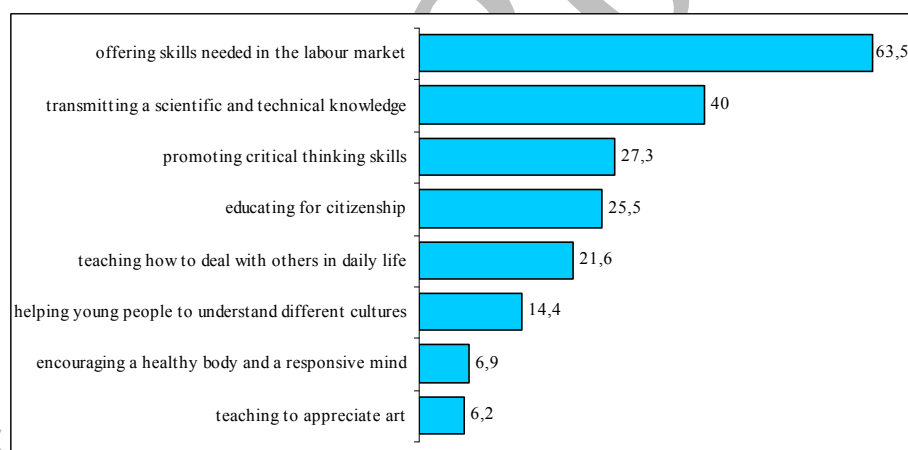


Fig. 3. Priority themes in school improvement (%; 1<sup>st</sup> & 2<sup>nd</sup> choice)

In addition, when asked about a range of school problems including bullying, unmotivated students, obsolescence of technological and computer equipment, outdated programs, young people had got very clear ideas. A scale of 1 to 5 of relevance was used, where 1 denotes that a particular problem is not at all widespread in school, and 5 denotes extremely widespread. Results are summarised in Figure 4, using bandings of 1—2 (entirely marginal), 3-5 (widespread-very widespread). Nine out of every ten respondents cited lack of students' motivation as a serious problem, following by obsolescence of the school's technological equipment and teaching facilities.

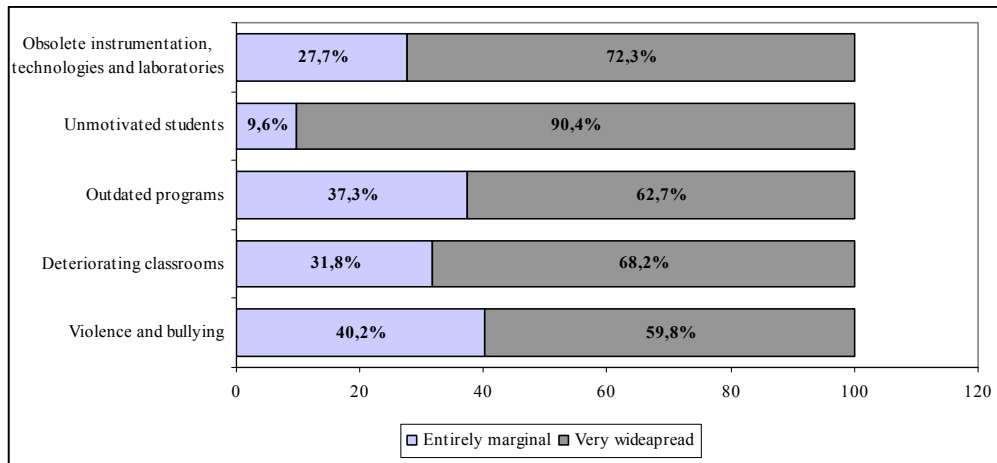


Fig. 4. How widespread do you think the following problems are in school?

Another issue that requires a closer analysis focuses on teachers' weaknesses. As shown in the figure below, the top two perceived teachers' shortcomings were engaging students, followed by listening to them, understanding their wants and needs. They were indicated as a critical problems by more than one out of two interviewees.

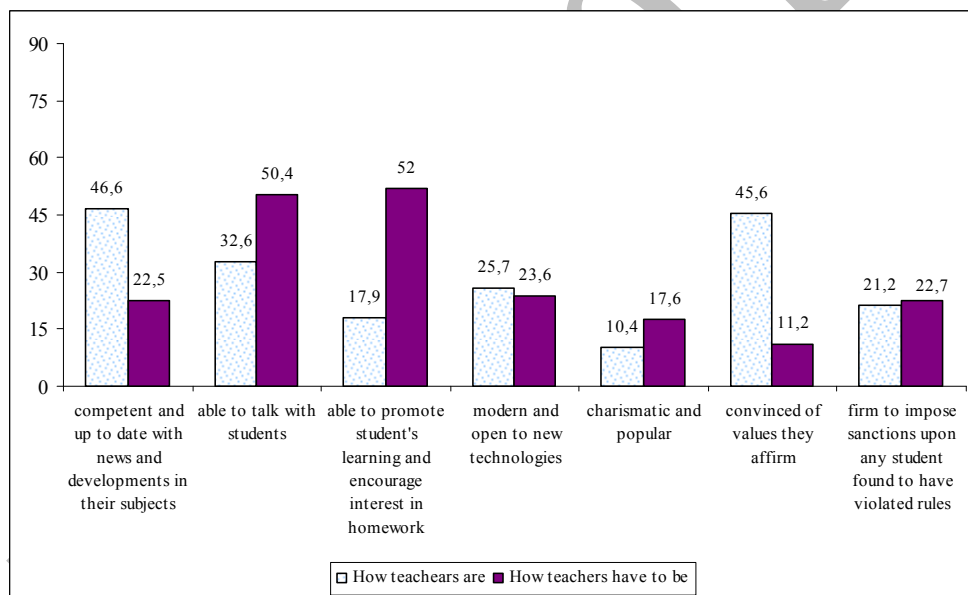


Fig. 5. Perceived professional characteristics of teachers: between being and having to be (%; 1<sup>st</sup> & 2<sup>nd</sup> choice)

#### 4. Discussion

The foregoing results depicts a picture of how young people interviewed perceived both school and teachers. The majority of respondents reported that school performed well enough in fulfilling some of its traditional functions, especially gaining exposure to technical-scientific knowledge, teaching critical thinking and learning the basics of living together. Opinions of teachers' professional characteristics were also favorable in the main: interviewees saw their teachers as well-prepared, competent, capable of ensuring that the rules are respected, convinced of the values they hold and impartial in dealing with students.

However the analysis of school priorities and teachers' weakness raised questions of legitimacy. It is clear that, on balance, school and teachers gain vital credibility and legitimacy from their relationship with students (and families). In particular, one of the most important factors leading to a gain of credibility and public legitimacy by educational institutions is ability to be responsive to students' needs. If educational institutions fail to do so, it will be much more difficult for them to win public legitimacy. Specifically, results of this study show a dissonance of perception between what school concretely accomplishes and beliefs about how it should act. In other words, it is a failure of the actual outcomes to meet the expected outcomes. From this perspective, results

enable us to identify some key issues and goals that should be addressed in the future and that are consistent with recent studies (Sciolla e D'Agati, 2006; Cavalli e Argentin, 2010; Bertolini e D'Agati, 2014).

The first concerns the school's faculty. From their teachers respondents would like to have greater participation and passion, not so much regarding the values they believe in, as in what they teach. Furthermore, young people in Piedmont reported that teachers should also be capable of listening to their students, understanding their wants. In other words, they required more attention to be paid to their needs. They would like to have a relationship with their teachers that is less formal and institutional, and more open to exchanges of views. This is not a demand for concurrence in values (which, as we have seen, is not sought), but for greater agreement on the relational-expressive front. In fact, it is precisely those interviewees who viewed the school as inadequate in pursuing its goals and, at the same time, today's teachers as ethically convinced on the whole, who were most insistent about this aspect.

Another area that needs immediate attention as identified from the findings regards what the interviewees believe to be the school's most critical problem: unmotivated students. This issue is strictly connected to the first: how can teachers who are perceived as lacking in the ability to engage their students possibly motivate them? The relationship established between teachers and students, consequently, is essential in making schoolwork and learning more rewarding. The (de-) legitimization of the school is also a question of this relationship.

The third key issue regards school improvement priorities. As shown, there are variations in needs specified for different priorities. On the one hand, the first most often mentioned goal is equipping students with the necessary labor market skills or with a range of resources to join university programs. Responses suggest that it is an unmet need: as shown before, young people interviewed perceived that school did not perform well in preparing youth for both the labor market and higher education programs. On the other hand, the second most mentioned priority was transmitting technical-scientific knowledge. Unlike previous priority, the data showed that it is a function that today's education system is able to pursue effectively. This seems to suggest that though the educational system struggles to achieve certain goals, young people do not think going to school is a waste of time.

## 5. Conclusion

These key issues point to an urgent need for action and tools, deployed in different planes, settings and levels, not just for the school as an institution, but also for its faculty. It is not a question of laying the blame on the school or teachers, but of considering discrepancies that emerged from analysis as problems that require clear answers.

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# Waste - international collaboration in the waste treatment education

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## Abstract

Within the context of expansive technological development, the wealth of European society is growing steadily. This has resulted in producing more and more waste. Every year people in the European Union throw away about 3 billion tons of waste. Therefore, the EU must give due attention to this problem. This contribution was created within the Leonardo da Vinci international project Wastre for which the Faculty of Mechanical Engineering is a coordinator. The aim of the contribution is to present a current situation of waste legislation system and waste management of the EU and Slovak Republic. There is also discussed the waste recovery in Slovak Republic with stated examples of best practises in waste recovery.

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**Key words:** waste, EU waste legislation, Slovak waste legislation, waste management, waste recovery

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## Introduction

Europe is using more and more materials, and except for the shortterm declines due to economic recession, this trend has run for several decades. In general, the higher the use of resources, the higher the emissions and the more waste generated [1]. Therefore, producers have to solve the problems connected with treating, disposing or recycling wastes from production process, either from waste generated in production or waste generated after the use of products.

In connection with need of education in the field of waste management and waste legislation arised the project “*Wastre: On-line Learning Modules for Waste Treatment, Waste Disposal and Waste Recycling*”. The consortium of the project consists of 8 partners: Multimedia SunShine as innovation donator, 3 leading Central-European technical universities (TU Vienna, CVUT Prague, STU Bratislava), and 3 organizations active in vocational training (Technical and vocational secondary school Tlmace, CHEWCON Humenne, Union of Chambers of Craftsmen and Tradesmen of ESKISEHIR) and the Recycling fund as a body organizing waste treatment and recycling in Slovakia) from 5 countries. [2]

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## Waste legislation

### EU Waste Legislation

The law of the EU has an equal force with national law, and is an integral part of the Member States' legal system. Every action taken by the EU is founded on treaties which have been approved by all EU member countries.

Actual EU legislation is disseminated under 32 thematic areas corresponding to the activities of the EU. The themes, which include also *environment*, are presenting comprehensive coverage of EU legislation. One of the most important points of environmental matters is the waste management. The EU waste legislation has a long history. Since the adoption of the first Directive on Waste 75/442/EEC in 1975, EU waste legislation has experienced a significant expansion. At present, there is an extensive body of legislation including the revised Waste Framework Directive, and a lot of other rules. The timeline of the EU waste legislation development is illustrated in the Figure 1.

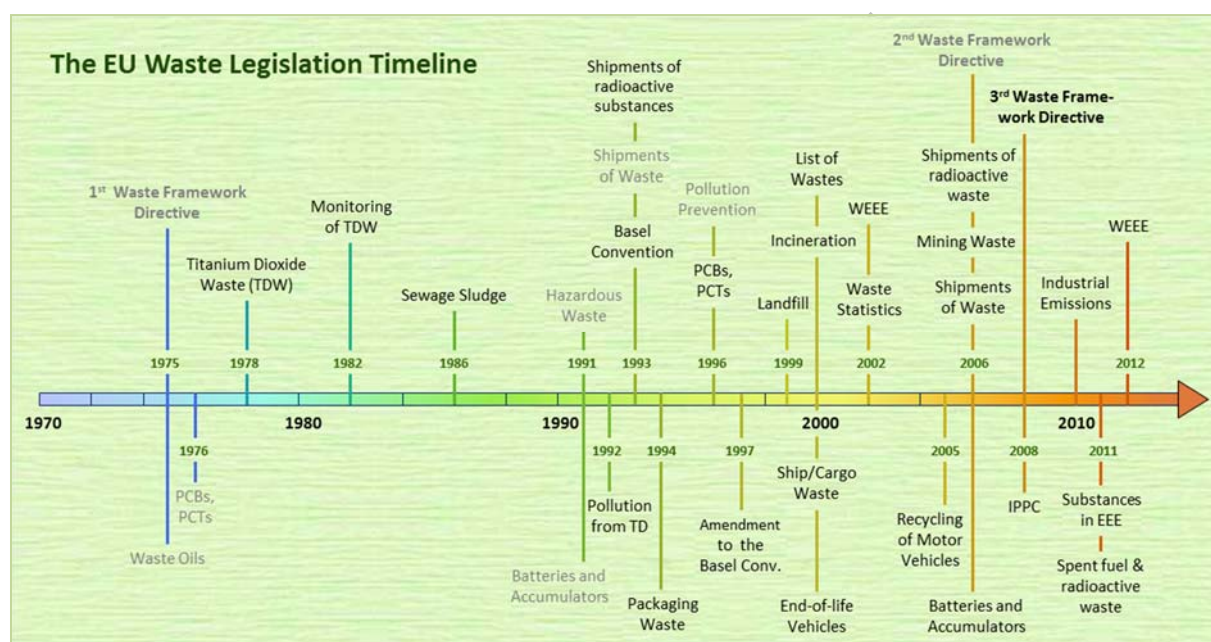


Figure 1 The EU waste legislation timeline ( black colour label – the law is valid, grey colour label – the law was replaced by one of the stated laws of black colour)



Figure 2 Three-stage system of EU waste legislation

Current EU waste legislation is built as a three-stage system of legal acts (Figure 2). The top level is represented by *framework legislation* that sets out basic principles, fundamental definitions and overall strategic



aims. The second level regulates *waste treatment operations* concerning waste incineration and landfilling. The final level contains a number of other directives regulating specific *waste streams*.

The EU's Sixth Environment Action Programme (2002-2012) identified waste prevention and management as one of four top priorities. Its primary objective is to ensure that economic growth does not lead to more and more waste. This led to the development of a long-term strategy on waste. The 2005 Thematic Strategy on Waste Prevention and Recycling resulted in the revision of the Waste Framework Directive, the cornerstone of EU waste policy. The revision brings a modernised approach to waste management, marking a shift away from thinking about waste as an unwanted burden to seeing it as a valued resource. The Directive introduces a five-step waste hierarchy where prevention is the best option. EU waste legislation aims to move waste management up the waste hierarchy (Figure 3) [3]:



**Figure 3 Waste management hierarchy**

The Waste Framework Directive as well as some waste stream specific directives of the European Union include specific targets on recovery, recycling and re-use. An overview of the targets, the objectives and the respective years when the targets have to be achieved is provided in Table 3 [4].

<i>category</i>	<i>year</i>	<i>min. recovery</i>	<i>min. recycling</i>	<i>collection rate</i>
<b>Packaging</b>	2008	60 %	55 %	
<b>Cars</b>	2015	95 %	85 %	100 %
<b>Electronics</b>	2006	70 %	50 %	min 4 kg per inhabitant per year
<b>Batteries</b>	2011		50 % to 70 % (efficiency )	
	2012			25 %
	2016			45 %
<b>Tyres</b>	2006	0 landfill of tyres		
<b>Biowaste diverted from landfills</b>	2006	reduction to 75 % of the 1995 level		
	2009	reduction to 50 % of the 1995 level		
	2016	reduction to 35 % of the 1995 level		
<b>Municipal waste</b>	2015	separate collection: at least paper/metal/plastic/glass		
	2020	50 % recycling of municipal waste		
<b>Construction &amp; demolition waste</b>	2020	70 % recycling/material recovery (including reuse)		

**Table 3 Targets in EU waste legislation [4]**

## Waste Legislation in SR

National legislation related with waste arises hierarchically under the responsibility of several departments where the Ministry of Environment of the Slovak Republic is the most important department of them. The hierarchy of departments responsible for environmental law is illustrated in Figure 4. The Slovak Environmental Inspectorate is the Ministry's specialist organization for looking after the environment and the countryside in accordance with the principles of sustainable development. The Agency also provides expert advice.



Figure 4 System of waste management in SR

Slovak Republic is obliged to implement EU waste legislation and achieve the targets required by EU law. Effective achievement of these targets demands several supporting tools. One of a lot of problems solved in waste management is a correct waste collecting and waste sorting. For more clear and effective waste flows monitored in collecting systems, a new integrated information system can be helpful. Proposed structure of *Integrated information system of waste management in SR* (displayed in Figure 5) would include publicly accessible list of waste treatment equipment.

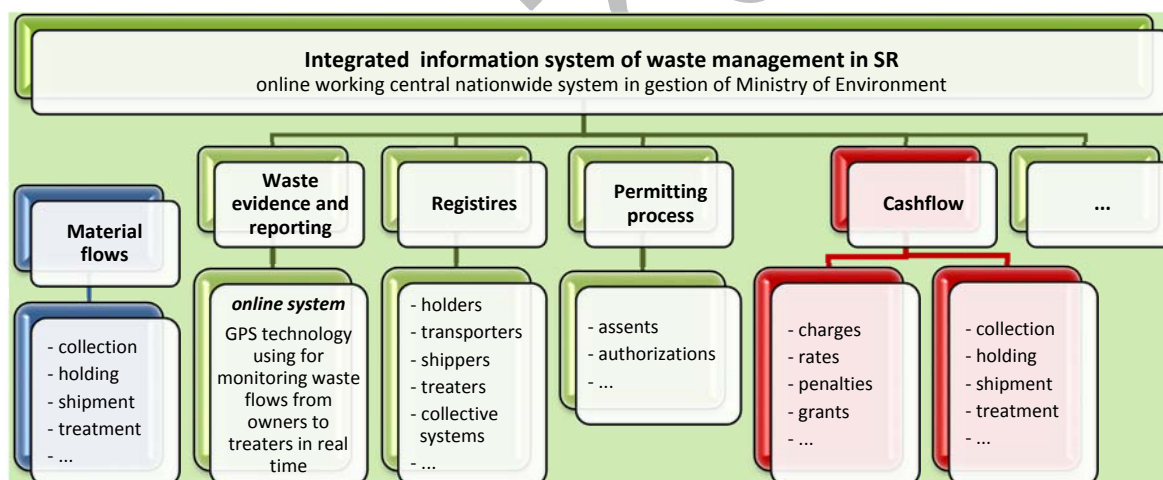


Figure 5 Integrated information system of waste management in SR

## Waste management

### Waste Management in the EU

The use of materials is intimately connected with economic growth. Average annual use of materials in the EU amounts to under 15 tons per person (Figure 6). While the bulk of this ends up as materials accumulated in the economy – so-called additions to stock, such as buildings, infrastructure, accumulated goods – a significant amount is converted into emissions or waste. On average, over 5 tons of waste per person are generated each year in the EU (Eurostat data centre on waste, 2010).

Consumption of resources is also unbalanced. An average European citizen uses about four times more resources than one in Africa and three times more than one in Asia. The EU-27 uses on average less resource per capita than many industrialized countries – about half that of Australia, Canada or USA, but there are large differences between individual countries within the EU (Figure 6). [1]

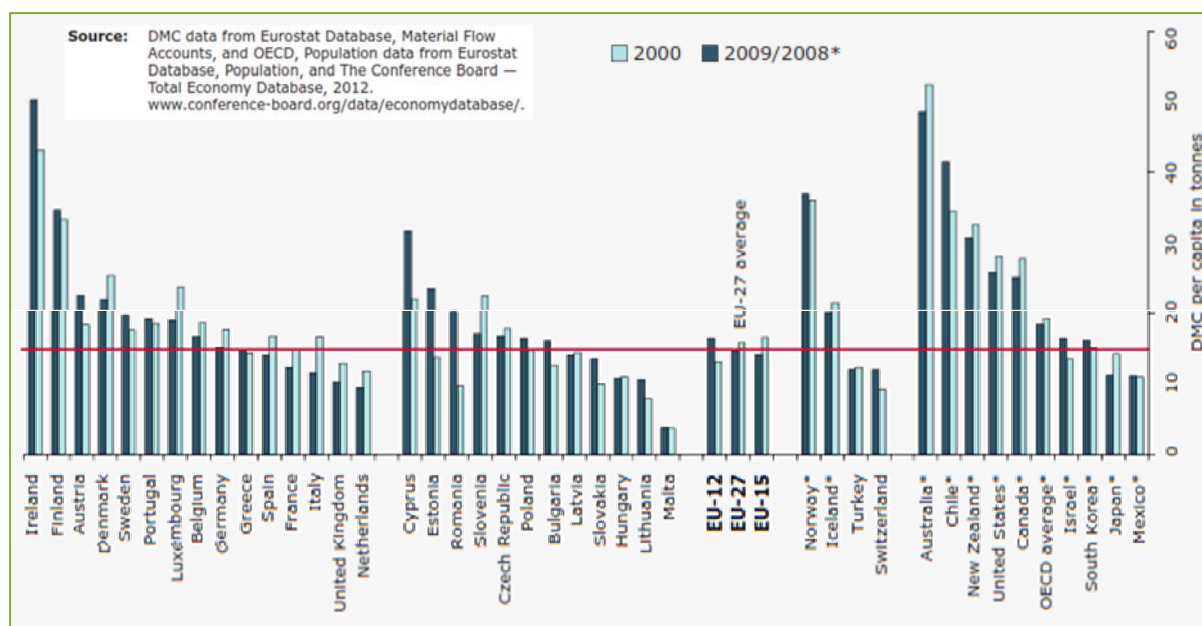


Figure 6 Use of resources per person by country, 2000 and 2009, [1]

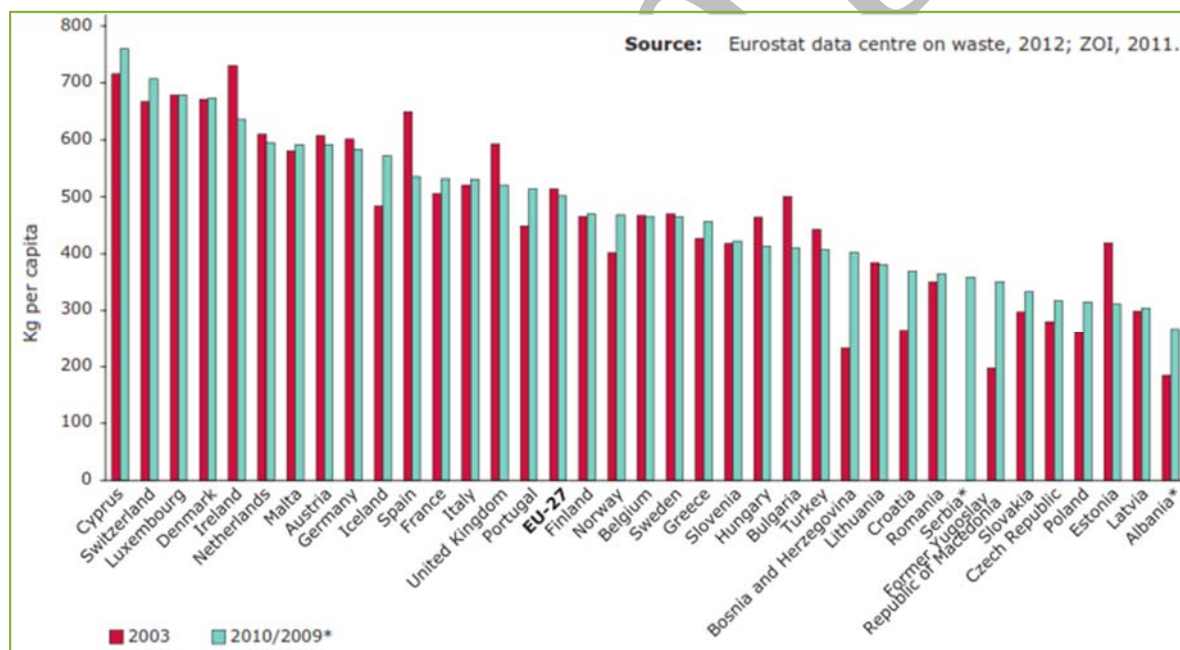


Figure 7 Trend in generation of municipal waste in the EU, EFTA countries, Turkey and Western Balkan countries, 2003 and 2010

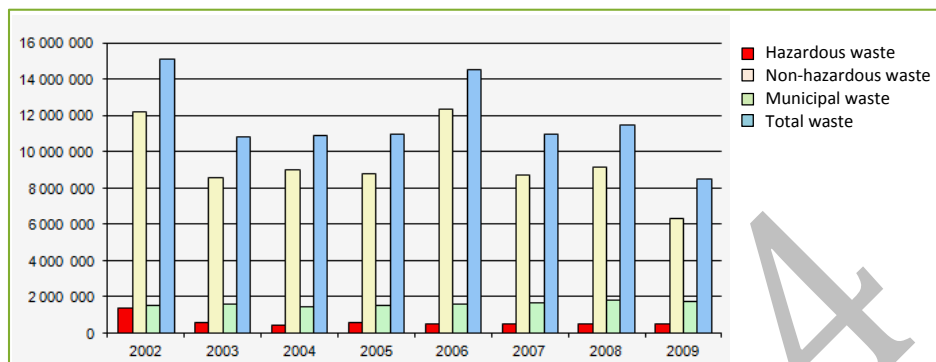
## Waste generation

The EU-27 Member States plus Croatia, Norway and Turkey in total generated some 2.6 billion tons of waste in 2008, or roughly 5.4 tons per person, of which around 3.7 % is hazardous (Eurostat data centre on waste, 2011; data reported according to the Waste Statistics Regulation). In general, 32 % of the waste generated in the EEA countries is from construction and demolition activities, 27 % from mining and quarrying, and the rest from manufacturing, households and other activities. Almost two thirds of the total is mineral waste, mainly from mining, quarrying, construction and demolition.

The annual generation of municipal waste, mainly from households but including similar wastes from such sources as commerce, offices and public institutions in the EU-27 has reached 502 kg per person in 2010 (Figure 7).

## Waste Management in Slovak Republic

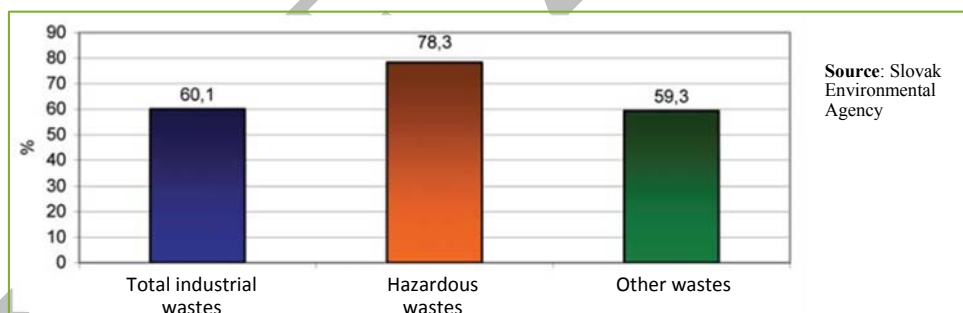
*Balance of waste generation:* When compared with 2009, the growth in waste introduced on the market shows app. 21 %. When further compared with 10.9 mil. tons of waste produced in 2005, their generation dropped by 1.7 %. In 2010, waste originators submitted to waste handling authorities slightly lower volumes of hazardous and municipal waste for recovery and disposal than in 2009. However, the other waste showed major growth in its location on the market, which, compared to 2009, is an increase in the category of other waste located on the market by app. 26 %. [6]



**Figure 8 The amounts of waste generated in Slovakia (in tons)**

Compared to 2009, the annual growth of waste put on the market is about 21 %. The decrease existed in hazardous waste generation by 1.5 % compared to the previous year [6].

In 2011, the industry as whole produced 5,445,970 tons of waste, of which 297,210 tons is hazardous waste and 5,148,761 tons are other wastes. However, the percentage of waste generated by industry in total volume of waste generated increased from 41.5 % in 2000 to 60.1 % in 2011 **Hata! Başvuru kaynağı bulunamadı..**



**Figure 9 The share of waste categories in total waste generation in 2011 (in percentages), Hata! Başvuru kaynağı bulunamadı.**

## Waste recovery in Slovak republic

When the prevention of waste production is not very effective, than the waste recovery has the first priority in waste management. Because of better control of waste recovery, wastes can be divided into 3 main categories – *separated wastes*, *technical wastes* and *general wastes* as is illustrated in diagram in Figure 10.

In Slovakia was in 2011 recovered 4,731,712.37 tons of waste (without municipal waste), which represents around 52 % of total waste (without municipal waste) **Hata! Başvuru kaynağı bulunamadı..**



**Figure 10 Three main groups of wastes**

## Conclusion

Problems related with waste management are and will always be actual. It is necessary to monitor a situation continually, and proposes and adopt measures to ensure a sustainable development. This contribution provides a short overview of the EU and Slovak waste legislation. Also some statistics of waste management are presented to show a current situation in this field. And this way authors of Wastre project also want to point out to results of project solution.

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# Web tabanlı bir öğrenme ortamı geliştirilmesi

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## Özet

Bu çalışmada üniversite öğrencilerine yönelik bir web tabanlı öğretim ortamının geliştirilmesi ve değerlendirilmesi amaçlanmaktadır. Bu amaçla Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü'nün birinci sınıfının birinci döneminde verilmekte olan Eğitimde Bilişim Teknolojileri I dersine yönelik web tabanlı bir öğrenme ortamı geliştirilmiştir. Bu çalışma ortamının geliştirilmesi ve değerlendirilmesi olarak iki bölümden oluşmaktadır. Geliştirilen ortam aracılığı ile kullanıcı bilgileri ile sisteme giriş yapılması, dersin içeriğinin ve ödevlerin web ortamından paylaşılması, içeriğe yönelik değerlendirmelerin yapılması, öğrencilerin tartışma ortamlarına katılmaları ve değerlendirme sonuçları görüntüleyebilmeleri sağlanmaktadır. Ortamın geliştirilme sürecinde alan uzmanlarından görüş alınmıştır. Alan uzmanlarının görüşlerine göre içerik ve tasarım açısından gerekli düzenlemeler yapılmıştır. Daha sonra geliştirilen ortam 45 öğrenci tarafından değerlendirilmiştir. Ortamın değerlendirilmesi amacıyla Şendağ (2004) tarafından geliştirilen “web tabanlı bir öğrenme materyalinin etkililik ve kullanılabilirliği” anketi kullanılmıştır. Araştırmanın sonucuna göre öğrencilerin ortamın kullanılabilirliğinin ve etkililiğinin orta düzeyin üzerinde olduğunu ifade ettikleri görülmüştür.

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*Anahtar kelimeler:* Web tabanlı öğrenme; ortam geliştirme; değerlendirme

## Giriş

Web tabanlı öğretim, eğitsel içeriğin web tarayıcı aracılığıyla sunulduğu bir öğrenme ortamı şeklinde tanımlanmıştır (Karataş, 2008). Web tabanlı öğretim, gelişen teknolojilerin eğitimde kullanılması ile birlikte geleneksel eğitim ortamlarını da etkilemiştir. Web tabanlı öğretim tek başına kullanılabileceği gibi geleneksel derslere yardımcı olması amacıyla da kullanılabilmektedir. Mekan ve zaman sınırlamasını ortadan kaldırıyor olması, web tabanlı öğretimi alternatif bir öğrenme yöntemi haline getirmiş ve eğitimciler tarafından kullanılmaya başlamıştır. Web destekli eğitim daha fazla bilgiye erişim imkanı sağlaması, güncellenebilir olması, hızlı ve geniş bir alanda eğitim sunması, eğitim ve öğretimin öğrenci merkezli olması gibi özelliklerinden dolayı eğitim sürecinde yoğun talep görmekte ve kullanılmaktadır (İpek, 2001). Geleneksel öğretime alternatif olarak gösterilen web tabanlı öğretime yönelik yapılan çalışmalar incelendiğinde web tabanlı bir öğretim ortamı geliştirilerek web tabanlı öğretim ve geleneksel öğretim yöntemi arasındaki farklılıklar incelenmiştir. Ortam tasarlama ile ilgili çalışmalarda farklı tasarım ilkeleri ve modelleri göz önünde bulundurulmuştur (Taşkesen ve Coşkun, 2007; Arkün ve diğerleri, 2009; Çetin ve Günay, 2011).

Etkili bir ortam tasarımı için bazı ilkelerin dikkate alınması gerekmektedir. İşman (2008)' e göre web destekli öğretimde etkili bir tasarım için öncelikle öğretim hedefleri daha sonra kaynaklar belirlenmeli, içerik müfredata uygun olarak hazırlanmalı, materyaller öğrenci ihtiyaçlarına ve hedeflere uygun olmalı, materyaller kolay ulaşılabilir olmalı ve öğrenci- öğretmen etkileşimi göz önüne alınmalıdır. Ayrıca web tabanlı olarak geliştirilen ortamların daha sonra da kullanılabilmesi de önemli bir özelliktir. Web tabanlı öğrenme ortamlarında önemli olan bir diğer unsur ise öğrencilerin değerlendirilebilmesidir. Geleneksel öğretimde kullanılan değerlendirme yöntemleri ve teknikleri, web tabanlı öğretime uyarlanarak, etkin olarak kullanılabilirler (İpek, 2001).

Literatür incelendiğinde farklı disiplinler ve farklı amaçlar için web tabanlı öğrenme ortamı geliştiren çalışmalara rastlanmaktadır. Şendağ (2004) çalışmasında hazırladığı web tabanlı bir öğrenme materyali hazırlamıştır. Daha sonra bu web tabanlı öğrenme materyalinin kullanılabilirliği ve etkililiğiyle ilgili öğretmen adaylarının görüşlerini incelemiştir. Özarslan, Kubat ve Bay (2007) çalışmalarında Entegre Ofis Dersi için web tabanlı içerik geliştirmişlerdir. Taşkesen ve Coşkun (2007) çalışmalarında mekanik derslerinin öğretimi için web tabanlı bir eğitim ortamı geliştirmişlerdir. Ortam geliştirirken öğrenme yönetim sistemi hazırlanması sürecini izlemiştir. Baki ve Güveli (2008) çalışmalarında matematik dersiyle ilgili bir konuda web tabanlı bir

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öğretim materyali geliştirmiş ve deneysel olarak etkisini incelemişlerdir. Arkün ve diğerleri (2009) çalışmalarında ADDIE tasarım modelini temel alarak matematik dersi için web tabanlı bir öğrenme ortamı geliştirmişlerdir. Çetin ve Günay (2011) çalışmalarında McManus'un çoklu ortam tasarımı modeline göre fen eğitime yönelik bir web tabanlı öğretim materyali hazırlamışlardır. Ortamı öğretmen öğrenci görüşleri doğrultusunda değerlendirmişlerdir. Özgür (2011) ise çalışmasında Syracuse öğretim modeli ile e-öğrenme ortamı tasarlayıp öğrencilerin Bilgisayar II dersindeki başarısına etkisini incelemiştir. Yağcı (2012) tarafından yapılan çalışmada da Bilgisayar Büro Programları dersi için web tabanlı bir öğrenme ortamı tasarlanmış ve bu ortamın öğrencilerin akademik başarısına ve bilgisayara yönelik tutumuna etkisini incelemiştir.

Bu çalışmada ise Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü'nün birinci sınıfının birinci döneminde verilmekte olan Eğitimde Bilişim Teknolojileri I dersi için bir web tabanlı öğretim ortamının geliştirilmesi ve değerlendirilmesi amaçlanmıştır.

## Yöntem

### Web Tabanlı Ortamın Geliştirilmesi

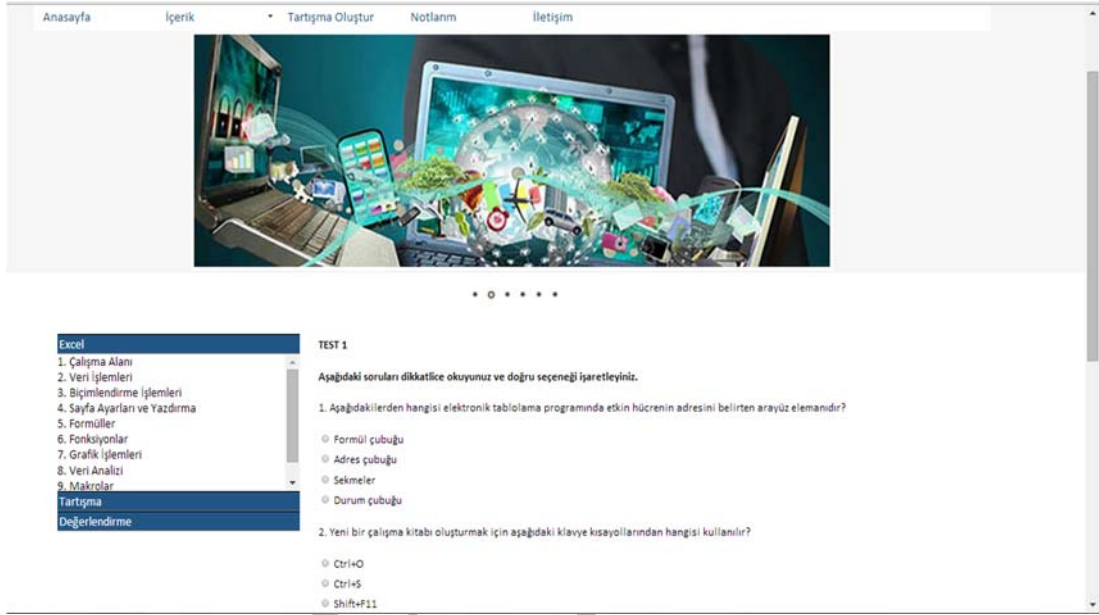
Bu ortam Bilgisayar ve Öğretim Teknolojileri Eğitimi birinci sınıfının birinci döneminde verilmekte olan Eğitimde Bilişim Teknolojileri I dersine yönelik olarak geliştirilmiştir. Hazırlanan ortam dersin içeriğini oluşturan Word, Excel ve Access konularını içermektedir. Bu dersin yedi haftalık bir bölümü geliştirilen bu ortam aracılığıyla yürütülecektir. Ortam ile ders içeriğine ulaşma, ödevlerini yükleme, tartışma, doküman paylaşma vb. yapılabilmektedir. Ortam geliştirme sürecinde tasarım aşamasında Macromedia Dreamweaver programı kullanılmıştır. Kodlama aşamasında ise PHP programlama dili kullanılmıştır. İçeriğin hazırlanması ve ortamın tasarlanması sürecinde derse giren ve alan uzmanı olan öğretim üyelerinin görüşlerine başvurulmuştur. Ortamda ana sayfa, iletişim sayfası, öğrenci girişi bölümü, ve içerik sayfaları bulunmaktadır. Öğrenci giriş bölümünden kullanıcı adı ve şifre bilgileri ile giriş yaptıktan sonra içeriğe ulaşabilmektedir. Sisteme erişebilmeleri için öncelikle öğrencilerin kayıt kısmından üye olması gerekmektedir. Genel bilgilerin yer aldığı anasayfa ve iletişim sayfaları üye girişine gerek duymadan erişime açıktır. Ancak diğer sayfalar için sisteme giriş yapılması gerekmektedir. Sisteme giriş yapan öğrenci içeriğe, değerlendirme kısmına, tartışma odalarına ulaşabilmektedir. Notlar kısmında ise daha önce yaptığı değerlendirme sonuçlarını görebilmektedir.

Ana sayfada; öğrencinin sisteme kayıt olacağı üye girişi kısmı, bölüm ve ders hakkında genel bilgi ve iletişim bilgilerinin yer aldığı bölümler yer almaktadır. Öğrenci girişi sayfasında kaydol linkine tıklayarak üye olan öğrenciler kendileri için kullanıcı adı ve şifre belirlemektedirler. Öğrenciler bu kullanıcı adı ve şifreyi kullanarak içerik, değerlendirme ve tartışma bölümlerine erişebilmektedirler. İçerik sayfasında ise Word, Excell ve Access konularında hazırlanan içeriğe erişim sağlanmaktadır. Öğrenci bu kısım aracılığıyla konu başlığı ve alt konu başlıkları arasından seçim yaparak ulaşmak istediği içeriğe ulaşabilmektedir. Öğrenci alt konular ile ilgili html, video, pdf, sunum gibi farklı dokümanlara bu kısımdan ulaşabilmektedir.



Şekil 1. Örnek Ekran Görüntüsü 1

Değerlendirme bölümünde ise her bir konu ile ilgili oluşturulmuş testler yer almaktadır. Öğrenci içerik ile ilgili olan değerlendirmelere bu kısımdan katılabilmektedir. Bu kısımdaki soruları cevaplayan öğrenci değerlendirme sonunda test sonuçlarını ve puanını görebilmektedir. Ayrıca öğrenciler notlar bölümü aracılığıyla her bir konu kapsamında cevapladığı testlerin sonuçlarına ve puanlarına ulaşabilmektedir.



Şekil 2. Örnek Ekran Görüntüsü 2

Tartışma bölümünde her bir konunun altında o konuya özgü olan tartışma kısımları yer almaktadır. Öğrenci katılmak istediği içerikle ilgili tartışmayı seçip daha sonra tartışma kısmında yer alan alt konular arasında katılmak istediği tartışmayı seçerek bu kısımdan var olan, önceden oluşturulan tartışmalara yorum yapabilmektedir. Ayrıca öğrenciler var olan tartışmalar dışında yeni bir tartışma oluşturmak istediklerinde üst menüde yer alan tartışma oluştur formu ile önce asıl konu başlığını (Word, Excel ya da Access) seçerek hangi konuda tartışma oluşturmak istediklerini yazarak yeni bir tartışma oluşturabilmektedirler. İletişim bölümü ile dersin öğretim üyesi ile ilgili iletişim bilgileri yer almaktadır.

### Web Tabanlı Ortamın Değerlendirilmesi

Web tabanlı öğrenme ortamının değerlendirilmesi amacıyla Şendağ (2004) tarafından geliştirilen “Web Tabanlı Bir Öğrenme Materyalinin Etkililik ve Kullanılabilirliği” anketi kullanılmıştır. 60 kişiyle pilot çalışma yapan araştırmacı pilot çalışma sonuçlarına göre uzman görüşüne başvurarak anketin 2 boyuttan oluştuğunu belirtmiştir. 9 maddenin materyalin etkililiği, 12 maddenin ise materyalin kullanılabilirliği ile ilgili olduğunu belirtmiştir. Anketin güvenirliğini Cronbach Alfa ( $\alpha$ )=,843 olarak bulmuştur.

Şendağ (2004) tarafından geliştirilen bu anket formu 2013-2014 öğretim yılı bahar döneminde Ahi Evran Üniversitesi Eğitim Fakültesi Bilgisayar ve Öğretim Teknolojileri Eğitimi bölümünde birinci sınıfta öğrenim gören 45 öğretmen adaylarına uygulanmıştır. Anket uygulanmadan önce öğretmen adaylarına ortamın linki verilerek, ortamı incelemeleri sağlanmıştır.

### Bulgular

Bu kısımda geliştirilen ortamın öğretmen adayları tarafından kullanılabilirlik ve etkililik açısından değerlendirilmesine yönelik bulgulara yer verilmiştir.



Tablo 1. Ortamın kullanılabilirliğine ilişkin bulgular

Maddeler	Min.	Max.	$\bar{X}$	ss
Materyalini kullanabilmek için yeterli bilgisayar ve internet bilgisine sahibim.	1,00	5,00	4,29	1,06
Materyalde kullanılan renkler birbiri ile uyumludur.	1,00	5,00	3,82	,83
Materyalde sık kullanılan mönülerin sürekli olarak ekranın sol kısmında bulunması olumludur.	1,00	5,00	3,93	,86
Materyaldeki yazılar okunaklı ve anlaşılabilir.	1,00	5,00	4,07	,86
Materyalin sayfa yapısı materyalin kullanımını kolaylaştırıyor.	1,00	5,00	3,91	,97
Materyaldeki bilgi belli bir bütünlüğü ifade edecek şekilde sunulmuştur.	1,00	5,00	3,87	,92
Materyalde anlaşılabilirliği etkileyecek düzeyde yazım (imla) yanlışları yoktur.	1,00	5,00	3,91	,82
Materyalin kullanımı kolay ve anlaşılabilir.	2,00	5,00	4,22	,79
Materyal kullanıma amacını net ve anlaşılabilir bir şekilde açıklamaktadır.	2,00	5,00	4,09	,79

Tablo1. incelendiğinde öğrencilerin materyalin kullanılabilirliğine ilişkin görüşlerinin orta düzeyin üzerinde olduğu görülmektedir. En yüksek ortalamaya sahip maddelerin materyalin okunaklı, kullanımının kolay ve anlaşılabilir, amacının ise net olduğunu ifade eden maddeler olduğu görülmüştür.

Tablo 2. Ortamın etkililiğine ilişkin bulgular

Maddeler	Min.	Max.	$\bar{X}$	ss
Materyal öğrenme sürecinde öğrenciyi aktif kılmaktadır.	1,00	5,00	3,80	,92
Geliştirilen bu materyal konuyu öğrenmeye katkı yapmıştır.	1,00	5,00	3,71	1,16
Materyal ele aldığı ünite göz önünde bulundurulduğunda içerik bakımından yeterlidir.	1,00	5,00	3,55	1,01
Materyaldeki sınav ve sorular yeterlidir.	1,00	5,00	3,11	,88
Materyal konu ile ilgili farklı türde materyallere erişim sağlamaktadır.	1,00	5,00	3,58	,89
Materyal konu ile ilgili derste öğrenilen bilgileri pekiştirmektedir.	1,00	5,00	3,96	1
Materyal ilgili konuyu öğrenmeyi kolaylaştırmaktadır.	1,00	5,00	4,02	,87
Materyal bende, konu ile ilgili, yeterince öğrenme isteği uyandırıyor.	1,00	5,00	3,71	,87
Testlerde sorulan soruların çeşitliliği doğru ve yeterli sayıda kullanılmıştır.	1,00	5,00	3,31	,90
Materyal öğrenciye yeterince kendini sınama (öğrenmeleri izleme) fırsatı veriyor.	2,00	5,00	3,64	,86
Materyal konu ile ilgili bilgileri tekrar etmeyi sağlıyor.	1,00	5,00	3,98	,92
Materyal yeterince alıştırma yapmaya olanak sağlıyor.	1,00	5,00	3,62	1,00

Tablo2. incelendiğinde öğrencilerin materyalin etkililiğine ilişkin görüşlerinin orta düzeyin üzerinde olduğu görülmektedir. En yüksek ortalamaya sahip maddelere bakıldığında materyalin öğrenmeyi kolaylaştırdığı, pekiştirme ve tekrar etmeye imkanı sağladığını ifade eden maddelerin olduğu görülmüştür. Materyaldeki değerlendirmeye yönelik olan ”Materyaldeki sınav ve sorular yeterlidir.”,”Testlerde sorulan soruların çeşitliliği doğru ve yeterli sayıda kullanılmıştır.” maddelerinin ise düşük ortalamaya sahip olduğu görülmüştür.

Tablo 3. Ortamın kullanılabilirlik ve etkililik düzeyine ilişkin bulgular

	Min	Max	$\bar{X}$	S.S
Kullanılabilirlik	2,00	5,00	4,01	,62
Etkililik	1,67	4,75	3,67	,69

Tablo 3 incelendiğinde materyalin kullanılabilirlik ve etkililik boyutlarına ait ortalamaların orta düzeyin üzerinde olduğu görülmüştür.

### Sonuç ve Tartışma

Araştırmada geliştirilen web tabanlı öğrenme ortamının öğretmen adaylarının görüşlerine göre değerlendirilmesi sonucunda web tabanlı öğrenme ortamının kullanılabilirlik ve etkililiğine ait ortalamaların orta düzeyin üzerinde olduğu görülmüştür. Benzer sonuçlara Çetin ve Günay (2011) çalışmalarında da ulaşılmıştır. Araştırmacılar bu çalışmalarında fen eğitimine yönelik geliştirdikleri web tabanlı öğretim materyalini öğretmen öğrenci görüşleri doğrultusunda değerlendirmişlerdir. Çalışma gruplarının çoğunluğu materyalin özellikle görsel ve içerik yönünden yeterli olduğu yönünde görüş bildirmişlerdir. Materyalin kullanılabilirliği hakkında da öğrenciler olumlu görüş bildirmişlerdir. Bu araştırmanın sonucu Şendağ (2004) tarafından yapılan çalışmanın sonuçları ile paralellik göstermektedir. Şendağ (2004)'ün çalışmasında ise hazırladığı web tabanlı öğrenme materyali ile ilgili öğretmen adaylarının çoğunluluğunun materyalin kullanılabilir ve etkili olduğu yönünde görüş bildirmişlerdir.

### Öneriler

Öğretmen adayları web tabanlı öğrenme ortamının test ve değerlendirme kısmı ile ilgili maddelere ait ortalamalar daha düşük çıkmıştır. Web tabanlı öğrenme ortamları geliştirilirken değerlendirme kısmı kapsamlı ve ayrıntılı olarak hazırlanabilir. Öğrenci-öğretmen etkileşimini arttırmak için forum, mesaj kısımlarına yer verilebilir. Web tabanlı öğrenme ortamları tasarlanmadan önce hedef kitlenin görüşleri doğrultusunda kullanılacak materyallerde çeşitlilik sağlanabilir. Bu araştırma sadece Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü'ndeki öğretmen adaylarına ve bir derse yönelik hazırlanmıştır. İleride yapılacak olan çalışmalarda farklı bölümlerde, farklı derslere yönelik olarak web tabanlı öğretim ortamları hazırlanabilir.

### Yazar Notu

Bu çalışma Ahi Evran Üniversitesi tarafından BAP kapsamında yürütülmekte olan “PYO-EGF.4001.13.006” proje numarası ile desteklenmiştir.

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# What do children learn from their parents and what from their grandparents? Changes in the perception of gender and family roles as seen from the developmental perspective.

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## Abstract

The main objective of this presentation is to show changes in common knowledge concerning the intergenerational transmission of knowledge, values and skills in the family system, from the stand point of developmental perspective. The research was based on the cognitive-structural approach. The research focused on beliefs of both children and adults on the intergenerational transmission of personality traits and specific activities associated with gender roles (both male and female) and roles in the family, i.e. the stereotypical assigning of certain values and skills to the generation of parents and grandparents. The survey covered 200 respondents who were classified into five age groups (with the distinction of sex), ranging from the pre-school period up to middle adulthood. The diagnostic-poll method was used. Interview techniques and the enquiry form were applied, a questionnaire designed by the author inclusive. The qualitative and quantitative analyses was carried out. The results suggest that the age and sex of the respondents has a significant impact on their knowledge about the content of intergenerational communications. This will surely contribute to skilful design of educational programmes in this area.

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Peer-review under responsibility of the Sakarya University.

*Keywords:* intergenerational transmission, family system, transmission of knowledge, transmission of values.

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## 1. Introduction

The main objective of this presentation is to show changes, from the developmental perspective, in common knowledge concerning the intergenerational transmission of views, values and skills in the family system.

The research was based on the cognitive-structural approach, which assumes that people have their own well-established, categorized experiences, based on observations and interactions with individual family members during fulfillment of their social roles.

These studies helped to notice the multi-dimensional perspective of changes occurring in the cognitive representation of persons of all ages (from childhood to adulthood) about intergenerational transmission.

Those are the beliefs of both children and adults about the intergenerational transmission of personality traits, actions, values and knowledge relating to:

1. gender roles (women or men)
2. family roles (attributing certain values and skills to parents' and grandparents' generation).

The basis of the study are theories by S. Fiske, A. Cuddy, P. Glick (2007) and B. Wojciszke (2010) treating gender roles in the dichotomous dimension: warmth and competence. Various forms of the transmission of behavior passed from parents to their children depend on personal views, resources, such as age, status, and self-esteem as well as the model family (for example work sharing at home between members of the family). Most research indicates that it is the relationships and expectations of adult family members that have the greatest impact on intergenerational transmission.

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## 2. Method

### Respondents

The study involved 200 people in five age groups, ranging from pre-school up to middle adulthood, 40 people were tested in each group. Each group was also analyzed in terms of gender differences. In this article shows the results of 160 people including 4 groups: 2 groups of children and one of adolescents and one adults:

K - Kindergarten period (4-6 years old)

S - School period (9-12 years old)

A – Adolescence (15-16 years old)

MA – Middle adulthood (40-60 years old)

### Research tools

The diagnostic-poll method was used. In the youngest tested group a structured interview was used as a tool. While in the other groups there was used a questionnaire designed by the author (Lasota, 2013) containing open questions.

The qualitative and quantitative analyses were carried out.

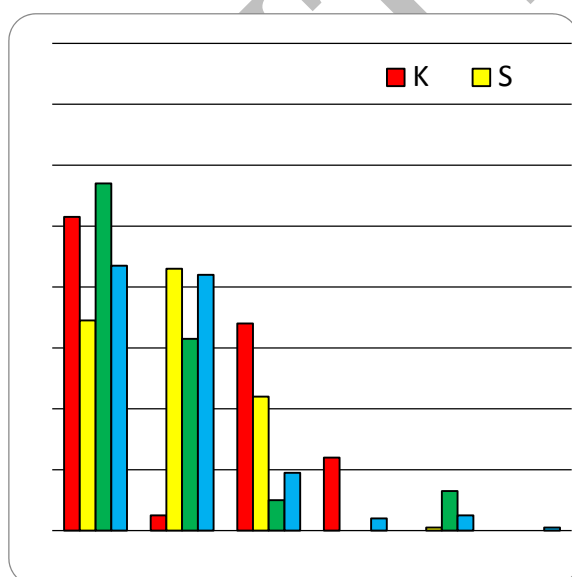
### Categories

From the responses about the common knowledge including family transfers there have been created six categories:

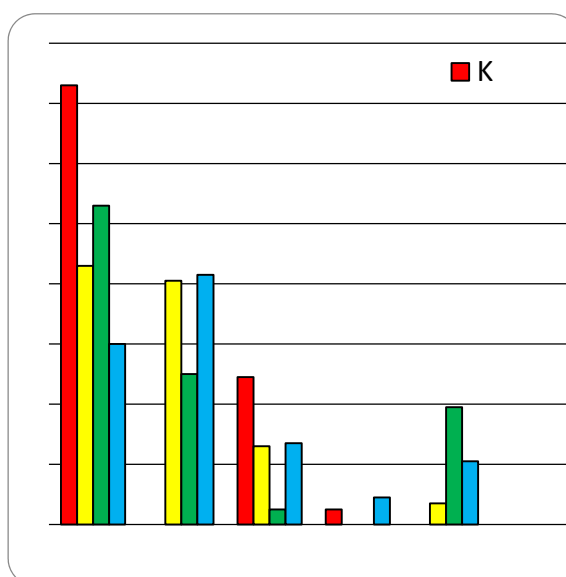
- procedural knowledge (specific activities, skills)
- values
- semantic knowledge (acquisition of knowledge about the world)
- pragmatic knowledge (life knowledge)
- normative knowledge (moral and social norms)
- historical knowledge (the factual knowledge)

## 3. Results

### *What do children learn from mothers?*



### *What do children learn from fathers?*



Graphs 1 & 2. The transmission of knowledge, values and norms from mothers / fathers to children.

The results have shown that the common knowledge of the respondents surveyed about the transmission of knowledge, values or norms is different depending on the roles they assign to the members of the family,

whether these are gender roles or family roles.

According to preschoolers fathers transmit to children more skills than mothers. Studies about common knowledge show that the preschoolers even at this age learn actions compliant with the traditional division of roles in the family from their parents (for example a mother teaches how to cook, clean, and a father teaches how to ride a bike or work). However, adults have claimed otherwise. In their view it is the mothers that children learn most activities from.

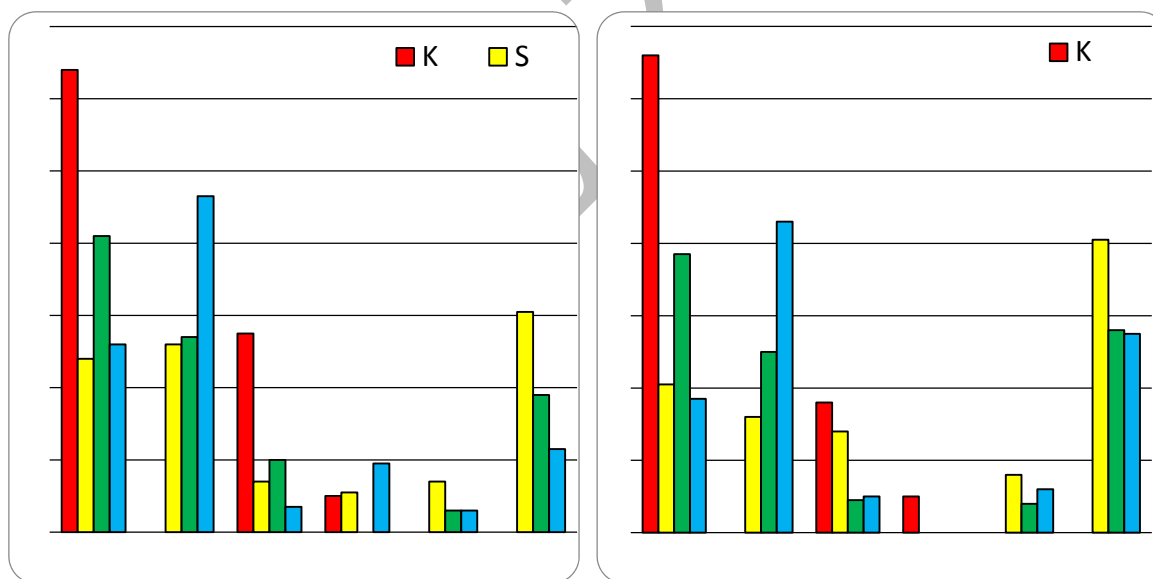
As regards the second category – values – we can notice that pre-school and school children believe that mothers pass more values and traits to their children than fathers. Interesting results were obtained with regard to the intergenerational transmission of the normative knowledge. In the opinion of younger children (preschool and school-aged children) mothers are more likely than fathers to teach the children about the rules and norms, what is allowed and what is prohibited. However, in the adults' opinion, fathers have more authority in this area.

In the respondents' answers regardless of age we hardly found any presence of the parent - child transmission in the area of semantic knowledge. Neither surveyed children nor adults appreciate the transmission of information about the world from their parents. Perhaps in the common knowledge of the respondents, learning about the world is reserved for school and teachers, which explains why only pre-school children and adults claimed that parents transmitted semantic knowledge to their children.

Pragmatic knowledge includes specific advice helpful in life. It is the knowledge useful in solving life problems. According to the teenagers and adults, children often receive this knowledge from their fathers. The surveyed did not see any transmission of historical knowledge between generation of parents and children.

Another question concerns the differences in the perception of transmission between grandparents and children.

#### *What do children learn from grandmothers and what from grandfathers?*



Graphs 3&4. The transmission of knowledge, values and norms from grandmothers / grandfathers to children.

As shown in the graphs 3 and 4 in the category of procedural knowledge, in children's opinion, both grandmothers and grandfathers hand over to grandchildren a similar number of skills and practical activities. The common knowledge on this subject is very stereotypical. Grandmothers teach how to bake, cook and grandfathers teach to fish or tinker. We found that the adults attribute to the grandmother-grandchild transmission more procedural knowledge than to the grandfather-grandchild transmission. Looking at the values, the difference appeared among school children and other groups. In their view, grandmothers transmit to the youngest generation more values than grandfathers. Interestingly, the knowledge of the middle aged people about the image of grandmas and grandpas is slightly different from the child's perception.

According to the oldest group the main content of transfers between the oldest and youngest generations are primarily the values. Perhaps this is caused by the fact that most of them had already entered into the

grandparents' roles. All other groups believe that the strongest transmission between grandparents and grandchildren occurs in relation to the procedural knowledge. The common knowledge of the surveyed on learning about norms and moral principles from grandparents is different depending on age.

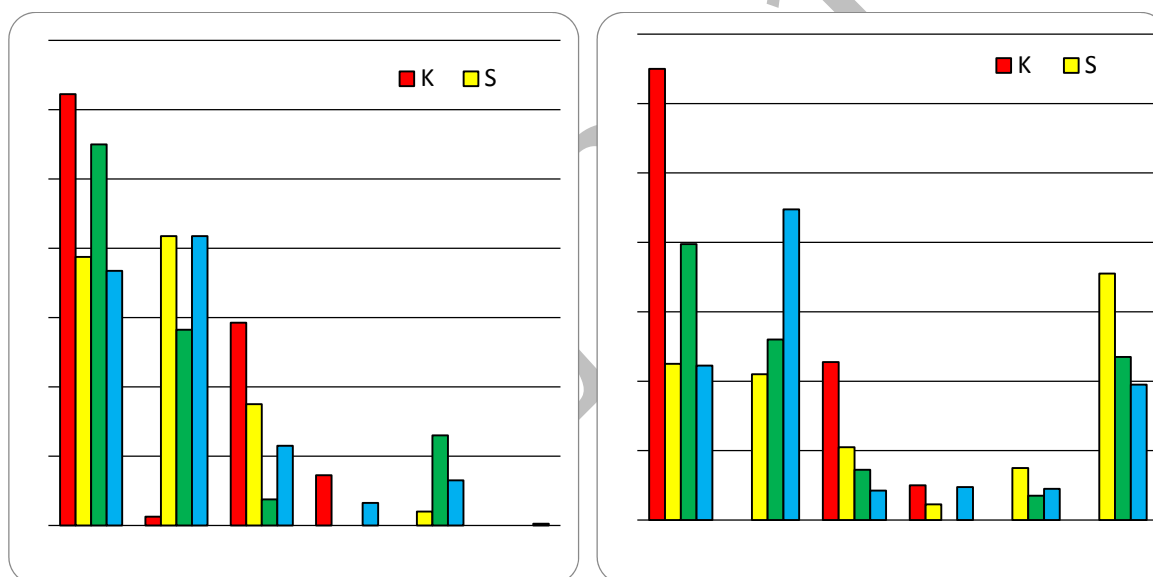
In the opinion of preschoolers and teenagers the normative knowledge is transferred to them primarily from grandmothers, but school-age children attribute more normative content to the transmission from grandfathers. Perhaps we can explain it as in the Polish culture grandparents still play an important role in the upbringing and looking after the children.

The surveyed attributed no transmission of semantic knowledge either to grandparents or to parents. Only the pre-school group and the middle-aged people drew attention to the content of this type, assigning to grandmothers more semantic content than to grandfathers. The findings of this study suggest that in the area of pragmatic knowledge the school-age children learn from their grandmothers as often as from their grandfathers. Only adults attribute more content to grandfathers.

It should be pointed out that the essential importance in the transmission between the generations of grandparents and grandchildren is the transfer of historical knowledge, tradition and culture. The most historical content was attributed by the school children. The interesting thing is that they attributed more historical knowledge to grandfathers than to grandmothers.

The last two graphs highlight the difference between the content of transfers from parents and grandparents directed to children.

### *What do children learn from parents and what from grandparents?*



Graphs 5 & 6. The differences between parents and grandparents in the content of intergenerational transmission.

The conclusions that can be drawn from the study examining the common knowledge of respondents of various ages are as follows: Children learn from their parents specific skills, values and moral norms. The semantic knowledge and the pragmatic knowledge is transferred, in their understanding to a very minor extent. On the other hand, the main content of transmission between the oldest and youngest generation, are the skills, values and what they didn't notice in parents, that is historical knowledge. In the opinion of the respondents, the semantic and the pragmatic knowledge is transmitted, but also to a very small extent. The results of empirical evidence show that people from various generations have different ways of thinking and different experiences deriving from the interpretation of events. Thus, they have different knowledge concerning the content of the intergenerational transfers.

Family roles are behavior patterns of people who perform specific functions in the family, satisfying the needs of the family. The individual family members assume the role of a grandchild, a parent or a grandfather, they also have social and family expectations of people who they assign particular roles to. Our results confirm the developmental regularity. According to the respondents age the number of skills decreases but the number of traits and values increases in the transmission to the youngest generation. The transmission of historical knowledge was assigned to grandparents.

## **4. Conclusion**

The following conclusion can be drawn from the present study:

The research about common knowledge concerning the content of intergenerational transmission in the family shows that the respondents pay attention primarily to the fact that parents and grandparents teach children to satisfy basic needs, specific skills, values and moral norms. Unfortunately they underestimate the transmission of the pragmatic knowledge and the influence of adult family members on the development of children's knowledge about reality.

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# When a school rethinks the learning environment: a single case study of a new school designed around experiential learning

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## Abstract

This case study looks at how experiential learning is implemented in a newly constructed school which has adopted an educational approach based on the principles of this pedagogical model. Since its inception, this Canadian K-8 school has chosen to implement experiential learning on both a structural and operational level. Semi-structured interviews with administrators, teachers, students and parents were conducted and subsequently coded to reveal emerging thematic categories from each of these perspectives on learning in a teaching environment specifically designed around experiential learning. Themes from each perspective are categorized and serve as a basis for commentary on initial theory-based research propositions.

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*Keywords:* Experiential learning; Team-teaching; Case study

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## 1. Introduction

Education based on experiential learning is not a new concept. At the turn of the 19<sup>th</sup> century, Dewey proposed a pedagogical model based primarily on the scientific method. He concentrated his theories on the concepts of research, experience, growth and continuity (1897, 1938). Today, building on Dewey's vision, experiential learning is considered to be a process by which learners construct knowledge and conceptualize through activities based on their physical and social environments.

In northern New Brunswick (Canada), a newly constructed school called *La Mosaïque du Nord* has chosen to base its vision of education, in part, on the concept of experiential learning. The present article starts by presenting the school under study. Then, in order to better structure the case study, as suggested by Miles & Huberman (1991), three research proposals are submitted and ultimately addressed in light of our results in the discussion. Finally, this study aims to better understand experiential learning by asking the following research questions: 1) How do teachers at *La Mosaïque du Nord* school apply theoretical elements of experiential learning as defined by Dewey (1987) and Kolb (1984), and 2) How do teachers, students, administrators and parents perceive learning at *La Mosaïque du Nord*?

### *The School*

*La Mosaïque du Nord* is a newly constructed school located in Balmoral, serving about 320 students from four surrounding communities in northern New Brunswick (Canada). Inaugurated in January, 2012, this school aims to "renew the teaching-learning process through innovation" as outlined in its guiding implementation document. It strives to move away from traditional teaching where teachers lecture and students play a relatively passive role in the learning process. Instead, *La Mosaïque du Nord* looks to place students in authentic learning situations which engage them actively and foster meaningful learning through experience.

The school's vision of experiential learning was central to the physical layout of the facilities as well as the structural organization of lesson delivery. For example, the classrooms is organized in distinct areas in the school where students from different learning levels are grouped together, forming several learning sub-communities

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called “learning cycles” (Kindergarten to 2nd grade, 3rd to 5th grade and 6th to 8th grade). Students work together within each learning cycle and are assessed summatively in the final year of each cycle, allowing them to respect their own learning pace. The creation of a “wider community” also represents a key focus at *La Mosaïque du Nord* school. The aim is to broaden learners’ horizons, to get them to open their minds to the world. The building is equipped with the latest in technology, from geothermal heating to the most recent educational tools for teachers. Finally, creating partnerships with surrounding communities is an important part of the school’s vision, which speaks of “developing knowledge through community action”. Student learning is thus achieved through the solutions proposed to meet the needs of the community.

### *Research propositions*

In case study research, it is common to find guiding propositions, which help to increase the likelihood that the researcher will be able to place limits on the scope of the study (Miles & Huberman, 1991). The more specific its propositions, the more a case study will likely stay within feasible limits. Research propositions can help to situate collected data by comparing findings to what can be found in published literature (Baxter & Jack, 2008). In our study, we submit the following three research propositions, all based on existing literature and experiences from professional practice, as suggested by Baxter & Jack (2008):

- Students will be actively involved (as defined by Kolb, 1984) in tasks associated with an experiential learning based pedagogy.
- Students who move from a school with traditional pedagogical views to a school focused on experiential learning will consider learning to be more enjoyable and, ultimately, more meaningful.
- Students who attend a school focused on experiential learning will not only be more actively involved in various educational tasks, but they will also engage in reflective observation, conceptualisation and active experimentation, four stages of an *experiential learning cycle* according to Kolb (1984).

### *Experiential learning : A conceptual framework*

John Dewey is widely regarded as the father of the concept of experiential learning. From his early work *Pedagogic Creed* (1897) to the relatively recent *Experience & Education* (1997), Dewey develops a vision of education which is essentially experiential. One could actually consider both experience and education to be, from Dewey’s perspective, synonymous. Of course, if all genuine education comes about through experience that does not mean that all experiences are genuinely or equally educative (Dewey, 1997). Four key concepts are at the root of education according to Dewey: experience, inquiry, growth and continuity.

For Dewey (1997), life is about experiences of social interaction. Therefore, in a school context, experiences have to be intelligently conducted in such a way that one particular experience leads to more desirable future experiences. Still according to Dewey, learning consists in part of the ability to evaluate a given experience. As such, inquiry is involved in experiential learning, which becomes a reflective process through which the meaning of experience is consciously pursued by an individual or a community of individuals. The more one pursues the meaning of an experience, the more subsequent experiences are needed to attain a higher level of understanding. It is in this regard that Dewey talks about the concept of growth. Of course, the direction in which growth has to take place must be specified. As Dewey (1985) puts it in *Democracy and education*, learning is a general and persistent balance of organic activities with the surroundings, and of active capacities to readjust activity to meet new conditions. The balancing of organic activities with what surround us is growth. Finally, the concept of continuity is the last criterion by which experiences can be regarded as possibly being educative. An experience that respects this last criterion widens conditions of subsequent learning and opens the learner to new contexts or environments. Something is carried over from one experience to another and that something falls into the category of continuity. There is no disconnect between the individual and the experience as is the case in more traditional education, where the curriculum is not necessarily established as part of a meaningful pedagogical activity.

In 1984, inspired by Dewey’s work on experience in education, Kolb (1984) presented his Experiential Learning Theory (ELT), in which he identifies four stages of what he calls the experiential learning cycle. According to Kolb (1984), learning starts with a concrete experience. For learning to take place, one must be actively involved in a task and that task cannot simply be of a watching or reading nature. Once the task is done, the second stage of the experiential learning cycle, according to Kolb, consists of taking time to engage in

reflective observation, whereby the learner steps back from the task at hand in order to analyze what has been done and experienced. At this point, communication with others is central because questions usually arise from the learning experience. From those questions, meaning must be found. The learner now needs to interpret the events and create relationships between the lived experience and what he actually knows. This thinking process is what Kolb calls abstract conceptualisation. Lastly, the learner takes what he has just learned in theory and puts it into practice. This stage is called active experimentation because, like a scientist, the learner makes predictions and determines what is needed in order to better handle a similar task. Finally, to reach meaningful learning, it is important that the learning context be relevant to the learner (Kolb, 1984).

## **2.Method**

### *Research approach*

The methodological approach guiding the present study is rooted in the qualitative research paradigm. Since the focus of our inquiry is on the processes of learning in an experiential learning pedagogy, we adopt a social constructivist point of view regarding our findings. A qualitative approach is applied to all aspects of the research design: inquiry, data collection and data analysis. Thus, the present report uses quotes from participants to interpret worthiness of each research proposal and attempts to inductively establish patterns or conceptual themes in order to better understand how students learn in a school focused on experiential learning as their pedagogical foundation.

Our research is a single instrumental case study (Stake, 1995) in which we focus on the concept of experiential learning (Dewey, 1997; Kolb, 1984) by studying the bounded case of a newly constructed school which has chosen to focus its pedagogical approach on the principles of experiential learning. The school under study was selected through theory-based purposive sampling, defined by Patton (1990) as finding manifestations of a theoretical construct of interest so as to elaborate and examine the construct. Case selection was also somewhat opportunistic since the school in our study was new and representative of a novel educational approach.

### *Data collection*

Our data came from multiple sources, namely four group interviews, 14 individual interviews, various collected documents (lesson plans, school strategic plan, etc.) and from researchers' notes collected through observation over the course of three separate site visits. During individual and group interviews, participants were asked to talk about their perspectives on experiential learning and learning in general. Here are some of the questions asked to guide the semi-structured interviews: "Talk about your school's mission statement", "What sets your school apart from others?", "What is your perception of experiential learning?", and "What are some examples of learning activities that made learning fun?" All interviews were audio-taped and later transcribed.

Participants included the two school administrators, seven teachers from varying grades, six students from higher grade levels (to ensure the comparison component of our study between a traditional school and one focused on experiential learning) as well as eight parents. All participants were selected through a process of convenience sampling, mainly based on availability. Confidentiality was provided in all aspects of this research as we assigned pseudonyms to members of each participant sub-group and kept data secured and available to involved researchers only (with written consent from all participants prior to beginning the study). Approval was also obtained from the Université de Moncton's Ethics Committee on research involving human participants following a review of proposed methodology, including all data collection tools.

### *Data analysis*

We chose to analyze the data from our case study from the perspective of four embedded subunits (Yin, 2003): the administration, the teacher, the student and the parent. Analysis of themes was first undertaken to identify and describe the various themes surrounding the discourse of the case's 4 embedded subunits. During this process, three analysts independently established codes to represent emerging themes within each case and compared their results. An inter-rater reliability score (Miles & Huberman, 1991) of 90% was then calculated, contributing to a calibration of thematic analysis among researchers and, ultimately, to the validity of our analysis. Major themes were ultimately isolated for each sub-unit. From this process of thematic coding, the

data were then refined through the writing of what we call “perspective narratives”, based on how Giorgi & Giorgi (2003) define the narrative.

A total of four perspective narratives were written, summarizing the views of each of our 4 embedded case subunits (administrators, teachers, students and parents) through both a descriptive and interpretive lens (Van Manen, 1990). Adding to the validity of results, narratives were subsequently returned to at least two participants from three of the four sub-groups for verification of authenticity, a process called member checking or data triangulation according to Denzin (1978). Though we are confident that the students’ perspective narrative is accurate, due in part to our inter-rater reliability score, it should be noted that we were unable to member check this particular narrative since the participant were unavailable. Working with the major emergent themes from the coding process as well as the corroborated narratives, we then proceeded to return to each research proposition to, ultimately, improve on our understanding of how students learn in a school which grounds its pedagogical approach on the principles of experiential learning.

### **3.Themes & perspective narratives**

Thematic content analysis of interview transcripts from all four embedded case sub-units revealed several emergent themes. Researchers then proceeded to isolate major themes common among interview subjects. From the administrators’ perspective, two major themes were identified: centering school management on the student’s needs and fostering student engagement. Three major themes emerged from the teacher interviews: the importance of authentic learning activities, the support for team teaching and non traditional learning environments, as well as the desire for closer ties between school and community. From the students’ perspective, three major themes were apparent: the appreciation of significant learning activities, the positive effect of team teaching and the perception of school as fun. Finally, three major themes were identified upon analyzing data from the parents’ perspective: an appreciation for the school’s pedagogical approach, the school’s strong use of technology and, lastly, the school’s active partnership with the community. Based on these major themes, four perspective narratives were developed summarizing the views on experiential learning expressed by each of the four embedded sub-units.

#### *The administrators’ perspective*

John, the school principal, was part of the planning process from the moment it was decided that a new school would be built. From the beginning, John envisioned a school that would distance itself from the traditional model of teaching. In that regard, describing the mission statement of his school, John wrote that “the success of each student is mandatory, not an option”. Mary, the vice-principle chosen to work with John in setting up this innovative new school, shares his vision and passion for a school where learning takes place through significant experiences to which students can relate. In line with this vision, both school administrators structured their school not by individual grade levels, but rather by grouping students in collaborative communities they call “learning cycles”, set up according to closely related age groups (i.e. K-2, 3-5, 6-8). This grouping strategy allows the teachers to work with students according to their needs and follow their progress over several years as summative evaluation are reserved for the end of a cycle. John adds: “Some groups, working on a specific concept, might have 30 students of different ages while another group might only have four students... both may, at one point, work with a single teacher well versed on the concept in question because they’re not where they’re supposed to be in the program”. According to Mary, the three year groupings give the students more time to assimilate what has to be learned. Since the teachers work in teams of six per “cycle”, and because they have to coordinate their preparation, it gives them the opportunity to collaborate and monitor more closely each student’s individual progress. On the matter of managing the school based on the students’ need, John states that “since we operate in cycles and since we do more monitoring, we have a better picture of where each student is in his learning in regards to the curriculum”.

Both John and Mary insisted on the fact that all planning was done with the idea that every student had to be engaged in his or her individual learning process. To achieve this goal, the school administration actively tries to generate a pedagogical environment where there are more integrative projects related to day to day activities. Every project is related to the curriculum. For example, a math teacher created an activity based on the TV show *Dragon’s Den*, where students make a product and present a financial package to their classmates. They also built a community garden so that students learn how to grow their own food. According to the school administration, the students were more engaged because they were active during the learning process. John

explains: “They work more in group, they move everywhere in the school, they work in the hallway, in [common areas], not just in the classroom.” Working with their peers, students also seem to be more aware of their own strengths and weaknesses. Mary recounts: “In third grade, an eight year old kid went by himself to the teacher and said: ‘Look, I had a hard time with this activity in math, can I put my name [on the board] to receive clinic [time] that would help me with [this math topic]?’ He then put his name on the board to receive a clinic. He took this initiative all by himself”.

### *The teachers’ perspective*

As a condition of their transfer to the new *La Mosaïque du Nord* school, all teachers had to agree to a teaching structure that was non-traditional and student-centered, with learning through authentic and meaningful activities at the heart of their practice. Lori, one of the teachers interviewed in this study, states that she “could not imagine teaching any other way now ... building lesson plans around real-life situations and putting the student in the driver’s seat is, for me, a very effective way to teach”. Francine adds: “They are learning through concrete activities that they can relate to, activities we design in which they are forced to play a more active role”. She continued:

“For example, a group of teachers and I put together a weekly Monday breakfast for the school. My students were in charge of ordering certain foods like granola bars, so I asked them to come up with a survey, distribute it in order to find out how many bars we needed and which kinds to order more of. They were doing science and math, collecting data, building tables and graphs to compare the preferences according to grade level, extrapolating and predicting... and they loved it!”

Teachers are also excited about working in an environment where they are encouraged to take teaching outside the traditional classroom setting. As Phil puts it, “Our students are everywhere... on the floors, in the hallways and other common areas, in the lab, in the multifunctional room, outdoors ... and [he adds with a smile], sometimes even in the classroom”. Jill adds that, for her, “teaching outside the traditional classroom and being encouraged by your principle to do so is extremely fulfilling ... it’s like I won the lottery to be able to teach here!” Beside their apparent inclination towards teaching in non traditional environments, the teachers we interviewed also expressed their support for the school’s team-teaching policy. This policy seems to build professional relationships that serve to stimulate creativity in regards to lesson planning and delivery. As Kim puts it: “Working in as part of a team, I feel supported by both my colleagues and my principle... when I bring an idea to the table, we all work together to make it the best it can be from a learning point of view”. Jennifer, a grade five teacher with over 10 years of experience, shares her opinion on team-teaching since arriving to *La Mosaïque du Nord School*:

“It’s really a team effort here, making sure each student succeeds by getting what he or she needs. At my other school, I was left alone to look after each student, a very difficult task for one person faced with teaching 25 different learners. Here, you are not alone. You plan and often teach as a team and you are certainly expected to seek out assistance in dealing with challenges relating to one student or another’s challenges.”

### *The students’ perspective*

Each of the six students interviewed shared many examples of activities or projects that they found significant and enjoyable. All participants talked about their classroom gardening project. Natalie explains: “We planted flowers, pansies I think. And we planted many different vegetables. We tried to grow celery but it didn’t work”. When asked what they are going to do with the vegetables and the flowers, she specifies that “[they] are going to bring the flowers to a nursing home [and] the vegetables to the school cafeteria”. Another student, Charles, explains that growing vegetables is “not as complicated as [he] first thought and that [he] might start his own garden at home”. Another significant project mentioned during the interviews was the raising of butterflies and fish in the classroom. “We saw it happening [the metamorphosis from cocoon to the butterfly] and when it was done, we released them” explains Shawna. The students also hatched fish eggs in a class aquarium and released the hatchlings into the wild.

It was pointed out that all grade seven students have one-to-one access to a laptop computer, tablet and interactive white boards. For some students, the ubiquitous use of computers, especially tablets, made learning

fun. Melissa explains: “We can use the tablets [for games] once our schoolwork is done and Robert, a fellow student, adds that “[he] learns how to build things while having fun” by using *Minecraft* on the iPad. They all agree that having access to laptops and tablets is one of the things they really like about this new school. Another enjoyable aspect of school life at La Mosaïque du Nord, mentioned by the grade seven participants, was the fact that physical education is offered daily to students of that grade level. Mila indicated: “It’s not like at my old school, here we have physical education every day and that is really, really, really fun and everybody loves it”.

When asked about the school’s educational structure, with combined classes taught by more than a single teacher, participants seemed to appreciate the fact that a team of teachers was involved in making sure they succeeded. Pauline gave an example about learning clinics set up by a team of teachers from a particular cycle to help students with difficulties in a given subject. She explains: “If we understand something, it is a lot more fun then when we don’t ... during our free period, the teachers offer a clinic on something in math we did not understand and students that need extra help can go to that clinic.” Participants also mentioned an appreciation for the changing physical set up of their learning environment. In fact, each classroom is actually the size of two conventional classrooms with a partition to separate the large room into two classrooms when needed. “In the morning, we start off all together and the wall is opened. Then they close the wall and we separate into smaller groups for math and French classes” explains Lina.

#### *The parents’ perspective*

Parents interviewed expressed unanimous appreciation for the school’s decision to structure lesson delivery and evaluation around learning cycles, especially as it relates to assessment. Students are assessed formatively throughout each learning cycle, but summatively only at the end of each cycle. Lisa, mother of a student in the kindergarten to 2nd grade learning cycle and of a student in the 3rd to 5th grade learning cycle, stated that “[the cycles are] really positive and help those who have more difficulty as well as those who are more gifted.” Four of the seven parents interviewed indicated their appreciation for the administration’s decision to have all teachers work in teams. Arthur, father of four students (two in the kindergarten to 2nd grade learning cycle and two in the 3rd to 5th grade learning cycle) explained that every student “has several teachers looking after [his or her] learning... teachers works together a lot... [students] go from one teacher to another, regardless of their actual grade level.” He adds: “I find it really interesting.” Parents also expressed their appreciation the fact that teaching practices encourage self-regulated learning on the part of students, placing them at the centre of the learning process. Alexa, another parent of a student in the 6th to 8th grade learning cycle, says that “[her son] always has to do some research himself... he’s not just sitting at a desk and listening.” Tasks performed by students also encourage self-regulation. For example, they are required to manage electronic portfolios and participate in projects which lead to more self-invested learning. In fact, all teachers at *École La Mosaïque du Nord* implement project-based learning on a regular basis and the parents with whom we spoke all said that their children seem more engaged in their school work. As Arthur put it: “[my child] arrives home passionate about what [he] is doing at school.”

Another major theme identified during parent interviews was a positive impression of the widespread use of technologies in the school by both students and teachers. “[Students] each have a laptop. iPads, iPods... [are] part of learning. It’s part of their tools. It’s as if they have it in their pencil case”, said another parent, Maria, mother of a child in the 6th to 8th grade learning cycle. Others mentioned the integration of research using the Internet, the use of presentation software like PowerPoint and the use of the school district’s web portal for online courses, called Clic, to access and complete school related work (eg, electronic portfolio). Technology is also used by teachers, either by integrating the interactive whiteboard to their lesson plans or by using email and even Clic to communicate with parents. This way of doing things seems to please the parents. Lynn, mother of a student in the kindergarten to 2nd grade learning cycle and of a student in the 6th to 8th grade learning cycle stated that, for her, “email is the best way to communicate”. She adds: “I send something then I get an answer... I think we are more aware of the learning that is happening and also if there are assessments and stuff. ”

Finally, it was apparent from talking to parents that *École La Mosaïque du Nord* is indeed a community focused school. For example, parents talked about the school’s community garden, created through a partnership with a regional organization called Open for Business. They spoke of how this school based community initiative impacts the classroom, as each learning cycle is responsible for growing specific vegetables and herbs, which are supposed to be later harvested and used by the cafeteria as well as other community members. Parents as well as other members of the community participate in different activities organized by the school,

strengthening the ties between school and community. Maria expresses it best when she says that “the community feels that *La Mosaïque* is our school”.

#### 4. Discussion

The following section looks to build on the conceptual framework initially presented. As a guiding framework in response to our three research propositions, the concept of *experiential learning* as defined by Dewey (1997), and later by Kolb (1984), was examined in the context of a newly constructed school designed around a nontraditional pedagogical vision whereby students play an active role in their learning. As suggested by Baxter & Jack (2008), the proposed framework should continue to develop as the study progresses and the relationships between the proposed constructs should emerge as data analysis progresses. Yin (2003) adds that returning to the propositions that initially produced the conceptual framework ensures that the analysis is reasonable in scope. Accordingly, we aim to examine the experiential learning cycle outlined in ELT (Kold, 1984), in light of the conceptual themes inductively discovered after studying the case of *La Mosaïque du Nord* school, by addressing each submitted research proposal one by one.

*Proposal 1: Students will be actively involved (as defined by Kolb, 1984) in tasks associated with an experiential learning based pedagogy.*

Upon examination of emergent themes from all four participant perspectives, it is apparent that student engagement in specifically designed activities is a key focus according to the school’s administration and teachers as well as the parents. It was clear that the administration’s vision of the school included learning through active involvement on the part of the students. It is equally clear the teachers not only share a similar didactic vision, but that they also enjoy the professional freedoms afforded by their superiors in designing engaging activities where students play a very active role in the learning process. The school-wide implementation of team-teaching as a mode of operation has also been embraced by all teaching staff and is viewed as an important component in delivering significant and stimulating lesson plans. Students and parents also spoke fondly of the adopted team-teaching approach, both specifying their impression that the learner benefits from better pedagogical support. This data also seems in line with what Vienneau (2002) refers to as *inclusive pedagogy*, an educational concept founded on five principles, one of which is the “optimal individualization of the teaching-learning process”. In fact, teachers indicated how much they appreciate being encouraged to teach outside the traditional classroom setting. Learning outside the classroom was a common theme from the students’ perspective. They spoke of projects such as community gardening, hands-on science experiments, recycling programs and construction of a miniature golf course for younger students. Finally, parents also confirm that they see their children becoming more responsible, more accountable, as they are called upon by teachers to play a more active role in proposed learning activities. In light of these corroborating themes, across all four perspectives narratives, it is our finding that students are indeed more actively involved in “concrete experiences” (Kolb, 1984) in the case of *La Mosaïque du Nord*, a school focused on experiential learning as a guiding pedagogical approach. Hence, our first research proposition is accepted.

*Proposal 2: Students who move from a school with traditional pedagogical views to a school focused on experiential learning will consider learning to be more enjoyable and, ultimately, more meaningful.*

To examine this particular proposition, we focused primarily on emergent themes from the perspective narrative of students. The fact that *La Mosaïque du Nord* school was only constructed two years ago was central to our ability to compare, from the student’s point of view, learning in a traditional setting to one based on student engagement and authentic experiences. Firstly, students did indeed mention that they found school to be more fun since moving to the case school. They spoke of how much they enjoyed learning through activities like growing flowers in the classroom with the goal of delivering them to a nearby nursing home. Another student spoke of a learning activity in biology where the class grew fish eggs in an aquarium and later released the hatchlings into the wild. In our opinion, such activities, blending social purpose and curriculum, leads to more meaningful educational experiences for students and teachers alike. This community aspect to learning came up often in our interviews and contributes, we believe, to meaningful learning. Students also mentioned that they enjoyed being physically active every day (the school implemented daily physical education) and that they appreciate the integration of technologies in daily learning activities. On that subject, it was pointed out that, in later grades, all students have access to laptop computers as well as tablets, which are sometimes used in such a way as to incorporate gaming and, as Melissa put it, “learning while having fun is a good thing”. In short, our data leads us to consider that a school with an educational approach focused on experiential learning, such is the

case at *La Mosaïque du Nord* school, seems to abate what Dewey (1985) refers to as any potential disconnection to be found between the individual and the experience. Thus, as we pointed out, learning is more meaningful in such a school. We would therefore accept our second research proposition.

*Proposal 3: Students who attend a school focused on experiential learning will not only be more actively involved in various educational tasks, but they will also engage in reflective observation, conceptualization and active experimentation, four stages of an experiential learning cycle according to Kolb (1984).*

As indicated in our interpretation of the first research proposal, we believe that focusing a curriculum on the principles of experiential learning, as a school, leads to higher student engagement and more active involvement of students in educational tasks. In other words, students attending a school focused on experiential learning clearly seem to attain the first stage of an experiential learning cycle according to Kolb's (1984) ELT. As for the three other stages of Kolb's cycle, our case study does not reveal data in support of their integration. In fact, our interpretation of emergent themes, from all four perspective narratives, point to an attaining of higher stages which is mitigated at best. For instance, the collaborative nature of the school seems to lend itself well to meaningful learning projects, which appear to lead, at least potentially, to opportunities for reflective observation, conceptualization and active experimentation on the part of students, all higher stages of Kolb's (1984) ELT. An example of this is one teacher's attempt to build on notions of math and science by organizing regular visits of his grade one class to a neighboring grade two class in order to measure and graph the growth of plants grown for an entirely purpose. Though students were actively observing and reflecting on patterns of growth, were they indeed conceptualizing or even experimenting for that matter? We do not believe so. In fact, we believe that students at *La Mosaïque du Nord* school, though seemingly active in significant and authentic learning activities, do not adequately and consistently attain the three higher levels of a complete experiential learning cycle according to Kolb (1984). Therefore, we must reject our third research proposition and point to the need for further research in ways of fully implementing all four stages of Kolb's cycle.

## 5. Conclusions: Lessons learned

Building on a conceptual framework based on the works of Dewey (1985, 1997) and Kolb (1984), our data points to a clear need for schools looking to implement an educational approach focused on experiential learning to further develop their curriculum in order to better represent all four stages of Kolb's (1984) cycle of experiential learning. In the present case study, we note that *La Mosaïque du Nord* school did in fact succeed in implementing a curriculum based on the principles of experiential learning, albeit on a relatively basic level.

At the start, we posed the following research questions: 1) How do teachers at *La Mosaïque du Nord* school apply theoretical elements of experiential learning, and 2) How do teachers, students, administrators and parents perceive learning at *La Mosaïque du Nord*? To help answer these questions, we first list successfully implemented elements of an experiential learning pedagogy in the case at hand. In the context of *La Mosaïque du Nord* school, we believe the following elements contributed to an educational praxis favoring experiential learning:

- 1) All lesson delivery is done through team-teaching, allowing for more creativity and knowledge sharing.
- 2) The school is designed around learning communities, called "cycles", according to grades (K-2; 3-5; 6-8).
- 3) Technology is optimized to facilitate teaching as well as communication, among teachers and with parents.
- 4) Educational activities are designed to offer authentic and significant learning opportunities.
- 5) Both teachers and administrators look to include the community in some way during the learning process.

In conclusion, in addition to these positive elements, we believe it is relevant to put forth a list of recommendations, based on our findings from the present case study as well as on the works of Dewey (1985, 1997) and Kolb (1984), thus helping to better inform other schools interested in implementing a similar educational approach. Here are those recommendations:

- 1) Teachers and administrator should strive to incorporate more meaningful and concrete involvement on the part of parents and the surrounding community at large.
- 2) Lesson plans should strive to go beyond actively involving the student in the learning process,



- incorporating opportunities for reflective observation in regards to a given concept or notion.
- 3) Students should be encouraged to actively experiment (Kolb, 1984), making predictions around learned concepts within a relevant context, thus leading to more meaningful learning.

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# Why is blended learning for vocationally oriented language teaching?

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## Abstract

In language education, one of the innovations named blended learning has a great impact on language education today. Blended learning combines traditional education practices with a modern technology based education. We cannot ignore personal differences, the importance of self motivation, and the benefits of computer as a material particularly for the young generations who have been grown-up in a computer and internet world today. Particularly VOCLL can be achieved by blended learning as because the learners may need it after graduation at any age at work. Distance learning is these groups' solution and specialized language teaching is very available by blended learning. There is a pressing need to create vocational training possibilities and methods for students in order to adjust them to the labour market. The blended learning aims at working out an effective model for VOCLT, along with the tools and techniques to facilitate the process.

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*Keywords: Blended learning, vocationally oriented language teaching, professional development, ICT using,*

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## 1. Introduction

This paper presents the need of blended learning for vocationally oriented language teaching as a guide for the design of effective learning environments to foster learners' growth related to specialized language learning especially after graduation. In the process of foreign language education, the innovative method of e-learning has been designed for modern curricula and implemented in education sector nowadays. Accessible online learning is a great opportunity almost in every field of study. We are living in a world of technology today and it is inevitable to use the advantages of high technology in the field of information and communication. As far as we consider about the new generations who has a high capacity on using the high technology as an inseparable part of their education and work, it is considerable to use the benefits of ICT. This is the one side of the medal, the other side is the need of specialized language teaching for professions which is called vocationally oriented language teaching is more pressing then the method.

Obviously, it is seen that foreign language teaching is generally based on improving basic language skills such as reading, writing, and speaking and listening in the target language accurately and fluently. The current curriculums designed according to the traditional methods have ignored the need of learning language for work. After university, graduated students cannot use a foreign language (which are European languages in many countries of the world) sufficiently when they attend to a real work for their profession. They are trained to use a language for daily conversation or discuss on a topic or comprehend a text for example a newspaper article or so on, at school according to the school curriculum.

However, the basic language teaching is halfnesS for the graduated students who are engaged to a job after university. This brings a great need for specialized language teaching for work. We call it as vocationally oriented language learning as well.

The need for vocationally oriented language learning is a great need for language learners. It is known that a language has different terminology and patterns for each field of profession. So Business English and Tourism English or English for Mechanic engineering are all different from each other. In every field of profession the target language must be practiced apart from basic daily use of it. For instance, the learners need to use technical

English terminology if they are educated on Electrical Engineering to follow the literature and the innovations in their field for their future career. The importance of vocationally oriented language teaching is noticed by a lot of actors in education sector.

*Another aspect of evaluation that remains on our agenda is the development of instruments measuring the language competencies required for occupational use. Here, once again we have much to learn from the Europeans. (Richard D. Lambert, Autumn, 2001)*

## 2-Why is blended learning?

Vocationally oriented language learning can be taken place in school education curriculum however school time will not supply the demand so besides school education we need to plan another plan for foreign language education after graduation. Learners should be able to keep studying language after they are attended to a job. This suits with the concept of lifelong learning as well. Additionally adult learning will be possible with this new way of learning. Today a lot of FLT authorities and organs stress on need of innovative methods on FLL especially for adults.

Briefly Vocationally oriented language learning is required a new innovative model of learning called **Blended Learning** which combines the advantages of e-learning and traditional learning (classroom teaching). The flexibility of e-learning is linked with the social component of face to face teaching.

In this method old and new instructional methods are blended more technically. According to Clark's *Four Learning Architectures* provide a learning theory rationale for composing a "blended learning" strategy.

- **Receptive** (information acquisition),
- **Directive** (response strengthening),
- **Guided Discovery** (knowledge construction), and
- **Exploratory** (linking to real world tasks and resources).

Blended learning is advised by the actors of language teaching all round the world.

*Blended learning brings benefits and challenges on many levels. A frequently mentioned benefit of online learning is flexibility in time and learning environments (Vaughan, 2007)*

NFLC (The national Foreign Language Centre) which was founded in 1986 states that: *some fundamentals problems in our foreign language (FL) instructional system were identified. To quotation the case statement for the establishment of the centre (Lambert, 1987):*

- (1) *the skills it imparts are too low and too scholastic;*
- (2) *the languages taught were appropriate for the nineteenth century but not for the twenty-first;*
- (3) *the ways of measuring skill acquisition are outmoded;*
- (4) *the levels of instruction are totally unarticulated and accidental; and*
- (5) *no one knows or seems concerned about how much of early foreign training survives to be available for adult use.*

*Rapid evolution of communication technologies has changed language pedagogy and language use, enabling new forms of discourse, new forms of authorship, and new ways to create and participate in communities. (Berkeley, 2006)*

*There is one area where the field's structure of disaggregation serves it well. The widespread availability of personal computers (PCs) for both teacher and learner has brought healthy experimentation in the use of computers in language teaching. These dispersed are provided a national showcase in the meetings of the Computer Assisted language Instructional Consortium. (Richard D. Lambert, Autumn, 2001)*

Before evaluating the advantages of Blended Learning it is necessary to analyze two methods of language teaching; **e-learning** and **traditional learning**.

**2.1 E-learning** is a form of learning which is centred on the use of computer. It is required technical equipment and internet platform. The main characteristics can be defined as:

- teaching materials have to be digitalised;
- tutors, teachers and learners are connected online and have to be connect to each other among themselves
- the materials have to be available in the internet platform
- the learner can decide on the learning procedures including the content, speed of learning, and the time of learning
- The most significant features of e-learning is that it is independent of time and place.

### 2.1.1 The advantages of e-learning...

E-learning model of studying has a great impact and rapid expansion at the end of the last century as it offers a series of advantages:

- learners and teachers work independently from places and times,
- learners can decide the phase of studying by themselves,
- the use of media tools can increase motivation
- the courseware can be updated continuously
- it is possible to access a great amount of information
- all the actors of this study; learners, teachers, tutors and material and testing commissions (if available) can be in contact to each other
- international interaction is possible

In general it can be said that e-learning serves to all kinds of learners promoting equity and inclusion by facilitating the access to learners with disadvantaged backgrounds and fewer opportunities compared to their peers.

These persons have a disadvantage because of personal difficulties or obstacles that limit or prevent them from taking part in traditional classes.

### 2.1.2 Its disadvantages

It is seen that e-learning has some weak sides such as:

- setting an internet platform requires some budget
- the production of courseware and e-tools are required some professionals experienced on this field, and it is generally more expensive than expected
- sitting in front of monitor causes some health problems such as eyes are tired
- learners expect to be tolerated in their individual materials
- self-motivated students/learners are required, so some learners' profile are not suitable for this kind of learning
- the teachers /tutors are lacked of the necessary competence regarding the work with e-tools and i-tools as teaching instruments
- social component which is defined as interaction between teacher and the learner which is important in language teaching as it is communicative competence will be missing on the internet study by themselves of the learners 'self discipline of the students is essential in e-learning, but unfortunately the concentration is low as computer cannot answer the learners' questions

2.2 As to **traditional method**, it has also some advantages besides its disadvantages. The traditional method which is also called face to face classroom education foster the motivation as the tutor guides the learners and the learners has a good chance to ask every question while he/she is studying . The learner is encouraged by the tutor. However Traditional method is boring and the only equipment it needs is the teacher and the teaching materials; books. It has no digital help. When we think about our young generations it is clear that he/she is addicted to modern technology and work out every job by computer digitally.

Generally this method of teaching is characterized by the following details:

- there is a good social contact with the learners and the teachers
- the teacher can immediately can interference to any process which takes place during the lesson
- the learners are more confident as they have a chance to ask the teacher when they meet a problem relating with their course , they can ask every detail to be answered to the teacher
- immediate reactions are possible according to the attitudes of the learners
- older learners like old methods and feel more ease with traditional forms

## 3-What is Blended learning?

Blended learning combines traditional education practices with a modern technology based approach. In other

words, it combines e- learning and class education which is called as face to face education.

### 3.1 What is the aim of blended learning?

We can explain it with the words of Richard Otto.

*Blended Learning aims orchestrating an effective composition of learning experiences. Instructional design has a long history of 'blending' 'classroom work with homework, field trips, labs, reading assignments, and audio-visual media. However, what is new in this era of blended learning are the powerful modes of online synchronous and asynchronous activities, and technology-based instructional methods which can now be added to the mix. (Richard Otto, Cognitive Design Solutions, 1993)*

### 3.2 The Benefits of Blended Learning for Language Learning

Learning technologies play an increasingly important part in higher education worldwide. Although Blended Learning is gaining importance it is needed to be promoted by universities. Because it has the advantages as follows:

- It supplies Independence from time and place,
- It is flexible and autonomous studying
- As a great communicative aspect it is possible to be in contact with other course members
- Diverse levels of knowledge at the beginning of a course can be balanced individually without obstructing the other students
- The activities can be worked as more balanced such as intensive exercises like writing or grammar can be done separately at home
- It gives chance to learners to follow their own speed of learning apart from the other learners
- Teachers can control the monitor and assess the students' progress during the face –to face seminars

Nowadays, in Turkey unemployment is a big issue and it is certain that proficiency in other languages is a key element in the ability of an individual to take up employment and vocational education and training (VET) opportunities beyond their national borders in any country within the European Union.

Vocationally oriented language learning' (VOLL) is necessary to be capable of using a foreign language for work. For example in tourism sector a specialized language training must be in the school curricula because a worker in tourism sector must have some intercultural qualifications and intended international qualifications of a person is connected to a series of competences which are based on intercultural knowledge and abilities. Intercultural communication will be successful among employees as the tourism sector, if they acquire adequate oral and written language skills (skills, idioms, specialist terminology, pronunciation, intonation). The other examples can be given for other professions. Business English gives a lot of opportunities to a Turkish university graduated in his/her career. When you use English in your work it means you can operate internationally in business sector and it brings you success.

Absolutely, it is clear that foreign languages must be designed as vocationally oriented. The point that must be caught here is that how we can serve this vocationally oriented language to our learners. In Turkey, majority of the curricula of foreign language teaching has been designed according to the traditional method. It comprises face to face education in classes using books as teaching tools.

Distance learning practices are developing but they are not specialized for professions. Basic language skills – speaking, listening, writing and reading- are gained at the end of the teaching process.

The matter is that learning a foreign language for a professional is not the obstacle of university students, there are a great number of people who are engaged to a job are in need of using a foreign language for work. They are adults and they do not have a chance to attend to a school to learn a language. There are some people who try hard to attend to private courses to learn it after the job, but it is tiring and boring and not very successful.

Considerably there are few opportunities to have a specialized language in these courses.

Blended learning is a solution to all these matter. Employed people can be involved in e-learning as it is available. Internet connection and a laptop or a smart phone is enough. The learner decides his/her time and phase himself/herself. Self motivation, self discipline is essential and learner's autonomy is in the centre of e-learning. Learner's autonomy puts the stress out that is a constraint in front of language learning. Stress is an

undesirable effective factor in language learning. Working people can be involved in classes which are in blended learning to solve the problems in e-learning or learning process face to face in fixed class times.

So it will be considerably important to take into consideration the aspect of learners' self motivation.

How the use of information and communication technologies (ICTs) considerably enhances language learning processes and outline some of the theoretical factors will be considered when designing multimedia applications in the context of blended learning. Media elements can be used to foster both online and offline learning situations. As it is well-known videos and audio and animation are fruitful elements used in blended learning environments.

The paper concludes with a short overview of the main principles of quality and evaluative criteria to be applied

to teaching approaches within language learning environments. Blended learning is very appropriate for Vocationally oriented Language Learning.

**Consequently**, it can be said that because of some major factors especially for Vocationally oriented Language

Learning, blended learning is essential. Blended learning meets the needs of language learning for work.

- Learners can have time and opportunities after their university education to promote their language training by means of e-learning as it is free from time and place,
- Learners need to be guided by tutor in a class environment to ask their questions and constraints about learning and blended learning give this chance to the learners not taking their much time. It is important as majority of the learners will have a job,
- Individual differences and theory of multiple intelligences can be considered important in blended learning. Different learners have preferences about learning styles,
- *Different learners have preferences about learning styles (i.e., auditory, visual, kinaesthetic, tactile; introvert / extravert; independent / social collaborative). Inventory (1971) that includes the following learning styles as combinations of the characteristics of observation, experience, thinking and action: Assimilating Style (planner), Converging Style (decision-maker), Diverging Style (creator), and Accommodating Style (doer). These preferences are based on how a learner processes information. Providing learning events that engage the learner's strengths is always desired. The blended approach allows a wide variety of learning styles to be engaged. (2003 Cognitive Design Solutions, Inc.)*
- In internet platform it is more possible to practice target language with the other learners and it is a good practice for a learner who learns specialized language for work,
- Blended learning with the help of e-learning can serve training for adults; hence adult learners who are in need of using their foreign languages for work can be benefited,
- Vocationally oriented language learning is easier and faster with e-tools (computer-mediated activities) and more practice is possible,
- It brings people together from all over the world it support a high vision of adult learners who learn it for work,
- E-learning offers interesting business opportunities,
- As blended learning is run with motivated students the aim is achieved in shorter time than traditional method,
- Blended learning can serve to a great number of learners in many professions and it is a great advantage for education sector,
- *According to a 2009 meta study from the Department of Education: "Students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction." Students who mix online learning with traditional coursework (i.e. blended learning) do even better. (Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies, United States Department of Education)*
- Sectors in work can be involved in blended learning as a in-service training for their workers' capacity development for foreign language

Language learning experiences all round the world today has brought up that language learning dynamics away from traditional exercises such as grammatical accuracy exercises dominated in class teaching whereas meaningful communications in chat rooms gives more than long-standing class courses. Chat rooms are discussion spaces for the learners and they can construct their own language learning environment. Learners feel more comfortable and ask their friends for a definition or other help like vocabularies. Chat rooms are can only be possible in online learning environment that is essential in blended learning and blended learning do not leave class teaching for some reasons. The most important one of these reasons is to solve the problems in learning and ask some questions to the teacher. Actually you can do a variety of fruitful exercises in your computer and e-tools supply learners a very enjoyable learning source but cannot answer the learners' questions.

#### 4. Conclusions

Conclusively, It can be said that use of blended learning for vocationally-oriented language teaching offers a model for integrating technology into language learning and we must remember that an ideal language learning always respond to the need in terms of pedagogical goals and methodological appropriateness. In Foreign Language learning vocationally specialized language should be targeted in higher education curricula it can be expanded as language for work besides current foreign language teaching depending on teaching some language skills. General language teaching is necessary but it is not sufficient so language for specific purposes must be developed.

*A good general course should contain an introduction to needs analysis, independent learning, education technology, discourse analysis and genre analysis, and should develop awareness of individual learner characteristics and the frameworks of inter-cultural differences- all highly relevant to LSP teaching. (Ron Howard Gillian Brown 1997).*

In this content, the schools of language teacher training should be planned and developed to respond this need urgently. Language for specific purposes must be promoted urgently in all levels of education from secondary education to tertiary level.

Additionally foreign language training for work is not the job of education sector it is a matter of the business world. So, in adult education after university, learning English or German etc is a matter of the companies which aims to promote the qualifications of their employees. That's why this is a major subject of the in-service training facilities or projects today.

Blended learning meets the needs not pedagogically but as a method which serves the best learning environment where self-autonomy is essential. The profile of the learners of specialized English or German etc need a way to learn a foreign language for work as it is described here, it is blended learning. It is the future of foreign language learning in today's digital, electronic, computer based and internet world.

This article also points to areas that merit further analysis from an LSP perspective, such as the use of different technologies, using of ICT and modes for effective learning, innovative approaches to language learning and specific analysis of specialized texts, and the integration into LSP (Language for specific purposes (Vocationally oriented language learning) and social cohesion of it.

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# Women included engineering education in Korea

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## Abstract

Women in engineering subject were developed for women included engineering education in Korea. Women in the predominantly male-oriented college of engineering which is afflicted by the high dropout rate and the low employment rate of coeds in their majoring fields because of the die-hard male dominant culture. In order to resolve the related problems, Our University has been actively engaged in a movement called "Women into Engineering" (WIE) to raise the gender cognitive awareness and to train women engineers for highly qualified work force. As part of the movement, a subject called "Women in Engineering" that focuses on the gender cognitive perspective is effective to reduce the dropout rate and to land a job inside their fields by stimulating their interest in their specialty made soft/hard skills.

The study was conducted a survey of the coeds who have completed the "Women in Engineering" course to evaluate the degree of satisfaction perceived, and was compared the group of the coeds and a group of coeds who have not taken the course. The results showed statistically significant responses indicating that both groups of coeds would like to see WIE offer more basic engineering courses like "Women in Engineering.". This may lay the foundation to offer other major engineering courses for juniors and seniors that emphasize the gender cognitive approach.

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*Keywords:* Women in Engineering, Engineering subject, female engineering

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## Introduction

One of the most important growth engineering industries for the next generation is highly-skilled manpower. Since a half of the national population can be female human resources, nurturing female engineers is a very important task.[1] Additionally, manufacturing products well appealing to women is also important as more than 50% of domestic consumers are female. Universities have so far tried to offer gender-cognitive perspective by introducing various female related subjects including women's studies. It contributed to the elimination of patriarchy and promotion of gender equality education. However, 73% of the engineering majors are male in our University known to have the highest number of female students in Korea. On top of that, the female entry rate into the engineering field remains at a mere 50%. Aggressively competing with males already dominant in the engineering field was regarded as the only way to increase the female employment rate as long as the number of jobs stays still[2]. However, with the emergence of 'alpha girls' and female emotional engineering that will lead the industries in the future, more females should advance into engineering to create emotional business strategies and blue ocean strategies. In line with that, new female engineering subject were introduced and lectured. And the achievement of the subject was analyzed by conducting a lecture evaluation and surveys and tracking careers of female engineering majors.

Until the 1960s, the main industry was the male-dominant primary industry where most of the operation was done by manpower. However, in this modern society, the tertiary industry where emotional engineering plays an important role became the mainstream. Therefore, introducing new subjects related to female engineering and promoting university education in the sector became important.

This dissertation aims to mention the necessity of studies that can be a basis of gender-cognitive engineering education. Another goal is to develop and disseminate cultural subjects for engineering majors to nurture highly-skilled female engineers by teaching the female students an emotional engineering approach in their career planning.

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## Existing female related subjects

Before setting up new subjects, the existing subjects that can teach female engineering majors the role of female and their future career direction were surveyed. Most of the female subjects in universities can be divided into the following three categories. The first category includes 'Women's Studies' focusing on feminism and gender equality, 'Women and The law' that can enhance women's right, 'Women and Politics', 'Women and The economy', 'Women's Right', 'Women and Society', 'Women's Welfare', 'Women's Policy' and 'Women's Employment'.

Table 1 Women related subjects being taught in universities in Korea

Subject Title	University	Department
Women and the Law	Korea	All departments
Women and Politics	Kyunghee	Political Science and Diplomacy
Women and the Economy	Korea	Cultural Studies
Women's Right and Protection	Dongguk	Cultural Studies
Women and Society	Seoul Nat'l	Cultural Studies
Women's Welfare	Sungkyunkwan	Women's Studies Major
Women's Policy	Ewha W.	Public Administration
Women's Employment	Seogang	Women's Studies Major
Women & Literature	Seoul Nat'l	German Language& Literature
Women & Media	Sookmyung W.	Information and Broadcasting Major
Women & Psychology	Myongji	Cultural Studies
Women's Studies	Yonsei	Cultural Studies
Introduction to Women's Studies	Korea	Cultural Studies
Understanding Women's Studies	Kyungpook Nat'l	Cultural Studies
Women's Leadership	Hankook Univ. of Foreign Studies	Special Cultural Studies
Women and successful Employment Strategy	Chungnam Nat'l	Cultural Studies
Elite Women's Leadership	Sungshin W.	Outside Training Course
Female Engineer and Leadership	Sungkyunkwan	Cultural Studies
Female Engineer and Expertise	Ewha W.	Engineering Majors
Women and Labor	Chungang	Cultural Studies
The History of Korea Women	Yonsei	Cultural Studies
Women and Exercise	Kangnung Nat'l	Cultural Studies
Course related subject	Yonsei	Junior seminar
Women Work and Job	Ewha W.	Job related subject
A college woman course plan and employment	Chosun	Employment related subject
Women and Job	Pusan Nat'l	Cultural Studies

The second category includes 'women and literature' with a psychological approach of women, 'women and media' and 'women and psychology'. The third category includes 'women and engineering', and 'women and technology' which hold significance. Related 'women and leadership' and 'women's career exploration' are also considered significant. However, there are no suitable books for female engineering majors in Korea. Planning and conducting lectures are mostly done by outside lecturers. Considering such circumstances, we introduced new subjects for female engineering majors, developed books and sought ways to offer female students a future direction.

## Female Engineering Subjects Developed

The newly developed 'Female Engineering' was a two-hour class with two credits. The aim of the class is the following: first, teaching the difference between 'Gender' and 'Sex', and their definitions; second, helping female engineering majors collect, organize and analyze basic knowledge; third, motivating female students to study on successful cases of female engineers and build up their own capacity and vision by using the data; fourth, building up female students' ability to collect, analyze, listen to, present data and make a report; fifth, emphasizing the utilization of female manpower as one of the next generation growth engines. In other words, the overall goal of the class is to help female students have a clear vision of their engineering majors by encouraging them to advance into the engineering field and contributing to the national industrial growth.

The lecture focused on making the students understand the current status, role and prospect of female engineering majors in and abroad. It also emphasized the gender-cognitive perspective on female engineering education. Boosting interests of female engineer majors in their majors by teaching the relations among the majors was another focus of the lecture. It also promoted successful entry of females into the engineering field. The lecture was designed to eliminate the existing concept that female engineering divides engineering education into female education and male education. When providing career planning education, universities tried to consider gender cognitive perspectives and eliminate gender discrimination though there is a biological and emotional difference. The lecture was conducted along with discussion, presentation, on-the-spot study and invitation lecture to introduce successful contribution cases of skilled female engineers to the society and industries, and help the students develop themselves. The lecture was monitored and improved through pre and post surveys. Presentation score accounted for 10% of the total score to encourage asking questions and presenting opinions during the lecture. Assignment and attendance accounted for 80% and 10% respectively of the total score. When the lecture was first introduced, not many students took a course as they were not informed well of the contents. Therefore, lecture plans and contents were advertised through web sites or bulletin boards. Frequent invitation lectures might distract students away from the focus of the lecture. During the lecture, we allowed students to get the sense of the working field by inviting successful entrepreneurs or seniors to give a lecture of 30 to 60 minutes. Unlike major subjects, cultural studies easily fail to continuously grab the students' attention during the class.

Therefore, discussion and evaluation based on presentation performance were adopted to bring about voluntary participation and interests of the students. With consultations with outside organization such as Business Women's Association, CEOs and experts were invited to give a lecture on gender cognitive education. With the signing of MOU with Korea IT Business Women's Association, invitation lecturers for one semester were selected in advance.

Table 2 Weekly Lecture Plan

Week	Title	Content.
1	Introduction to Women in Engineering	Introducing related materials
2	Definition of Engineering	Optimization Process
3	Gender Engineering	Introduction of Emotional Engineering
4	Gender-Cognitive Concept & Boosting Power	Invitation Lecture
5	Current Status of Female Engineers In & Abroad	WIST Report
6	Social Role of Female Engineers	Data from the Ministry of Knowledge Economy
7	Obstacles of Female Engineers	Data related to the Ministry of Gender Equality
8	Female Blue Ocean Strategy	Case Study
9	Feminist & Alpha girl	Case Study
10	Gender communication	Case Study
11	Women leadership	Invitation Lecture
12	Emotional Business Strategy	Case Study
13	Future of Female Engineers	Student Presentation

Evaluation method was designed to encourage the submission of various types of reports. To enhance presentation skills, create motivation and build up leadership of students, reports were submitted in audio file and video scripts. Males and females were given enough time to discuss with each other, and the qualification of the discussion was evaluated in 10 levels.

Analysis of the lecture was done by conducting pre and post surveys. The feedback data was used to enhance the lecture quality. A new textbook is developed and scheduled to be published. Lecturers were also allowed to use fast changing statistics and internet data. The lecture was designed to give internet-savvy students an accurate concept of gender-sensitive perspectives. Each chapter of the book selected female as a team leader or an expert, and presented discussion topics with which female students should play a leading role. It also encourages females

to lead team activities such as presiding meetings. When it comes to male students, the book aims to remove the prejudice against female students. As for female students, it offers an opportunity to renew their understanding of gender role and build self-leading learning skills and leadership.

### Operation Results Of The Female Engineering Subject

Survey was done before and after the lecture in the form of both subjective and objective questions. Fig. 1 is the result of survey after the lecture. The question was 'Is the female engineering subject beneficial to female engineering education?' 84% of the students who took the course responded positively.

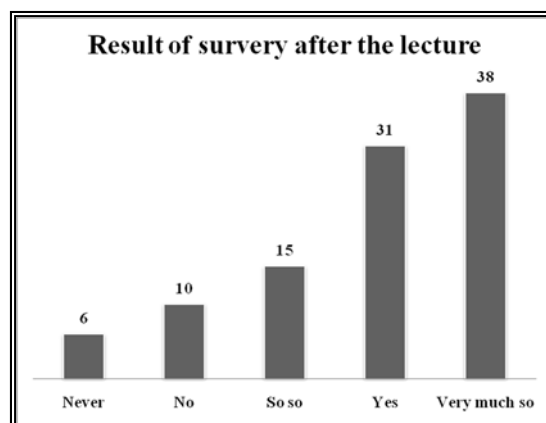


Fig. 1 . Result summary of evaluation with objective questions after the lecture in the 1st semester of 2008 year.

During the lecture evaluation in the form of subjective question, students were asked to write their thoughts on what satisfied and dissatisfied them during the female engineering lecture. According to the responses, the lecture was successful. Below is the summary of the most common responses.

- *I got to understand the concept of gender-cognitive engineering education. It made me proud of studying engineering as a female.*
- *Through the invitation lectures, I realized there are many successful senior engineers. That motivated me to challenge.*
- *I got to think more seriously about my major and be proud of it.*
- *It was encouraging to study and compete with other engineering majors.*
- *It was unusual and fresh to learn from various lecturers thanks to the invitation lectures.*
- *It seems there is a limit in obtaining practical information appropriate for each department.*

Related to the 'Women and Engineering' course developed, almost 2000 subjects (as of January 2008) were introduced in Pukyong University over one semester. One of them received the 'Best Lecture' award based on the results of lecture evaluation.

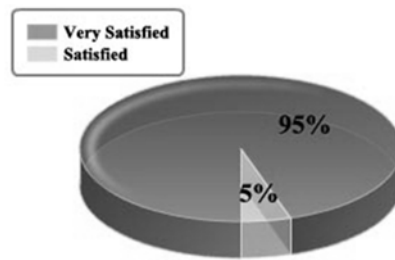


Fig. 2 Result summary of evaluation with objective questions after the lecture in the second semester in 2008

## Conclusion

The new subject was developed to provide gender-cognitive engineering education. In addition, the lecture was established to teach female engineering majors an emotional engineering approach in deciding their future careers. As a result, the subject was proved to induce interests in engineering from female students. It also helped them advance into the engineering fields. With the female emotional engineering approach, coexistence and communication rather than competition with males were emphasized. It also received favorable comments from the students. Therefore, it will be great to adopt 'Women and Engineering' as one of the cultural studies for all engineering majors. We hope the subject will be spread to other universities to generate more highly-skilled female engineers in Korea

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# Work, games and lifelong learning in the 21<sup>st</sup> century

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## Abstract

The digital revolution of the last two decades has introduced major changes in the different spheres of human activities, from professional, academic to social spheres. Information and Communication Technologies (ICT) has facilitated communication and permitted new forms of work and learning, overcoming the traditional constraints of time and space. Nowadays, the frontiers of work, learning and social activities of the knowledge workers have blurred in the same digital environment, making the shifting possibilities between activities easier than ever. Digital leisure activities, such social networking and gaming have also entered the digital environment, increasing the opportunities of distraction from work, learning and social activities. Knowledge workers of the 21<sup>st</sup> century should develop a new Work Lifelong Learning Balance (WLLB) in order to ensure to maintain their professional, family, social, personal and lifelong learning balance.

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*Keywords:* Type your keywords here, separated by semicolons ;

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## Work Lifelong Learning Balance

The rapid knowledge emergence and obsolescence in the 21<sup>st</sup> century is generating new societal challenges. Individuals and organizations are required to embrace Lifelong Learning (LLL) strategies in order to remain competitive in the globalized world. The 21<sup>st</sup> century citizen should not only try to achieve a Work Life Balance (WLB) but a Work Lifelong Learning Balance (WLLB) in order to keep updated and adapt to the evolution of the professional careers. At the same time, Information and Communication Technologies (ICT) has contributed to the acceleration of the knowledge (co)creation and worldwide just-in-time access, but has also become one of the main supporters of Lifelong Learning through informal and formal learning resources, activities and courses offered in blended and online learning modalities. In this context, digital literacy has become one of the key competencies of the 21<sup>st</sup> century.

## *Positive Lifelong Learning Experiences*

The 21<sup>st</sup> century citizen is required to develop 21<sup>st</sup> century skills in order to adapt to the knowledge evolution and technological innovations in the workplace. The 21<sup>st</sup> century context requires a new set of competences beyond the obvious ICT literacy: communication, collaboration, social and cultural skills, creativity, critical thinking, problem-solving, productivity in a globalized world, learning to learn skills, self-direction, planning, flexibility, risk taking, conflict management and a sense of initiative and entrepreneurship (Voogt & Pareja Roblin, 2012). These 21<sup>st</sup> century skills require a learner centered approach to provide positive and meaningful lifelong learning experiences through active learning approaches. Prince defines active learning as “any instructional method that engages students in the learning process” (p. 223). Learners’ engagement in a learning activity results from the combination of the learners’ willingness to participate in the learning activities and the efforts the learner engages during the efficient time-on-task (Romero, 2012). Coates (2005, p. 26) defines learners’ engagement as “the extent to which students are actively involved in a variety of educational activities that are likely to lead to high quality learning”. Coates highlight the active role of the learner in the activity that is required for achieving the learners’ engagement. The learners’ engagement has been considered as a continuum with different degrees of engagement, from disengagement to the experience of flow, considered by Csikszentmihalyi (1991) as the complete engagement or absorption in an activity. In the state of flow “the sense of duration of time is altered; hours pass by in minutes, and minutes can stretch out to seem like hours” (p. 49). Csikszentmihalyi identifies the playing activity as one of the activities that helps players’ “achieve an ordered state of mind that is highly enjoyable” (p. 72). Game-Based Learning (GBL) is experiencing an increasing

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acceptance in the lifelong learning context as an active learning methodology, which could engage learners' in the 21<sup>st</sup> century skills (Prensky, 2002; Steinkuehler, Squire, & Barab, 2012) and provides a positive learning experience. We explore in the next section different types of GBL which could contribute to achieve the lifelong learning challenges through engaging and positive gaming experiences.

### Game-Based Learning: from Serious Games to Gamification

Game is a form of “organized play” (Prensky, 2001, p. 119), “an activity, in which participants follow prescribed rules that differ from those of real life [while] striving to attain a challenging goal” (Heinich, Molenda, Russell, & Smaldino, 2002, p. 10). The use of games for educational purposes shows a great diversity. The GBL spectrum ranges from ad-hoc designed digital serious games which allies learning objectives in a game universe with a certain cognitive and visual immersion and gameplay to gamification as “the use of game design elements in non-game contexts” (Deterding, Dixon, Khaled, & Nacke, 2011, p.1).

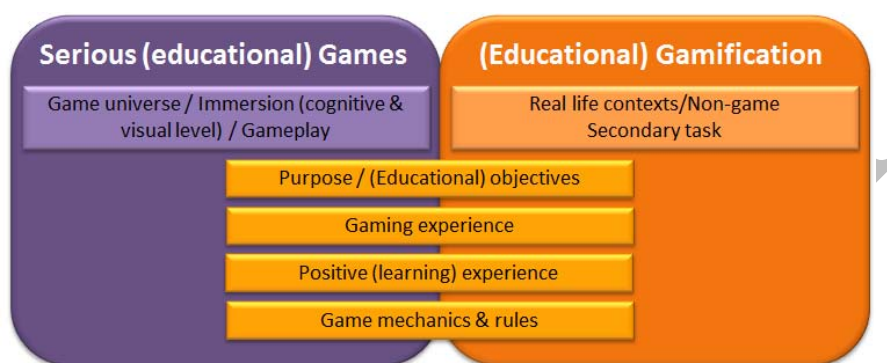


Fig. 1. Serious (educational) games and (educational) gamification.

Figure 1 shows the core elements of serious games and the differences between serious games and gamification in educational contexts. Both serious games and gamification aim to support the learning objectives of the player/learner through a positive learning and gaming experience. In both cases, the game mechanics and rules serves to create positive learning and gaming experience, for example, introducing competitive rules and a scoring system or challenging the player in the learning progress through different missions and battles. The main difference between serious games and gamification lies on the existence of a digital game universe with a certain cognitive and visual engagement in serious games. Otherwise, gamification is a kind of “game-based layer” to real life contexts, where the game elements are a secondary layer of the reality. Choosing between a serious games or a gamification strategy is a decision-making which should take into account not only the learning objectives but also the learners’ context analysis in order to define which are the learning needs, the organization needs and resources and the constraints to be considered in the GBL activity design.

### HEXA-GBL, a methodology for GBL design and evaluation

The HEXA-GBL is a six-phase methodology for designing and evaluating GBL activities from a learner centered perspective. The HEXA-GBL design and evaluation is organized in six steps. The first four phases focus on the game design activity, from the learning objectives definition, the learner-centered need analysis, and the definition of the game modalities, mechanics and rules. The final two phases focus on the play activity evaluation from the perspective of the learning outcomes, assessment and feedback, but also from the learners’ gaming and learning experience during the GBL activity.



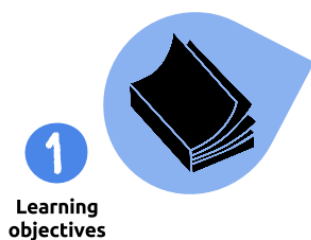
Fig. 2. HEXA-GBL, a methodology for GBL design and evaluation.

Through our step-by-step methodology we aim to facilitate the decision-making concerning the type of GBL activity and its modalities that could better fit to the learning objectives, the learners' needs and the (in)formal education context and resources. When engaging in the design of a GBL activity we aim to achieve the goals of learning and gaming experience adapting the GBL type, modalities, artifacts and complexity to the learners' needs and context. We aim to overcome the barriers of GBL in terms of costs (reusing and repurposing existing artifacts, or creating new ones), focusing on the game mechanics and the different possibilities of operationalization with high and low tech solutions and adapting the design process to normal-human teachers and professors, which have not always all the superpowers involving game design.

The table below introduces the methodological procedure and reflective questions in each of the six steps of the HEXA-GBL methodology.

Table 1. HEXA-GBL methodology.

HEXA-GBL phase	Objectives
1. Learning objectives	<ul style="list-style-type: none"> <li>• Learning objectives are the key point in starting to design the GBL activity.</li> <li>• Identification of the formal or informal learning context <ul style="list-style-type: none"> <li>◦ In context of formal education, curriculum integration should be considered.</li> <li>◦ In context of informal education, the learner/parents/educators should define the learning objectives in relation to the personal development</li> </ul> </li> <li>• Identification of the primary and secondary learning objectives in terms of knowledge or 21<sup>st</sup> century skills.</li> <li>• Define which of the learning objectives will be part of the learning assessment and which type of feedback or group awareness will be offered as a display of progression to the learners during the game or gamification activity.</li> </ul>





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## 2. Learner-centered need analysis



- Decision making in relation to the learners' prior knowledge and competences (PKC)
- Analysis of prior knowledge and competences (PKC) of the learners. Decide if the PKC (1) will be analyzed before starting the game (or is already available), (2) will be declared by the learners' themselves or (3) will be integrated as a part of the game.
- Analyze (expected) diversity among learners' based (if possible) in PKC.
- Evaluate the distance between learners' prior knowledge and competences and the learning objectives ones.
- Organize the learning objectives in levels considering two main theories (ZDP, Flow).
- Organize the learning paths according to the learners' diversity and the game modalities
  - If individual game, possibility to make players start at a certain level according to the prior knowledge/competences
  - If game engaging teams, possibility to create cooperative game dynamics to deal with intragroup diversity
- Decision making in relation to the learners' preferences and characteristics (individualistic), the context and resources available, and the language needs, especially if you are not in an English speaking community.

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## 3. Game modalities



- Decision making for choosing the type of GBL modality
  - Firstly, start identifying the existing SG according to the learning objectives. If a SG already exists and matches your learners' needs, and organization resources and constraints you can choose it.
  - Secondly, if the SG you have identified in the previous step only matches partially the learning objectives or the learners' needs you can analyze the possibility to adapt the game (if possible).
  - Thirdly, if the existing SG could not be adapted you can consider the possibility to design and create your own game. If you have enough resources you can collaborate with professional developers; if not, you can use one of the game design platforms freely available (e.g. Scratch, Ren'Py...).
  - Fourthly, an alternative to game creation could be to repurpose an existing game, such as using Angry Birds for learning mathematics.
  - Finally, you can opt for educational gamification and add the game components you have identified to better fit your learning objectives and learner centered analysis of the context (e.g. public scoring and competitive team, reward system...).

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## 4. Game mechanics and rules



- Decision making in relation to the game mechanics and rules intended to engage the learner in the gaming and learning experience.
    - Firstly, take into account the individual or collaborative nature of the learning objectives (first phase of the HEXA-GBL methodology) and the learner centered need analysis (second phase). For example, if learners lack participation in knowledge construction in the context of a biology course, the game mechanics could encourage intragroup cooperation and intergroup competition in a text-based environment.
    - Secondly, the game rules should be aligned with the learning objectives (first phase) and the learning assessment and feedback (fifth phase) in order to incentivize the learning progression in the game.
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## 5. Learning assessment and feedback



- The last two phases of the HEXA-GBL methodology aim to analyze the effective impact of the game on the learning objective achievement but also on the gaming experience (sixth phase). Assessment is an essential part of the GBL activity. Without an appropriate assessment of the learning progression and outcomes the end-user could have the perception of being engaged in a playful activity that was not related to the learning objectives (first phase).
- The learning assessment and feedback should derive from the learning objectives (first phase). According to the needs identified in the second phase (learner-centered need analysis), there are three main types of assessment that could be introduced in the game: diagnostic, formative and summative assessment.
- For each of the learning assessment integrated in the game, there is the possibility to provide feedback to the individual learner/player, and even go further, and share the diagnostic/formative/summative assessments among the team or the group of players through knowledge group awareness widgets (Pifarré, Cobos, & Argelagós, 2014; Romero et al. 2012).
- The GBL learning assessment should be considered according to the different time of the game. Usually, the diagnostic assessment is done before or at the early moments of the game, through a first mission which helps to situate the prior knowledge and skills of the learner. The diagnostic assessment could be useful in collaborative gaming mechanics to allow certain forms of group creation which can promote intragroup and intergroup cooperation and competition dynamics. During the game, the continuous assessment of the learning progression and its individual or collective reflection could contribute to the self-regulation process (Panadero & Romero, 2014) and the development of the knowledge group awareness. Finally, the game could provide the learner with a final assessment feedback, which could be related to the game score. The learning outcomes of GBL activity could contribute to knowledge and skills recognition in terms of the formal education curricular objectives. In informal settings, there is a growing use of badges as learning outcome recognition. Antin and Churchill (2011) define badges as “virtual goods”, “digital artifacts that have some visual representation which are awarded to users who complete specific activities” (p. 10-11).
- Last but not least, there is a need to define the assessment agent. While some serious games embed (artificial intelligence) modules to deploy the learning assessment, and event, to adapt to the learner progression, the assessment could be also done by the teacher, through peer assessment and self-assessment. The combination of different assessment agents could improve the quality and accuracy of the assessment related to the GBL activity.

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## 6. Gaming and learning experience



- All previous phases are not enough to ensuring a GBL experience from a player centered point of view. The pedagogical and playful (best) intentions could sometimes not achieve the desired objectives in terms of the positive gaming experience. We should accept that (a playful) gaming experience is recognized by a learner having been engaged as a player in the activity. This last phase aims to evaluate the player gaming and (positive) learning experience.
- According to Kiili (2005, p. 14) “Games are designed to generate a positive affect in players and are most successful and engaging when they facilitate the flow experience”. Kiili focus on the importance of immediate feedback, clear goals and challenges that are matched with the current learners’ knowledge and skills to place them in the flow activity state. Sweetser and Wyeth (2005) propose to analyze the enjoyment of games through the analysis of eight elements (concentration, challenge, skills, control, clear goals, feedback, immersion, and social interaction).

## Discussion

The HEXA-GBL methodology aims to facilitate GBL design and evaluation through a step-by-step methodology focused on the core questions of design and evaluation of GBL from a learner-player-centered approach. Through our step-by-step methodology we aim to facilitate the decision-making concerning the type of GBL activity (serious game, repurposed game, gamification) that could better fit to the learning objectives, the learners' needs and the (in)formal education context and resources. When engaging in the design of a GBL activity we aim to achieve the goals of learning and gaming experience adapting the GBL type, modalities, artifacts and complexity to the learners' needs and context. The HEXA-GBL methodology is not only conceived for resourceful educators and the game industry, but aims to facilitate the GBL design and evaluation in contexts where there is a lack of human (time, skills, knowledge), monetary or technological resources to consider making an ad hoc game design. We aim to overcome the barriers of GBL in terms of costs (reusing and repurposing existing artifacts, or creating new ones), focusing on the game mechanics and the different possibilities of operationalization with high and low tech solutions. The HEXA-GBL process is for normal-human teachers and professors, which do not always have all the superpowers and resources required for a creating from scratch a professional pricey game. GBL relies on the ability of the teacher to propose an engaging positive learning experience to the learners founded on some of the game mechanics and rules in a way that supports achieving a learner-centered gaming experience.

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# **Work-based blended learning and technological scaffolding system to enhance communication skills for caregivers under Local Administrative Organization, Ministry of Interior, Thailand (Part I)**

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## **Abstract**

Communication skills are very important factors which contribute to success in every career in the 21<sup>st</sup> century. Professional development plans for future caregivers; therefore, should include developing these skills. Caregivers are adult learners for a bachelor's degree in the field of early childhood education, so learning by doing during work is the most effective method of acquiring new skills. They need to learn how to use technology in developing communication skills, studying the content of early childhood education, and working at Childcare Centers. This study investigated work-based blended learning and technological scaffolding system and found out how they enhance the caregivers' communication skills. The study was divided into three phases. Phase one was studying existing theories and research about work-based learning, blended learning and scaffolding. Phase two was developing the communication system for the study. Phase three was interviewing experts about the developed system. The synthesis and content analysis identified that the system included five components: Job, Learning Activities, Technology, Evaluations and Key stakeholders. The system's process consisted of Preparation, Analysis, Planning, Learning, Discussion and Evaluation. The scaffolding included Job aid scaffolding, Stakeholder scaffolding and Resource scaffolding. The result of study will be used as a system for teaching communication skills development for caregivers in Thailand.

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*Keywords:* Communication skills; Work-based learning; Blended learning; Scaffolding; Caregivers.

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## **1. Introduction**

Effective communication is widely accepted as a foundation skill that people needed to be succeeding in a workplace (Schulz, 2008; Evans, Waite & Admasachew, 2008). Nowadays, power of modern media and ubiquity of communication that affect people all over areas including education. For many years, several countries have been interested in developing and preparing teachers to adopt technology for communication skills. For example, the National Association for the Education of Young Children (NAEYC, 2012) states that early childhood teacher candidates should know variety of communication skills and use technology as a professional resource to communicate with families, with children, with peers.

Ministry of Education (MOE), Thailand was announced Thai Qualifications Framework for Higher Education (TQF) as a standard guideline in the quality of an academic award titles for higher education. The framework describes that the expected increasing levels of knowledge and skill in each area of qualification including early childhood teacher. Developing abilities of them require use of method of instruction that take ability of early childhood teacher candidates in communication, higher order thinking skills, and preparation through the use of ICT (MOE, 2011).

In response to the TQF, this research is interested in the process of how to develop and improve communication skills of teacher particularly early childhood candidate teachers or caregivers. Caregivers defined as adult learner for a bachelor's degree in the field of early childhood education who is working supervision of Local Administrative Organization, Ministry of Interior (MOI). There are 33,550 caregivers who are responsible for looking after 940,152 children who are age 2-5 in 19,820 Childcare Centers all over Thailand (Thai Parliamentary, 2013). The author collected preliminary data via in-depth interview with experts of MOI. The finding found that the caregivers had a limited knowledge in early childhood education and communication skills with technology. Learning by doing at work is the most effective method of acquiring new skills. This research focuses on how to improve caregivers in communication skills during their study in early childhood preparation

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program. Work-based blended learning and technological scaffolding system are used as a theoretical basis to propose the system.

## **2. Review Literature**

### **2.1. Work-based learning**

Since the beginning of the 1990s, Learning by doing at work environment was developed from Kolb's Experiential Learning Theory (Kolb, 1984) using knowledge management approach and problem solving from work practice (Realin, 2008). Levy, Oates, Hunt & Dobson (1989) defined work based learning as "linking learning to the work role". The Chartered Institute of Personnel and Development (CIPD, 2005) states that work based learning is "a self-directed, work-based process leading to increased adaptive capacity. Individual 'learn to learn' and possess the capabilities that enable them to do so to help to build and retain competitive advantage". Realin (2008) argues that work-based learning expressly acquire in action and dedicate to the work task with experiences. He goes on to argue that workplace offers as many opportunities for learning as studying in the classroom. Moreover, Bruge *et al.* (2012) researching in UK Schools that teacher could develop their skill while they work in their workplace, this research found that work experiences can help staff to improve their skill and confidence. Lester & Costley (2010) refer work-based learning logically as "any learning that situated in the workplace or arises directly out of workplace concern". Gray (2001) identifies term of work-based learning in various forms. Each form has different pedagogic approaches learning and development method such as action learning, coaching delegation, discussion board and group, projects, reflective practice (Clifford & Thrope, 2007; Shaw, Rout & Wise, 2011). There are various types of work-based learning activities such as Internship, Community Service Program, Cooperative Education Experience, and Tech Prep Program (Swail & Kampits, 2004). Different types utilize differently depending on objective and target group. The concept of work based learning in this paper utilizes Realin (2008)'s model based on Kolb's Experiential Learning Theory and Honey & Mumford's learning cycle. These can help the learner for reasoning and reflecting in work context (Durant *et al.*, 2009) both in individual and collective level (Realin, 2008) under supervision of mentors. Evaluation processes involve discussion, observation and reflection of learner within workplace (Stenström & Tynjälä, 2009; Gaskell & Beaton, 2010).

### **2.2. Blended Learning**

Blended learning is flexible, hybrid, mixed mode or distributed learning. Graham (2005) argues that blended learning is learning combination between face-to-face and self-paced online learning. Blended learning can help learner more understanding than online learning or traditional learning. This is because blended learning provide learners with enriched learning experiences. Research studies found that learners satisfaction levels can be improved by adopting blended learning (Oh & Park, 2009; Songkram, 2012). Many researchers agree that blended learning is the most appropriate method in instructional strategies (Khlaisang & Koraneekij, 2012; Songkram, 2012). Clifford & Thrope (2007) argue that the blended learning is a key success of work-based learning. This enables learners to be more flexible and efficient. Blended learning combine multiple approaches; including context, methodology, technology, theory and practice, allow adult learner to learn more effectively (Zhao & Yang, 2011; Gao, 2012; Yuen, 2010).

### **2.3. Scaffolding**

The concept of scaffolding is the method which aims to help learners to fill the gap "Zone of Proximal Development (ZPD)" for appropriate assistance to achieve the goal. Vygotsky (1978) defined ZPD as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers". However, the scaffolding can be extracted from the system if learners are confident and able to complete the task. In case of adult learners, the learning scaffolding has passed through their diversity and related the task at workplace (Reingold, Rimor, & Kalay, 2008; Majid, 2010). Each type of scaffolding was affected by the diversity of learners and nature of work such as technology resources, peer support or teacher-led discussions (Puntambekar & Hubscher, 2005). Technological scaffolds can assume some routine support tasks and allow the teacher to provide dynamic support. The design focuses on common learner misunderstandings or difficulties to contain the rage of problem solving or task performance option (Sharma & Hannafin, 2007).

### **2.4. Technology**

Nowadays, technology has changed the way people learn. Benefits of using technology can help learners in various ways. Technology can enhance reflective learning, ideas, critical thinking ability, writing skill, and presentation skill with Blogs. (Ahmad & Lutters, 2011; Lee & Young, 2011; Deng & Yuen, 2013; Cakir, 2013). Wikis can be used as knowledge creation, co-editing of work with multiple authors in collaborative group work. (Leung & Chu, 2009; Lee & Young, 2011; Bowlin, 2012). Group discussion and chat can be adopted as a support tool for sharing knowledge and experience (Baglione & Nastanski, 2007). There are a number of different applications and software to support learning and teaching for enhancing communication within education environment. Therefore, caregivers should consider and select an appropriate application for children to use (Cubelic & Larwin, 2014). Technology can make communication with parents easier (Merkley *et al.*, 2006; Rogers & Wright, 2007). Social media tools, such as, Facebook, can help teacher keep parents informed

(Education World, 2013). Learning Management System (LMS) is a software application for classroom management that provide a multi-functionalities including video clip, communication practice using social media categorized by functions and features. This can be real-time interaction, synchronous, and asynchronous tools.

### 2.5. Communication skills

Communication skills are crucial foundation for early childhood teachers. Verderber & Verderber (2000) define communication skills as “goal-oriented actions or action sequence that we can master and repeat in appropriate situations”. Berlo’s SMCR (1960) is a well-known model in communication theory. SMCR refers Sources, Message, Channel, and Receiver. An individual must possess excellent communication skills providing effectively communication and create an impact among the receivers. Effective communication skills are vital for learners and teachers in 21<sup>st</sup> century skills (Bee, 2012). Therefore, development of communication skills are essential and should be included in early childhood teacher preparation program (Worley *et al.*, 2007; Millipolijak, 2012). Effective communication of teachers are able to transmit knowledge, encourage and motivate children to learn. Moreover, teacher should be able to utilize multiple media and technologies to articulate thoughts and ideas in a variety of forms and contexts for a range of purposes with families, with children, with peers, and as a professional resource (NAEYC, 2012; The Children’s partnership, 2010). Technology is argued as a potential tool to help teacher engaging, connecting, co-operating with others (Campbell & Scotellaro, 2009; Bowlin, 2012; Morrison, 2014).

This research focuses on the ability of caregivers to communicate effectively with technology in professional setting in the 21st century. The term caregivers refer to adult learners. Not all adult learners have the same type of motivation to learn. Therefore, caregivers need to develop communication skills with work based blended learning and technological scaffolding system. Work based learning can help caregivers to improve their skill and confidence in professional context. Blended learning is a key success of work-based learning as it combines an advantage of face to face and online. Technological scaffolding can support caregivers’ efforts to address learning need. In case of adult learners, the learning scaffolding has pass through their diversity and related task at work. Moreover, technology can help caregivers in various ways such as learning tools, communication tools and scaffolding tools. This enables caregivers to be more flexible and efficient. Therefore, the Work-Based Blended Learning and technological scaffolding system is developed.

### 3. Methodology

This study focuses on the development of work-based blended learning and technological scaffolding system to enhance communication skills for caregivers Under Local Administration Organization in Thailand. The purpose of this study is to proposed proper system:

- 1) To develop conceptual framework for the work-based blended learning and technological scaffolding system to enhance communication skills in context of caregivers.
- 2) To study the experts’ opinions on the system using in-depth interview by face-to-face.

Three phases are included in this study:

Phase I was a review of existing theories and research regarding to work-based learning, blended learning and scaffolding.

Phase II was developing the work-based blended learning and technological scaffolding system in order to enhancing communication skills for caregivers in Thailand.

Phase III was conducted an in-depth interview of ten experts with regard to the developed system. Content analysis is adopted as a technique to analysis the data.

### 4. Findings

The findings which gained from a synthesis of literature and content analysis about work-based learning, blended learning and scaffolding, it was apparent that blending of Scaffoldings, Work-based learning, and Technology are the key concept for developing of the work-based blended learning and technological scaffolding system. The conceptual framework of this research was illustrated in Figure 1.

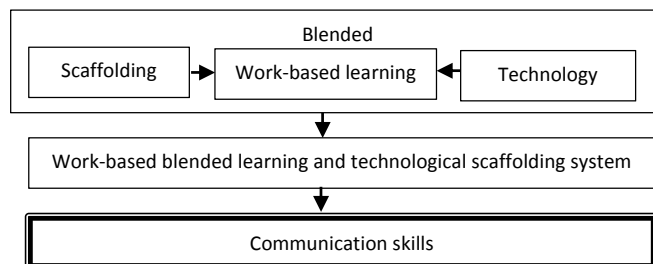


Figure 1 Conceptual Framework

Developing of the work-based blended learning and technological scaffolding system for caregivers in Thailand, it found that the system included five components, six steps, and three technological scaffolding. They derived using deductive and inductive approaches gain from a selected review of literature combined with interviewing of the experts of MOI. The developed system has five components as shown in Table 1. The processes of the system are shown in Table 2, it consists of Preparation, Analysis, Planning, Learning, Discussion, and Evaluation. Technological Scaffolding are Job Aids, Stakeholders and Resources which presented in Table 2.

Table 1 Details of components of the system

Components	Details	References
Job	Work-task from job description. Learning outcomes derived from a work role or function.	Gallacher & Reeve (2002), Eraut (2004), Linda (2007), Darche, Nayar & Bracco (2009)
Learning Activities	Learning activities consists of learning at workplace, online learning and activities within classroom.	Gallacher & Reeve (2002), Eraut (2004), Linda (2007), Darche, Nayar & Bracco (2009), Theerawee & Kittipong (2013)
Technology	System and tools that facilitate learners to access resources. The system consists of Learning tools, Communication tools and Scaffolding tools.	Gallacher & Reeve (2002), Eraut (2004), Linda (2007), Darche, Nayar & Bracco (2009)
Evaluation	This evaluates personal goal, progress of learners toward their achievement.	Gallacher & Reeve (2002), Eraut (2004), Linda (2007), Theerawee & Kittipong (2013)
Key Stakeholders	There are Learners, teachers, and supervisors at workplace. Learners are responsible for planning and managing their own learnings. Teachers are facilitators in classroom and online. Supervisors at workplace provide learners with guidance, mentoring and supports in workplace.	Gallacher & Reeve (2002), Eraut (2004), Linda (2007), Darche, Nayar & Bracco (2009), Theerawee & Kittipong (2013)

Table 2 Process of the system

Processes	Details	Located in
1.Preparation	<ul style="list-style-type: none"> <li>Orientation in order to explain concept approach of the system, learning objectives, learning activities and evaluation approach.</li> <li>Communication skills assessment (pre-test).</li> <li>Recall prior knowledge and continue to improve performance.</li> </ul>	Class
2.Analysis	<ul style="list-style-type: none"> <li>Job and communication analysis in the workplace.</li> <li>Goal Setting.</li> </ul>	Class
3.Planning	<ul style="list-style-type: none"> <li>Setting Personal Development Plan (PDP).</li> <li>Negotiation PDP.</li> <li>Sign Agreement of PDP.</li> </ul>	Class
4.Learning	<ul style="list-style-type: none"> <li>Recording and data gathering about communication skill on job in workplace using Blog and scaffolding in LMS.</li> <li>Reflection on the strengths and weaknesses of communication using Blog and scaffolding in LMS.</li> <li>Brainstorming with group using Group discussion, Chat, and Wikis.</li> <li>Redo to improve communication skill in workplace.</li> </ul>	Workplace and online
5.Discussion	<ul style="list-style-type: none"> <li>Share experiences in Class.</li> <li>Share knowledge within group via online environment</li> <li>Exchange knowledge with peers, teachers, and supervisor</li> </ul>	Class, workplace, online

Table 2 Process of the system (Cont.)

Processes	Details	Located in
6. Evaluation	<ul style="list-style-type: none"> <li>Communication skills assessment (post-test)</li> <li>Determination the overall of the system</li> </ul>	Class or Online

Table 3 Technological scaffolding

Scaffolding	Details	References
Job Aids	Tools that assists learner to accomplish tasks using technological tools such as e-Worksheet, e-Checklist, e-Form, and e-Procedure Guides	Cagiltay (2006), Lakkala, Muukkone & Hakkarainen (2005), Sharma & Hannafin (2007), Collis & Margaryan, (2005), Nielsen (2008)
Stakeholders	A person or group of people attempting to motivate, advice, coaching. They can be mentors, colleagues, and experts that communicate through communication technology tools and applications such as e-Mail, webpage, Discussion Board, Chat room, Feed, RSS, Line and Skype.	Cagiltay (2006), Jiménez & Pantoja (2008), Lakkala, Muukkone & Hakkarainen(2005), Dabbagh(2010), Niamsorn,Wainwright, & Graham (2011) , Collis & Margaryan (2005), Sharma & Hannafin (2007), Nielsen (2008)
Resources	A source or supply that can be used to support or help learners such as video case study and web resources.	Cagiltay (2006), Jiménez & Pantoja (2008), Lakkala, Muukkone & Hakkarainen(2005), Dabbagh(2010) , Johnson & Johnson (2005), Collis & Margaryan, (2005), Sharma & Hannafin (2007)

Interviews the experts were held after components of the system, process of the system and technological scaffolding were identified. The interviews were conducted with ten experts with face-to-face interview. Three of them are senior managements of MOI who have more than five years work experiences. Seven experts are university lecturers. They were asked to express how they thought about the system. Some of issues that emerged from the experts are summarized as below:

- Content selection is critical issue in the preparation stage. It includes learners analysis, scaffolding preparation, managing the expectations of caregivers, and preparation of caregiver in the adoption of technology.
- Prior experiences and knowledge in communication of caregivers can be an advantage in engaging with technology. If teachers are able to connect the prior knowledge and experiences of caregivers. It could help caregiver learning to be more effectively.
- Effective time management is vital for the learning system. The experts recommended that the flexibility can lead to better learning. Learner should be able to choose or organize their own learning schedule to meet their available and convenient time.
- Caregivers need to practice and be able to adapt the way to communicate with others in different situations. However, teachers and peers should provide guidance and encouragement on how to communicate in effective way.

## 5. Conclusion

Communication skills are arguably crucial skill in learning and teaching of 21<sup>st</sup> century. Nowadays, Information and Communication Technology is widely accepted as being used in a daily life. Little research has looked particularly in developing communication skills for caregivers. As a consequence, this research is interested in the process of how to develop and improve communication skills of teacher particularly early childhood teachers or caregivers. From a synthesis of literature and content analysis about work-based learning, blended learning and scaffolding, five components, six processes, and three technological scaffolding were identified. Some issues have been derived from interviewing of experts about the process and the system. The next stage of our research will focus on how these components, processes and form of scaffolding result to contributes to communication skills improvement.

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# Yükseköğretim Turizm Öğrencilerinin Turizm Sektörü ve Eğitimi ile ilgili Tutumlarını Belirlemeye Yönelik Bir Araştırma

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## Özet

Bu çalışma, yükseköğretim düzeyinde turizm eğitimi almakta olan öğrencilerin turizm sektörüne ve almış oldukları turizm eğitime yönelik düşüncelerini ortaya koymak amacıyla yapılmıştır. Çalışma Türkiye'nin altı coğrafi bölgesi üzerinde gerçekleştirilmiştir. Çalışmada elde edilen veriler kümeleme analizine tabi tutulmuş ve öğrenciler tutumlarına göre üç sınıfa ayrılmıştır. Bunlar, olumsuz tutuma sahip olanlar, kararsızlığa yakın olanlar ve olumlu tutuma sahip olanlardır. Çalışma kapsamında elde edilen bir diğer bulgu ise; öğrencilerin büyük çoğunluğunun bölümünü severek etmelerine rağmen çalışma koşulları, turizm eğitiminin yeterliliği, öğretim elemanlarına yönelik algılamaları ve turizm sektörünün fırsatları konusunda olumsuz bir tutuma sahip olduklarıdır. Olumsuz tutuma sahip öğrencilerin büyük çoğunluğunun sektörde staj yapmış veya fiilen çalışmış kişilerden oluşması ve katılımcıların %45,9'unun sektör ve eğitim hakkında kararsız bir tutum göstermesi hem sektörde hem de eğitim kurumlarında işleyişin yeniden gözden geçirilmesini ve gerekli noktalarda önemli değişikliklerin yapılmasının gerekliliğini göstermektedir.

## Abstract

This study was conducted to reveal the student's (who educated in tourism department at higher education level) thoughts about tourism sector and tourism education. The study was carried out on six geographical regions of Turkey. The obtained data were subjected to cluster analysis and students are divided into three classes according to their attitude. These are those with negative attitudes, those who are close to instability and those who have a positive attitude. Another finding obtained in the study is, despite the majority of students willingly prefer their department, they have negative attitudes about working conditions, the adequacy of tourism education, perceptions to the lecturers and opportunities of tourism industry. The majority of students have negative attitudes have done internships or have actually worked full time in the industry. 45.9% of respondents show an ambivalent stance on the sector and education. At the same time the answers given by respondent show that the operation both in sector and educational institutions should be revised and some changes have to be changed in sector and educational institutions.

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*Anahtar Kelimeler:* Turizm Eğitimi, Turizm Öğrencileri, Yükseköğretim

*Keywords:* Tourism Education, Tourism Students, Higher Education

## 1. Giriş

Turizm endüstrisinin ülke ekonomilerine yapmış olduğu katkının sürekli bir artış göstermesi (Keung, 2000, s.121), turizm pazarında rekabeti artırarak nitelikli insan gücüne olan bağlılığını daha da açığa çıkarmıştır (Sem ve Clements, 1996, s.94). Modern turizm anlayışının gerektirdiği hizmet kalitesinin sağlanması ve turist ile turiste hizmet edenler arasındaki ilişkilerin sağlıklı ve kaliteli olarak gerçekleştirilmesi zorunluluğu, büyük ölçüde sektörde istihdam edilen işgücünün meslekî ve teknik eğitim düzeylerinin yüksek olmasına bağlıdır (Christou, 1999, s.683; Alp, 1992, s.47). Nitelikli insan gücünde ancak etkin ve kaliteli turizm eğitim ve öğretimiyle sağlanabilir (Ünlüöner, 2000, s.218). İnsan kaynağına yatırım yapılmadığı sürece fiziksel ve teknolojik donanımın ve ekonomik gelişmelerin hizmet kalitesinin artırılmasında ve geliştirilmesinde tek başına önem ifade etmemektedir (Seymen, 2002, s.17).

İnsan kaynağına yatırımın özünü eğitim oluşturmaktadır. Bu kapsamda eğitim, bireyler için yüksek yaşam düzeyi elde etmenin, toplumlar için ise gelişme ve ilerlemenin, çağdaş ülkeler arasında yer almanın başlıca yolu olarak karşımıza çıkmaktadır (Hergüner vd., 2002, s.45). Eğitim, özellikle sanayi ve hizmet sektörünün gereksinim duyduğu bilgi ve beceriye sahip nitelikli işgücünü geliştirerek, çalışanları daha verimli kılarak ekonomik büyümeye önemli katkılarda bulunur (Woodhall, 1979, s.34). Bu bilgiler ışığında eğitim; “önceden

saptanmış amaçlar doğrultusunda insan davranışlarında belli gelişmeler sağlamaya yarayan plânlı etkiler dizesidir” (Karşlı, 2003:9) şeklinde tanımlanmıştır.

Turizm eğitim kurumlarının temel amacı, turizm sektöründe iş görecekteler için temel eğitimden geçirilerek tüm eğitim alanlarına turizm bilinci ve felsefesini kazandırmak, turizm sektörünün gelişmesine katkıda bulunmak, turizm sektörüne yetişmiş kalifiye personel sağlamak (Mısırlı, 2002, s.42), yönetim tekniklerini öğretmek ve dünyada hakim, kabul görmüş anlayışa uyum sağlamak, yeni kavram, fikir ve teknolojileri kavrayabilecek üst düzey turizm profesyonellerini yetiştirmektir (Üzümcü ve Bayraktar, 2004, s.80).

### 1. Türkiye’de Turizm Eğitimi

Turizm eğitimi; topluma turizm bilincini kazandırmak ve yerleştirmek, turistik kaynakları koruyacak bilinci geliştirmek, turiste karşı onun ekonomik gücüne, ırkına, milliyetine, dinine, diline, toplumdaki statüsüne, ahlak ve namus düzeyine, siyasal ideolojilerine göre ayırım yapmadan eşit ve dürüst hizmet etmek anlayış ve terbiyesini vermek, turizmin sağladığı uzun vadeli çıkarlar üzerine dikkati çekerek saygıya ve konukseverliğe dayalı bir davranış düzenini yerleştirmektir (Olalı, 1990, s.264).

Dünya genelinde ekonominin itici gücü sanayi sektörüdür. Özellikle gelişmekte olan ülkeler için sanayi sektörünün alternatifi turizm sektörüdür (Aksu ve Bucak, 2012, s.8). Gerek ülke ekonomilerine olan katkısı, gerekse sosyal ve kültürel hayata olan katkısı ülkelerin turizm sektörüne kayıtsız kalmalarının önüne geçmektedir. Ülkeler turizm pazarından daha fazla pay alabilmek için turizm alanında mesleki yeterliliğe sahip bireyler yetiştirmeye çalışmaktadır. Mesleki yeterlilik bir işi veya görevi yapabilme gücüdür (MEB, 2002). Bir başka tanıma göre ise, herhangi bir meslek mensubunun mesleki faaliyetlerini yerine getirirken teknik ve mesleki standartlara uygun olarak davranmasıdır (Sakarya ve Kara, 2010, s.61). Mesleki yeterlilik, kurum çalışanlarının işlerini kurumun amaçları doğrultusunda yapabilmeleri ve kurumun etkili bir şekilde yaşamını sürdürebilmesi için gereklidir (Bursalıoğlu, 1981, s.5).

Türkiye’de mesleki turizm eğitimi; örgün ve yaygın olmak üzere iki şekilde gerçekleştirilmektedir. Örgün turizm eğitimi veren öğretim kurumları, ortaöğretim ve yükseköğretim düzeyinde mesleki turizm eğitimi veren okullardan oluşmaktadır. Yaygın turizm eğitimi ise; gerek resmi gerekse özel kurumlar tarafından verilen kısa süreli mesleki kurslar niteliğinde bir görünüm arz etmektedir (Ünlüönen ve Boylu, 2005, s.15). 2547 Sayılı Yükseköğretim Kanunu’na göre önlisans eğitimi, ortaöğretime dayalı, en az dört yarıyılık (bazı üniversitelerde dört yarıyla ek olarak, iki yarıyıldan oluşan yabancı dil hazırlık sınıflarının olması sebebiyle eğitim-öğretim süresi altı yarıyla çıkmaktadır) bir programı kapsayan yükseköğretimdir. Yükseköğretimde önlisans düzeyinde turizm eğitimi, 1970’li yılların ortalarında Boğaziçi ve Ege Üniversiteleri’nde ara insan gücü yetiştirmek üzere açılmış olan önlisans yüksek okullarında bir program olarak faaliyetine başlamıştır (Baltacı vd., 2012, s.18).

Türkiye’de 1992 yılından itibaren çok sayıda yeni üniversitenin açılmış olması ve açılmaya devam edilmesi, turizm lisans programlarının sayılarında adeta bir patlama yaşanmasına sebep olmuştur. 2013-2014 yılında Türkiye’de yükseköğretim düzeyinde turizm eğitimi veren birim sayısı 204’e ulaşmıştır. Bunların 36’sı (%17.65) fakülte, 31’i (%15.19) yüksekokul, 138’i (%67.65) ise meslek yüksek okulu düzeyinde eğitim vermektedir. Fakülte düzeyinde turizm eğitim veren birimlerin 20’si doğrudan turizm fakültesi iken, geriye kalan 16’sı İ.İ.B.F (7), işletme fakültesi (6), ticari bilimler fakültesi (2) ve ekonomi fakültesi (1) olarak sıralanmaktadır.

Türkiye genelinde yükseköğretim düzeyinde toplam 653 programda eğitim verilmektedir. Bu programların 441’i devlet üniversitelerinde yer alırken, 212’si özel üniversiteler bünyesinde bulunmaktadır. Devlet üniversiteleri bünyesinde bulunan programların 81’i fakülte, 38’i yüksekokul, 332’si ise MYO düzeyinde turizm eğitimi vermektedir. Özel üniversiteler bünyesinde bulunan programların ise 38’i fakülte, 35’i yüksekokul, 139 MYO düzeyinde turizm eğitimi vermektedir. Ayrıca devlet üniversiteleri bünyesinde eğitim veren turizm programlarının 1’i uzaktan eğitim, 2’si açıköğretim şeklindeyken, özel üniversitelerde toplamda 16 program uzaktan eğitim vermektedir. Türkiye’de toplam 19 farklı isimde turizm programı bulunmaktadır. Programların genel anlamıyla seyahat işletmeciliği, konaklama işletmeciliği, rehberlik, yiyecek-içecek işletmeciliği ve gastronomi alanlarında olduğu görülmektedir. Turizm animasyonu, gastronomi ve rekreasyon alanlarında ise yeni yeni bölünmeler olduğu da tabloda görülen bir başka bilgidir.

Turizm eğitimi alan öğrenciler sektörün potansiyel birer temsilcisi durumundadır. “Bir eğitim sisteminin etkinliğinin ve kalitesinin, eğittiği kişilerin iş gücü piyasasındaki yer ve konumlarıyla ölçülmesi” (Ünlüönen 2004, s.109), turizm eğitimi veren kurumların etkinliği ve kalitesiyle beraber öğrencilerin durumlarını da incelemeyi gerektirmektedir. Turizm eğitimi veren kurumların sayısındaki artışın, mezunların sayısındaki artışa yansımaya rağmen, sektörde istihdam edilen turizm eğitimi almış personel sayısına yansımaması diğer bir sorunu oluşturmaktadır (Eser, 2002, s.144). Çünkü turizmle ilgili meslek ve meslekte çalışanlar, eğitilmiş iş görenler ve mezunlar herhangi bir yasal düzenlemeyle korunmamaktadır (Mısırlı, 2002, s.41). Bu durumda mezunlar başka sektörlerle yönelmektedir. Yapılan araştırmalardan turizm eğitimi veren okullardan mezun olan öğrencilerin, zamanla sektörden ayrıldığı saptanmıştır. Turizm eğitimi almış ve alan öğrencilerin turizm sektörüne yönelik tutumlarını belirlemeye yönelik araştırmalardan; turizm eğitimi almış, özellikle üniversite mezunlarının sektöre terk etme ve başka sektörlerde çalışmak istedikleri anlaşılmıştır. Bu sorunların devam ediyor olması, yapılan çalışmalar sonucu öne sürülen çözüm önerilerinin uygulamaya dönüştürülmesinde

başarıya ulaşamadığı izlenimini vermektedir (Üngüren ve Ehtiyar, 2009, s. 2097).

## 2. Metodoloji

Araştırmanın temel amacı, Türkiye’de yüksek öğretim kurumları düzeyinde turizm eğitimi görmekte olan, önlisans ve lisans öğrencilerinin, eğitim memnuniyetin seviyesini ve turizm sektörüne yönelik tutumlarını tespit etmektedir. Araştırmanın evrenini Türkiye’de yükseköğretim düzeyinde turizm eğitimi alan öğrenciler oluşturmaktadır. Ancak, yükseköğretim düzeyinde eğitim veren tüm kurumlara ulaşmak zaman ve maliyet açısından zor olduğundan, her bölgeden bir il belirlenmiştir. Bu iller İzmir, Antalya, Gaziantep, Erzurum, Kayseri, İstanbul ve Trabzon’dur. Araştırma, bu illerde yer alan yükseköğretim kurumlarının turizm bölümlerinde yürütülmüştür. Akdeniz bölgesini Akdeniz bölgesini temsi için seçilen Antalya’da yapılan çalışma tamamlanamadığı için veriler araştırmaya dahil edilememiştir. Araştırmanın örneklem grubu ana kütlenin üzerinden seçilmiş olup, ana kütleyi temsil gücüne sahip örneklem gruplarından her birisine anket uygulanarak araştırma için gerekli olan veriler elde edilmiştir. Anketlerin tamamı örneklem gruplarındaki bireylere birebir uygulanmıştır. Uygulanan toplam anket sayısı 600 olup, analizler sağlıklı veri elde edilen 497 anket üzerinden gerçekleştirilmiştir. Verilerin analizinde SPSS 13.0 programı kullanılmıştır. Demografik değişkenlere ilişkin verilerin yorumlanmasında frekans ve yüzde analizinden yararlanılmıştır. Öğrencilerin turizm eğitimi ve turizm sektörüne yönelik düşüncelerinin hangi boyutlardan oluştuğunu belirleyebilmek amacı ile ölçekte yer alan önermeler faktör analizine tabi tutulmuştur.

### 2.1. Araştırma Analizleri ve Bulgular

#### 2.1.1 Demografik Bulgular

Demografik değişkenlere ilişkin bulgular aşağıda Tablo 1’de yüzde ve frekans dağılımları şeklinde sunulmuştur.

Tablo 1: Demografik Bulgular

Değişkenler	Gruplar					
	1. Grup		2. Grup		3. Grup	
Cinsiyet	n	%	n	%	n	%
Erkek	67	32,1%	93	44,5%	49	23,4%
Kız	79	27,4%	135	46,9%	74	25,7%
Sınıf	n	%	n	%	n	%
1. Sınıf	25	14,1%	101	57,1%	51	28,8%
2. Sınıf	48	25,0%	96	50,0%	48	25,0%
3. Sınıf	31	46,3%	20	29,9%	16	23,9%
4. Sınıf	41	70,7%	10	17,2%	7	12,1%
İl	n	%	n	%	n	%
Erzurum	5	13,5%	23	62,2%	9	24,3%
Gaziantep	16	21,3%	34	45,3%	25	33,3%
İstanbul	19	20,7%	44	47,8%	29	31,5%
İzmir	76	59,8%	33	26,0%	18	14,2%
Kayseri	15	25,0%	28	46,7%	17	28,3%
Trabzon	15	14,2%	66	62,3%	25	23,6%
Tercih Nedeni	n	%	n	%	n	%
Bölümü Sevme	48	17,0%	133	47,0%	102	36,0%
Aile İsteği	12	26,1%	25	54,3%	9	19,6%
Öğretmen Tavsiyesi	16	39,0%	18	43,9%	7	17,1%
Çevrenin Tavsiyesi	21	33,9%	32	51,6%	9	14,5%
Yanlış Tercih	36	48,6%	34	45,9%	4	5,4%
Diğer	44	52,4%	28	33,3%	12	14,3%
Mezuniyet Sonrası Planı	n	%	n	%	n	%
Yurt Dışında Turizmde Çalışmak	18	31,6%	17	29,8%	22	38,6%

<b>Turizm Sektöründe Çalışmak</b>	24	15,8%	81	53,3%	47	30,9%
<b>Master/Doktora Yapmak</b>	22	39,3%	19	33,9%	15	26,8%
<b>Başka Sektörde Çalışmak</b>	15	40,5%	21	56,8%	1	2,7%
<b>Turizmde Kendi İşimi Kurmak</b>	19	22,1%	37	43,0%	30	34,9%
<b>Başka Sektörde Kendi İşimi Kurmak</b>	9	56,3%	7	43,8%	0	,0%
<b>Kamu Kurumunda Çalışmak</b>	20	37,0%	31	57,4%	3	5,6%
<b>Diğer</b>	13	61,9%	8	38,1%	0	,0%

Tablo 1’de katılımcıların demografik özelliklerine göre gruplara dağılımları verilmiştir. Cinsiyetlerine göre katılımcıların yarısına yakını 2.grupta yer almaktadır. Birinci (%57) ve ikinci (%50) sınıf öğrencilerinin de yarısından fazlası 2.grupta yer alırken, üçüncü (%46,3) ve dördüncü (%70,7) öğrencilerinin büyük çoğunluğu 1.grupta yer almaktadır. Turizm eğitimi İzmir’de alan öğrencilerin %59,8’i 1.grupta yer alırken, eğitimini diğer illerde alan öğrencilerin yine büyük çoğunluğu 2.grupta yer almaktadır.

Okumakta olduğu bölüme yanlış tercihle geldiğini ifade eden katılımcıların %48,6’sı 1. grupta yer alırken, %45,9’u 2.grupta bulunmaktadır. Bölümü tercih etme sebebi olarak bölümü sevmek (%47), aile isteği (%54,3), öğretmen (%43,9) ve çevre tavsiyesini (%51,6) gösteren katılımcıların büyük çoğunluğu 2.grupta yer almaktadır.

Tablo 2. Faktör Analizi

<b>Faktörler</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>Özdeğerler</b>	8,252	3,623	2,243	1,524	1,380	1,273	1,175	1,123
<b>Varyans Açıklama Oranı %</b>	22,301	9,791	6,062	4,119	3,729	3,442	3,176	3,035
<b>Faktör 1: Çalışma Koşullarının Olumsuzluğu (olumsuz çalışma koşulları)</b>								
Sektörde çalışarak aile yaşantısını sürdürmenin zor olduğunu düşünüyorum	,738							
Turizm endüstrisinde çalışma saatleri düzensizdir	,703							
Turizm sektöründe çalışma saatleri çok uzundur	,685							
Turizm sektöründeki birçok işin ücreti çok düşüktür	,652							
Turizm sektöründe terfiler liyakate (hak edişe) göre yapılır	,544							
Sektörde tanındığı (torpili) olmayanın terfi etmesi zordur	,517							
<b>Faktör 2: Turizm Eğitimin Yetersizliği</b>								
Turizm ile ilgili verilen derslerin yetersiz olduğunu düşünüyorum	,773							
Turizm ile ilgili dersler sektörde işime yaramıyor	,761							
Derste öğrendiğimiz bilgileri uygulamaya dökemiyoruz	,731							
Okuldaki araç ve gereçler turizm eğitimi için yetersizdir	,633							
Eğitim süresinde yeterli düzeyde yabancı dil öğretilmemektedir	,626							
Verilen eğitim bizi turizm sektörüne çok iyi bir şekilde hazırlamaktadır	,611							
<b>Faktör 3: Turizm Eğitiminin Yararları</b>								
Turizm sektöründe çalışmak için turizm eğitimi almaya gerek yoktur		,734						
Turizm eğitimi alanlar daha kolay terfi almaktadır.		,713						
Turizm eğitimi almış olma sektörde çalışmak için hiçbir avantaj sağlamamaktadır		,621						
Turizm eğitimi almış olmak üst düzeyde iş bulma avantajı sağlamaktadır.		,441						
<b>Faktör 4: Turizmin Fırsatları</b>								
Turizmde çok iyi iş fırsatları olduğunu düşünüyorum			,815					
Geleceğin mesleklerinden birinin turizm olduğunu düşünüyorum			,779					
Turizm sektörü toplumda saygınlığı ve prestiji yüksek olan bir sektördür.			,629					
<b>Faktör 5: Turizm Dışı Gelecek Planı</b>								
Mezuniyet sonrasında turizm sektöründe çalışmayı düşünmüyorum				,768				
Başka bir bölümde okumak için üniversite sınavına hazırlanıyorum				,751				
Okulu bırakmayı düşünüyorum.				,478				
<b>Faktör 6: Staj Sonrası Olumsuz Tutum</b>								
Yapmış olduğum stajdan sonra turizm sektöründen soğudum					,647			
Staj döneminde yaşadığım sıkıntılar mesleğimi benimsememi engelliyor					,630			
Staj döneminde edindiğim tecrübe turizm sektörünü sevmemi sağladı					,532			
<b>Faktör 7: Gelecek Kaygısı</b>								
Mezuniyet sonrasında tam olarak ne yapacağımı bilmiyorum						,623		
Mezun olduktan sonra iş bulamama ihtimali beni korkutuyor						,612		
<b>Faktör 8: Öğretim Elemanı Algısı</b>								

Okulumuzda yeterli düzeyde sektör deneyimine sahip öğretim elemanı sayısı azdır	,606
Öğretim elemanları ile öğrenciler arasındaki iletişim yeterli değildir	,452
<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</b>	,874
<b>Bartlett's Test of Sphericity</b>	5175,368 p=0,000
<b>Toplam varyansı açıklama oranı %</b>	%55,65
<b>Ölçeğin Genel Güvenirlik katsayısı (Cronbach's Alpha)</b>	,895

Faktör analizi, Varimax eksen döndürmesi uygulanarak gerçekleştirilmiştir. Faktörlerin hesaplanmasında özdeğer (Eigenvalues) istatistiğinden yararlanılmıştır. Araştırmada faktörler belirlenirken madde (değişken) yüklerinin en az 0.35 olması ve diğer faktörlere oranla en yüksek değerde olması esas alınmıştır. Uygulanan faktör analizi sonucunda 8 faktör (boyut) saptanmıştır. Ayrıca edilen verilerin faktör çözümlemesine uygun olup olmadığını belirlemek amacıyla KMO (Kaiser-Meyer-Olkin) testi uygulanmıştır. KMO (Kaiser-Meyer- Olkin Measure of Sampling Adequacy) değeri araştırma verilerine faktör analizi uygulayabilme koşulunu gösteren değerdir. Bartlett's Test of Sphericity değeri araştırma verilerinden anlamlı faktörler veya değişkenler çıkarılabileceğini gösteren değerdir.

Uygulanan faktör analizi sonucunda KMO (Kaiser-Meyer- Olkin Measure of Sampling Adequacy) değeri 0,874 düzeylerinde tatmin edici bir değer olarak hesaplanmıştır. Araştırma verilerinden anlamlı faktörler veya değişkenler çıkarılabileceğini gösteren küresellik derecesi de (Bartlett's Test of Sphericity) 5175,368 olarak hesaplanmış ve elde edilen bu değer 0,000 düzeyinde istatistiksel olarak anlamlı olduğu görülmüştür. Bu iki test sonucundan elde edilen bulgu faktör analizi yapabilmek için üzerinde çalışılan örneklem büyüklüğünün yeterli ve verilerin ise faktör analizi yapabilmek için uygun olduğunu göstermektedir.

Ölçeğin güvenirlik çalışması için "Cronbach Alpha" iç tutarlık katsayıları hesaplanmıştır. Ölçeğin iç tutarlılık/güvenirlik katsayısı  $\alpha=0.855$  olarak bulunmuştur. Ankette yer alan ifadeler için elde edilen Cronbach Alpha güvenirlik katsayısının istatistiksel anlamda yeterli düzeyde olduğu anlaşılmakta ve ölçeğin tutarlı ve güvenilir bir ölçek olduğunu göstermektedir.

Tablo 2'de faktör analizi sonucu elde edilen 8 faktör ve bunlara ilişkin özdeğerler ve varyansı açıklama oranları ile birlikte ölçekte yer alan her bir maddenin hangi faktörle ilişkili olduğunu belirten faktör yük değerleri gösterilmiştir. Faktör analizi sonucu elde edilen 8 faktörün toplam varyansı açıklama oranı da % 55,65 olduğu saptanmıştır. Faktörlerin isimlendirilmesinde ilgili faktör altında toplanan önermelerin ortak noktaları dikkate alınmıştır. Buna göre birinci faktör "*Çalışma Koşullarının Olumsuzluğu*", ikinci faktör "*Turizm Eğitimin Yetersizliği*", üçüncü faktör "*Turizm Eğitiminin Yararları*", dördüncü faktör "*Turizmin Fırsatları*", beşinci faktör "*Turizm Dışı Gelecek Planı*", altıncı faktör "*Staj Sonrası Olumsuz Tutum*", yedinci faktör "*Gelecek Kaygısı*" ve son olarak sekizinci faktör "*Öğretim Elemanı Algısı*" olarak isimlendirilmiştir.

Tablo 3 :Öğrencilerin Tutumlarının Sınıflandırılması

Faktörler	Gruplar		
	1. Grup n=146; %29,4	2. Grup n=228; %45,9	3. Grup n=123; %24,7
	x	x	x
Faktör 1: Çalışma Koşullarının Olumsuzluğu	4,17	3,40	3,18
Faktör 2: Turizm Eğitimin Yetersizliği	4,14	3,09	2,93
Faktör 3: Turizm Eğitiminin Yararları	2,78	3,50	4,13
Faktör 4: Turizmin Fırsatları	3,19	3,85	4,41
Faktör 5: Turizm Dışı Gelecek Planı	2,29	2,15	1,44
Faktör 6: Staj Sonrası Olumsuz Tutum	3,61	2,75	1,79
Faktör 7: Gelecek Kaygısı	3,26	3,44	1,82
Faktör 8: Öğretim Elemanı Algısı	3,97	2,83	2,62

Öğrencilerin tutumlarını gruplandırmak için, faktör analizi sonucunda elde edilen faktörlere kümeleme analizi uygulanmış ve kümeleme analizi sonucunda üç grup elde edilmiştir. Küme analizinin genelamacı, gruplanmamış verileri benzerliklerine (similarity) göre kümelemek ve araştırmacıya uygun, işe yarar özetleyici bilgiler elde etmede yardımcı olmaktır. Birinci grup ortak özellik taşıyan öğrencilerin %29,4'ü (n=146) oluşturmaktadır. İkinci grup ortak özellik taşıyan % 45,9'la (n=228) en büyük grubu oluşturmaktadır. Üçüncü



grup ortak özellikler taşıyan öğrencilerin %24.7'sini oluşturmaktadır. Grupların ortak özellikleri Tablo 3'de açıklanmıştır.

Gruplar	Ortak Özellikler
1. Grup (n=146; %29,4)	<ul style="list-style-type: none"> <li>Turizm sektöründeki çalışma koşullarının olumsuz ve ağır olduğu yönünde kuvvetli tutuma sahip olan</li> <li>Verilen mesleki turizm eğitiminin yetersiz olduğu düşünen, eğitim için kullanılan araç ve gereçlerin turizm eğitimi için yetersiz gören, yeterli düzeyde yabancı dil öğretilmediği yönünde tutuma sahip olan</li> <li>Turizm eğitiminin yararları konusunda kararsız kalan, turizm eğitimi almadan da turizm sektöründe çalışılabileceğini düşünen</li> <li>Turizm sektörünün toplumda prestijli ve saygın meslek olduğu yönünde kaygı taşıyan, turizm sektörünün fırsatları konusunda kararsız tutumları olan</li> <li>Mezuniyet sonrası turizm sektöründe çalışıp çalışmama konusunda kararsız olan</li> <li>Staj sonrası turizm sektörüne karşı olumsuz tutum sergileyen ve turizm sektöründen uzaklaşan</li> <li>Mezuniyet sonrası iş bulamama kaygısı taşıyan, mezuniyet sonrasında ne yapacağı konusunda belirsizlikleri olan</li> <li>Öğretim elemanlarının öğrenciler ile olan ilişki ve iletişimlerini yeterli görmeyen, turizm sektörü iyi bilen yeterli öğretim elemanı olmadığını düşünen</li> </ul>
2. Grup (n=228; %45,9)	<ul style="list-style-type: none"> <li>Turizm sektöründeki çalışma koşullarının olumsuz yönde olduğuna dair tutumları oluşmaya başlayan</li> <li>Verilen turizm eğitimin kendilerini sektöre iyi hazırladığı konusunda kararsız olan, yeterli düzeyde yabancı dil öğretilmediği yönünde tutuma sahip olan, turizm eğitimin yeterliliği konusunda emin olmayan</li> <li>Aldıkları turizm eğitiminin yararlı olduğu inancını taşıyan, turizm eğitimi almanın sektörde avantaj sağladığı düşünen</li> <li>Turizmde çok iyi iş fırsatları olduğunu düşünen, turizm sektörünün geleceğin önemli sektörlerinden biri olduğu inancını taşıyan, turizm sektörünün toplumda prestijli ve saygın meslek olduğu düşünmekle birlikte bu konuda kararsız tutum sergileyenlerin de olduğu</li> <li>Mezuniyet sonrası turizmde çalışmayı planlamakla birlikte zaman zaman bu konuda kararsızlığa kapılan</li> <li>Staj sonrası turizm sektörüne karşı olumsuz tutum olmamasına karşın bu konuda kararsız tutum belirten</li> <li>Araştırma grubu içinde gelecek kaygısı en yüksek olan, mezuniyet sonrası iş bulamama kaygısı taşıyan, net olarak gelecek planı olmadığından dolayı mezuniyet sonrası ne yapacağını tam olarak bilmeyen</li> <li>Öğretim elemanlarının sektör deneyimi ile öğrencilere yaklaşımı konusunda kararsız bir tutum sergileyen</li> </ul>
3. Grup (n=123; %24,7)	<ul style="list-style-type: none"> <li>Turizm sektöründeki çalışma koşullarının olumsuz yönde olduğuna dair kararsız kalan</li> <li>Verilen mesleki turizm eğitiminin yeterliliği konusunda kararsız olan, aldıkları turizm derslerinin uygulamada önemli olduğunu düşünmekte birlikte, daha başka derslerin de olması gerektiği yönünde düşünceleri olan, yeterli düzeyde yabancı dil öğretilmediği yönünde tutuma sahip olan</li> <li>Turizm sektöründe çalışmak için turizm eğitimi almanın gerekli olduğunu savunan, turizm eğitimi almanın turizmde hızlı ve üst düzey kariyer imkanları sağladığı düşünen</li> <li>Turizm sektörünün bir çok fırsatlar sunduğunu düşünen, turizm sektörünün geleceğin önemli iş alanlarından biri olduğuna inanan, turizm sektörünün toplumda prestijli ve saygın bir konumu olduğunu düşünen</li> <li>Mezuniyet sonrası turizm sektöründe çalışmayı planlayan</li> <li>Staj sonrası turizm sektörüne karşı olumsuz tutum sergilemeyen</li> <li>Mezuniyet sonrası gelecek kaygısı taşımayan, mezuniyet sonrası ne yapacağını bilen</li> <li>Öğretim elemanlarının sektörü tanıdığını ve tecrübesi olduğunu düşünen, öğretim elemanlarının öğrencilerle ilişkisini kısmen yeterli gören</li> </ul>

### 3.Sonuç

Yapılmış olan bu çalışma ile Türkiye’de turizm eğitimialan öğrencilerin turizm sektörüne ve aldıkları turizm eğitime karşı tutumları belirlenmeye çalışılmıştır. Genel anlamıyla öğrencilerin kararsızlık içinde olduğu görülmüştür. Ancak, gerçekleştirilen kümeleme analizi sonucunda öğrencilerin tutumlarına göre üç grup altında toplandığı belirlenmiş ve böylece tutumları da daha net bir şekilde ortaya çıkmıştır. Buna göre öğrencilerin büyük çoğunluğu turizm sektöründe çalışma koşullarının olumsuz olduğunu ve turizm eğitiminin yetersiz olduğunu düşünmektedir. Bu olumsuz tutuma rağmen turizm sektöründe çalışma konusunda istekli oluşları, sektörün geleceği açısından önem taşımaktadır. Ancak, öğrencileri bu konuda kararsızlığa düşüren sebeplerde bulunmaktadır. Özellikle staj veya doğrudan çalışma yoluyla sektör tecrübesi yaşayan öğrencilerin mezuniyet sonrası turizm sektöründe çalışma konusunda kararsızlık yaşaması ve işsiz kalma korkusu yaşaması düşünülmüştür.

gereken bir durum olarak karşımıza çıkmaktadır. Bunun yanı sıra öğrencilerin birinci sınıftayken olumlu olan tutumlarının bir üst sınıfa geçtikçe kararsızlığa ve olumsuzluğa doğru kayması yine hem sektör hem de eğitim kurumları tarafından değerlendirilmesi gereken bir durumdur. Sektör açısından çalışma koşullarının aile yaşantısında olumsuzluklara sebebiyet vermeyecek şekilde düzenlenmesi, terfi ve kariyer olanaklarından her bireyin adil bir şekilde yararlanmasının sağlanması hali hazırda turizm bölümünde severek öğrenim gören öğrencilerin sektörde çalışmaya karşı isteklerini ve motivasyonlarını arttıracak düzenlemeler olacaktır. Eğitim kurumları açısından ise, müfredatlarda yer alan derslerin sektörde ihtiyaç duyulan bilgiler dikkate alınarak seçilmesi, derslerin teorik olmaktan çok uygulamaya dönük işlenmesi, okulların araç ve gereklilik bakımından donanımlı olması, öğretim elemanlarının sektörle yakın ilişkiler kurması veya sektör tecrübesi olan kişilerin öğretim elemanı olarak istihdam edilmesine özen gösterilmesi öğrencilerin turizm sektörüne daha donanımlı ve hazır bir şekilde gitmesi adına büyük adımlar olacaktır. Gelecek endişesi taşımayan ve enerjisini mezuniyetten sonra ne yapacağına ilişkin sorulara yanıt bulmaya harcamayan bireylerin varlığı kısa vadede turizm sektörüne uzun vadede ise ülke ekonomisine büyük katkılarda bulunacaktır.

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# بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

## تحديد صعوبات تعلم الرياضيات في المراحل العليا بالمرحلة الابتدائية و اقتراح الإستراتيجيات المناسبة لحلها

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### المقدمة

تلعب الرياضيات دوراً هاماً في عصر ثورة المعلومات والصحة التكنولوجية التي يشهدها العالم الآن فهي الآن أداة ضرورية للتعامل بين الأفراد بل أصبحت من المكونات الأساسية للثقافة ولا يمكن الاستغناء عنها . غاردنر ( 1425 هـ ، ص 287).

لكن تعليم وتعلم الرياضيات تصادفه الكثير من المشكلات سواء في الدول النامية أو حتى المتقدمة ، وتشير نظلة خضر (1985م ، ص 13) إلى أن تدريس الرياضيات مهنة ممتعة وصعبة وتستمد صعوبتها من طبيعة الرياضيات وعلاقتها بالعلوم الأخرى وطبيعة المتعلم ونظرته إليها .

و يذكر David Chard (2005) في تعليقه على سبب بداية Development Project أن مستوى الأطفال في السنوات الأولى في المدارس ظل منخفضاً لعقود من الزمن وهذا الانخفاض يزيد مع تقدم الطلاب في المدرسة لكن للأسف لا توجد معلومات كافية متاحة فيما يتعلق بأفضل طموحاتنا في الطلاب عند بداية التحاقهم بالمدرسة وبخاصة للطلاب الذين يواجهون صعوبة كبيرة في الرياضيات. ويؤكد تقرير التنمية البشرية العربية لعام 2003 الصادر تحت عنوان "بناء مجتمع المعرفة" على الحاجة الماسة إلى تعليم مرتفع الجودة وبالأخص في مجالي العلوم والرياضيات؛ وهذا ما يساعد الدول النامية على اللحاق بركب التنمية.

ويشتكى الكثير من الآباء والأمهات من حالة التأخر الدراسي في الرياضيات التي يعاني منها أبناؤهم، غير مدركين للأسباب الحقيقية وراء هذا التأخر وسبل علاجها . و هذا الانخفاض ليس مقتصرأ على الدول العربية فمجلة المعرفة ( 1419 هـ ) تذكر أنه أشارت أحدث دراسة إنجليزية إلى ارتفاع الرسوب في مادة الرياضيات، ويعزو بعض التربويين إهمال التلاميذ أو كراهيتهم لها إلى غزو الكمبيوتر لعقولهم وعدم اهتمامهم ببذل جهد ذهني لحل مسائل الرياضيات، وتسعى السلطات التعليمية البريطانية إلى تكليف عدد من المعلمين المدربين لتطوير مناهج مادة الرياضيات بأساليب تشد انتباه الطلاب.

وكذلك هناك الكثير من الدراسات الأجنبية التي تشير إلى تدني مستوى الطلاب في الرياضيات فهناك الكثير من الدراسات في الولايات المتحدة كما يذكر اسحق (2000م) أشارت لذلك مثل دراسة برمفيلد (1985م) التي تشير إلى تدني في تحصيل الطلاب في مهارتي الجمع والطرح وكذلك دراسة ديكورت (1983م) .

وكذلك يوصي المجلس الوطني لمعلمين الرياضيات المدرسية ( 2000 ) the National Council of Teachers of School Mathematics بتطوير بيئة تعلم الرياضيات وبأن يعزز الفهم بشكل فعال ويؤكد أنه من الضروري أن يكون المعلمين مدركين للصعوبات التي تواجه الطلاب في تعلم الرياضيات.

ومن المسلم به أن تعلم الرياضيات المدرسية يشكل تحدي فريد لكونه منظم بشكل عالي ومتراكم فالجزئيات الصغيرة يجب أن تعلم بشكل جيد قبل الانتقال إلى الجزئيات المتقدمة من مبدأ أن الرياضيات كل لا يتجزأ.

## أسئلة الدراسة :

السؤال الرئيسي للدراسة هو : ما صعوبات تعلم الرياضيات في المراحل العليا بالمرحلة الابتدائية بمنطقة المدينة المنورة؟ وما هي الاستراتيجيات الممكنة لحلها ؟ ويتفرع منه الأسئلة التالية:

- (1) ما مظاهر صعوبات تعلم الرياضيات في المراحل العليا بالمرحلة الابتدائية (نظري)؟
- (2) ما خصائص الطلاب الذين لديهم صعوبات تعلم تربوية في الرياضيات في المرحلة العليا من المرحلة الابتدائية (استبانة) من وجهة نظر المعلمين والمشرفين وأساتذة الجامعات ؟
- (3) هل توجد فروق دالة إحصائية بين وجهات نظر ممارسي التعليم في المدارس (المعلمين والمشرفين) وأساتذة الجامعات حول خصائص الطلاب الذين لديهم صعوبات تعلم تربوية في الرياضيات في المرحلة العليا من المرحلة الابتدائية تعزى إلى تغير الوظيفة عند مستوى دلالة 0.5 ؟

- (4) هل توجد فروق دالة إحصائية بين وجهات نظر المعلمين والمشرفين وأساتذة الجامعات حول خصائص الطلاب الذين لديهم صعوبات تعلم تربوية في الرياضيات في المرحلة العليا من المرحلة الابتدائية تعزى إلى تغير المؤهل عند مستوى دلالة 0.5 ؟

- (5) ما هي صعوبات تعلم الرياضيات الأكثر ظهوراً في المراحل العليا بالمرحلة الابتدائية (اختبار)؟

- (6) ما الاستراتيجيات المقترحة لحل صعوبات تعلم الرياضيات في المرحلة العليا بالمرحلة الابتدائية من وجهة نظر المعلمين والمشرفين والمختصين ( استبانة ) من وجهة نظر المعلمين والمشرفين وأساتذة الجامعات ؟

- (7) هل توجد فروق دالة إحصائية بين وجهات نظر ممارسي التعليم في المدارس (المعلمين والمشرفين) وأساتذة الجامعات حول الاستراتيجيات المقترحة لحل صعوبات تعلم الرياضيات في المرحلة العليا بالمرحلة الابتدائية تعزى إلى تغير الوظيفة عند مستوى دلالة 0.5 ؟

- (8) هل توجد فروق دالة إحصائية بين وجهات نظر ممارسي التعليم في المدارس (المعلمين والمشرفين) وأساتذة الجامعات حول الاستراتيجيات المقترحة لحل صعوبات تعلم الرياضيات في المرحلة العليا بالمرحلة الابتدائية تعزى إلى تغير المؤهل عند مستوى دلالة 0.5 ؟

## أهمية الدراسة :

تكمن أهمية الدراسة في كونها:

- 1- تقديم صورة حقيقية وصادقة لواقع صعوبات تعلم الرياضيات كما يراها المنفذون من معلمين ومشرفين ، ومن وجهة نظر المختصين التربويين .

## أهداف الدراسة :

تهدف الدراسة بوجه عام إلى تشخيص مواطن الصعوبة في تعلم الرياضيات بالمرحلة الابتدائية في المملكة العربية السعودية ، ومن أبرز أهدافها على وجه التحديد ما يلي:

- (1) تحديد الصعوبات التي تعترض عملية تعلم الرياضيات في الصفوف العليا من المرحلة الابتدائية.
- (2) تحديد خصائص الطلاب الذين لديهم صعوبات تعلم في الرياضيات.
- (3) اقتراح الاستراتيجيات المناسبة لحل صعوبات تعلم الرياضيات للمراحل العليا بالمرحلة الابتدائية.

## حدود الدراسة :

تحدد هذه الدراسة خصائص الطلاب الذين لديهم صعوبات تعلم في الرياضيات من وجهة نظر معلمي ومشرفي الرياضيات .

## مصطلحات الدراسة :

تضمنت الدراسة بعض المصطلحات التي يرى الباحث أن نعرض لكل منها تعريفاً إجرائياً يلتزم به خلال إجراء الدراسة، ومن أهم التعلم

ويمكن القول أن مفهوم التعلم كهدف يختلف عنه كعملية عنه كنتيجة ، فالتعلم كهدف هو وصف للخبرات المعرفية و المهارية والوجدانية التي ينبغي أن يمر بها الفرد لإحداث تغير مرغوب في سلوكه . أما التعلم كعملية فهو عملية عقلية تتم داخل بنية الفرد المعرفية ، يتم من خلالها تمثيل هذا الفرد لخبرات جديدة ومواءمة هذه الخبرات مع خبراته السابقة، والاحتفاظ بتلك الخبرات في ذاكرته . لكن التعلم كنتيجة هو مقدار التغير الذي طرأ على سلوك الكائن الحي نتيجة مروره بخبرات محددة ومقدار انتفاع الفرد بتلك الخبرات لخدمة نفسه والآخرين .

### 1- الإستراتيجية

واستراتيجيات التدريس يقصد بها كل تحركات المعلم داخل الفصل ، وأفعاله التي يقوم بها، والتي تحدث بشكل منتظم ومتسلسل ، ولكي تكون استراتيجية المعلم فعالة فإنه مطالب بمهارات التدريس : ( الحيوية والنشاط، الحركة داخل الفصل ، تغيير طبقات الصوت أثناء التحدث ، الإشارات، الانتقال بين مراكز التركيز الحسية، .... ) .

### 2- صعوبات تعلم الرياضيات

ويتبنى الباحث تعريف Logsdon (2007) من موقع <http://learningdisabilities.about.com> لصعوبة تعلم الرياضيات والتي تذكر بأنها تعبير عام عن الصعوبات الحادة في مجال الرياضيات وهذا التعبير يتضمن كل أنواع مشاكل الرياضيات والتي تتراوح من عدم القابلية لفهم معنى الأعداد إلى عدم القابلية لتطبيق مبادئ الرياضيات لحل المشاكل.

### الفصل الثاني، الإطار النظري، والدراسات السابقة

#### صعوبات الرياضيات

يشير Yetkin (2003) في دراسة بعنوان "Student Difficulties in Learning Elementary Mathematics 2003 ERIC Identifier" منشورة على موقع ERIC إلى الصعوبات تنقسم إلى:

1) صعوبات في تعلم الرموز الرياضية : تلعب الرموز المكتوبة القياسية دور مهم في تعلم الطالب للرياضيات ، فالطلاب في التعليم العام يواجهون صعوبات في بناء المعاني الرياضية من الرموز ، فمن الملاحظ أن الطلاب يشتقون معاني للرموز من المواد المحسوسة أو التجارب أو اللغة اليومية ، ومثال لذلك رمز الرمز "+" والذي يمكن أن يفهمه الطالب على شكل قصة طفل أعطته أمه 4 قطع حلوى ثم أعطته قطعتين ومن ثم السؤال عن كم أصبح عنده ؟ بنفس الطريقة يشير إلى أن الطلاب يمكن أن يفهموا  $\frac{4}{3}$  كثلاثة من قطع بيتزا أو كعكة تقطع إلى أربع قطع.

وأغلب الصعوبات في فهم الرموز تأتي في الحقيقة من الشكل القياسي لها ، فالرموز المكتوبة قد تكون لها معاني مختلفة في أماكن مختلفة وهذا ليس دائماً ، على سبيل المثال، في حل المعادلة  $2 + 3 = 4$  يختلف معنى س عنه في المعادلة  $2 + 3 = 5$  ، فلكي يفهم الطالب الرموز الرياضية يحتاج لتعلم أن المعاني المتعددة للرموز تعتمد على سياق المشكلة المعطاة ، لذا يجب أن يكون الطلاب مدركين لمعنى الرموز الرياضية في سياقات المشاكل المختلفة ، وأيضاً من المهم أن يبني الطلاب مفهوم لكتابة الرمز حسب وجوده في النظام وقد تكون هذه الأنظمة واضحة للبالغين ، لكن الطلاب قد لا يبنوا العلاقات في الأنظمة بسهولة لوحدهم ، لذا يجب على المعلمين أن يكونوا مدركين لهذه الصعوبات ويزودون طلابهم بالفرص لمعرفة هذه العلاقات وجعلها ضمن نظام متكامل يقرأ فيه الرمز .

ويذكر كل من Et al., Nathan (2003) على موقع <http://www.pbs.org> أن صعوبة تعلم الرموز الرياضية شائعة جداً فكثير من الطلاب يواجهون صعوبة في الربط بين المفاهيم المجردة والواقع عند استخدام الرموز في عرضها ، وتتمثل في الأصل هذه الصعوبة في عدم فهم الرموز وماذا تمثله في العالم المادي فالطالب يعرف أن  $\Sigma$  يعني مجموع لكن لا يفهم ماذا يمثل في الواقع وغيره من

الرموز التي كثيراً ما تشكل معرفتها صعوبة وليس حفظها لدى التلاميذ  $\Phi, \Xi, \Sigma, \sigma, \%, <, >, \pi, \mu, \frac{3}{4}, \frac{1}{2}, \frac{1}{4}, \frac{1}{2}, \epsilon, \exists$ .

(2) صعوبة في إتقان الحقائق الأساسية للأعداد وصعوبات في تعليم المفاهيم والإجراءات الرياضية الأولية يشتكي كثير من المعلمين كثيراً من أنهم يضيع وقت الشرح ووقت حل التمارين في استرجاع الحقائق الرياضية البسيطة فمثلاً في الصف الخامس عند شرح القسمة المطولة نجد الطالب يتوقف كثيراً عند عمليات الضرب التي من المفترض أن تكون حاضرة في ذهنه بشكل سريع دون الحاجة لاستخدام العد اليدوي للحصول على نتائج الضرب ويقول Garnett (1998) في مقالة منشورة في موقع <http://www.ldonline.org> أن العديد من الطلاب عندهم مشكلة مستديمة في استظهار حقائق الأعداد الأساسية في الأربع العمليات الأساسية، وهم يبذلون جهد كبير في محاولة إنجاز عمليات بسيطة في مراحل متقدمة من تعلم الرياضيات فبدلاً من أن يعرف بسهولة بأن  $12 = 7 + 5$ ، أو بأن  $6 \times 4 = 24$ ، تجده يستمرّ بشكل مرهق باستخدام حساب الأصابع، أو استخدام علامات بالقلم الرصاص ويكون غير قادر على تطوير استراتيجيات جيدة لإنجاز هذه العمليات بسرعة في ذهنه.

ويذكر كل من Et al., Nathan (2003) على موقع <http://www.pbs.org> أن حقائق الأعداد الحسابية الأساسية مثل  $(12 = 3 + 9$  أو  $8 = 4 \times 2)$  يصعب على كثير من الطلاب تذكرها فالنقص في مثل هذه الحقائق الثابتة والبسيطة في المرحلة الابتدائية يؤدي إلى عدم وصول الطالب إلى مراحل التفكير المتقدمة بسبب تعطله في الحسابات البسيطة. وفي هذا الإطار يمكن أن نعرف مصطلح استخدم كثيراً في تعلم الرياضيات وهو الطلاقة الحسابية والتي يمكن أن نعرفها في أبسط صورة بأنها القدرة على استدعاء الإجابات للحقائق الحسابية الأساسية بشكل سلس وطليق وهي تمثل شرطاً أساسياً لاكتساب قدرات رياضية عالية المستوى، وأساسها المصلح يكمن في أن كل البشر لديهم قدرة محددة على معالجة المعلومات، وهذا معناه أن الفرد لا يستطيع أن يفكر ويفعل أشياء كثيرة في وقت واحد.

(3) صعوبات في حل المسائل الرياضية يجد بعض التلاميذ عملية حل المسائل الرياضية عملية صعبة ومعقدة وليست في متناولهم وخاصة المسائل اللفظية، وهذه الصعوبة لها العديد من الأسباب وكما ناقشنا كل من (Babbitt & Miller 1996-pp.391-401) في مرجعتهما للأدبيات وتشمل هذه الصعوبات على ..

- (1) صعوبة قراءة المسألة.
  - (2) التعثر في التفريق بين المعلومات الأساسية وغير الأساسية.
  - (3) عدم القدرة على تحديد العملية الرياضية.
  - (4) الوقوع في أخطاء حسابية.
  - (5) فقدان خطوات مهمة في طريق حل المسألة.
  - (6) مشاكل واضطرابات في تنظيم المعلومات المتضمنة في المسألة.
- والمسائل الرياضية مشكلة المشاكل في الرياضيات ومن أكثر الصعوبات التي نوقشت فقد أكد فهر (1976م، ص 536) أن دراسة المسائل الرياضية اللفظية في حد ذاتها مشكلة بالنسبة للتلاميذ في أي مرحلة تعليمية، والدليل على ذلك أنه عندما تتحول إحدى المسائل اللفظية إلى عملية حسابية، تتضاءل صعوبتها، وبالعكس إذا تحولت مجموعة من المعادلات السهلة إلى مسائل لفظية ارتفع مستوى صعوبتها.

(4) صعوبة لغة الرياضيات Mathematics as Language لغة الرياضيات ليست مجرد وسيلة لمساعدة الإنسان على التفكير وحل المشكلات وعمل النتائج، ولكنها وسيلة هامة جداً في تبادل مجموعة من الأفكار بوضوح ودقة ولذلك فهي تعتبر لغة خاصة بحق، وقد أطلق عليها في الحقيقة لغة العلم The Language of Science ويذكر Garnet (1998) في مقالة منشورة في موقع <http://www.ldonline.org> أن الرياضيات تستخدم لغة غير مؤلفة

للطالب وغير مستخدمة في الحياة العامة مثل ( كسور، كسور عشرية، مقياس، هندسة، جذر، نسبة، و احتمال وإحصاءات ) ، فالطلاب يرون صعوبة معينة في التعامل مع هذه اللغة .

(5) نقص القدرة على التصور البصري والمكاني للرياضيات وصعوبات الترتيب

يذكر كل من Nathan, Et al. ( 2003 ) على موقع <http://www.pbs.org> أن نقص القدرة على التصور البصري والمكاني للرياضيات هو من أقل الصعوبات شيوعاً ويقصد به عدم القابلية لتصور مفاهيم الرياضيات عملياً ، فالطلاب الذين عندهم هذه المشكلة قد يكونون غير قادرين على الحكم على الحجم النسبي بين ثلاثة أجسام متباينة مثلاً .

ويذكر Garnett ( 1998 ) في مقالة منشورة في موقع <http://www.ldonline.org> أن عدد قليل من الطلاب عندهم صعوبة في المنظمة المحركة البصرية المكانية، التي قد تؤدي إلى ضعف أو نقص في فهم المفاهيم ، وهناك مجموعات ليس بالقليلة ربما عند تعلمها الرياضيات تتطلب تأكيد كبير جداً على الأوصاف الشفوية الدقيقة والواضحة فهم لا يستطيعون التفاعل مع الرسومات وفهمها والحل عليه وكذلك الأشكال الهندسية لذا يجب التركيز على استخدام اللغة الشفوية وشرح معناها والتي غالباً ما تكون ممتازة لديهم.

(6) قلق الرياضيات

بعض الطلاب يفعل أو يضطرب عندما يطلب منه حل مشكلة رياضية وهذا ما يسمى قلق الرياضيات أو فوبيا الرياضيات ، لأن الطالب لا يحبذ مادة الرياضيات ولا ينظر إليها بارتياح ويحاول تجنبها ويعبر عن غضبه حول هذه المادة وأنها غير مفيدة له ويقصد بها تعقيد الطالب فقط ، كما يُعتقد في أغلب الأحيان أن الطلاب الذين لديهم قلق الرياضيات يعتقدون بأن الرياضيات غير مهمة ، وهذا ربما لتجنب دراستها والكثير من الباحثين في أمريكا كتبوا عن هبوط مستوى الطلاب في الرياضيات والضعف العام في تعلم الرياضيات the practice of setting higher standards وهذا ما تشير إليه المنظمات المعنية في تعلم الرياضيات مثل: the practice of setting higher standards - the Third International Mathematics - Science Study (TIMSS) and Scholastic Aptitude Test (SAT) .

الفصل الثالث منهج الدراسة

- منهج الدراسة ومجتمعها وعينتها وأدواتها وأساليبها الإحصائية وذلك على النحو التالي:  
منهج الدراسة:

استخدم الباحث في دراسته المنهج التشخيصي العلاجي وقام بالخطوات التالية:

- (1) قام بالإطلاع على الأدبيات العربية والأجنبية والتي ناقشت صعوبات تعلم الرياضيات
- (2) ومن ثم اختار تصنيفاً معيناً وجده مناسباً لصعوبات تعلم الرياضيات وقام بمناقشتها من جميع الجوانب.

وبناء على ذلك قام الباحث بالخطوات التالية وهي:

- (3) عمل استبانة للمعلمين والمُشرفين والمختصين بتدريس الرياضيات من خلالها يحددون ما هي الخصائص التي تنطبق على الطلاب الذين لديهم صعوبات تعلم في مادة الرياضيات والهدف من هذه الخطوة معرفة ما إذا كان هناك خصائص معينة للطلاب الذين يواجهون صعوبة تعلم في الرياضيات وذلك لمعرفةهم مسبقاً وتقديم المعالجة المبكرة لهم .
- (4) وضع اختبار للثلاث للصفوف التعليمية في المرحلة الابتدائية (الصف الثالث والصف الرابع والصف الخامس ) ويحتوي هذا الاختبار على أسئلة حول نفس أنواع الصعوبات
- (5) قام الباحث بوضع استراتيجيات لحل الصعوبات التي ظهرت لدى الطلاب عن طريق مراجعة الأدبيات العربية والأجنبية ووضعها في استبانة وعرضها على عينة من معلمي ومُشرفي ومختصي الرياضيات لتحديد أي إستراتيجية هي أقرب لتكون حل لأي صعوبة من صعوبات تعلم الرياضيات التي تعرض لها الباحث في دراسته.



6) ثم وضع الباحث النتائج التي توصل إليها وبعض التوصيات والمقترحات التي ظهرت له الحاجة إليها خلال بحثه.

### مجتمع الدراسة:

مجتمع الاستبانتين : جميع معلمي ومشرفي الرياضيات في المدينة المنورة وأعضاء هيئة التدريس (تخصص مناهج وطرق تدريس الرياضيات) في الجامعات السعودية .

مجتمع الاختبار : جميع طلاب الصف الرابع الابتدائي والخامس الابتدائي والسادس الابتدائي بمنطقة المدينة المنورة التعليمية المسجلين في الفصل الدراسي الأول من العام الدراسي 1429هـ/1430هـ وعددهم حسب إحصائية إدارة التربية والتعليم بمنطقة المدينة المنورة :الصف الرابع الابتدائي ( 2397 ) طالباً ، الصف الخامس الابتدائي ( 2143 ) طالباً ، الصف السادس الابتدائي ( 1834 ) طالباً .

### عينة الدراسة:

عينة الاستبانتين : ( 220 ) من معلمي الرياضيات ومشرفيها ومختصيها .  
عينة الاختبار : ( 184 ) طالباً للصف الرابع الابتدائي . ( 170 ) طالباً للصف الخامس الابتدائي . ( 117 ) طالباً للصف السادس الابتدائي .

### أدوات الدراسة:

استخدم الباحث في دراسته أداة مكونة :

- اختبار التحصيلي .
- استبانة لخصائص الطلاب الذين لديهم صعوبات تعلم في مادة الرياضيات .
- استبانة للاستراتيجيات المناسبة لحل صعوبات تعلم الرياضيات .

## الفصل الرابع نتائج الدراسة

وكانت نتائج التحليل باستخدام برنامج spss كالتالي:

أولاً: تم حساب المتوسطات لجميع المحاور وللإستبانة كاملة وقد كان ترتيب المحاور حسب الأعلى في المتوسط كما يلي :

مما يدل على أن الصعوبات والخصائص الموجودة في المحور الخامس ( صعوبات في حل المسائل الرياضية ) كانت الأكثر مطابقة ودلالة حسب رأي معلمي ومشرفي ومختصي الرياضيات .

ثانياً : بعد حساب المتوسطات للمحور الأول والذي يحوي 13 فقرة كانت النتائج كما يلي :

الأعلى هو المحور "يواجه صعوبة في تذكر الحقائق الرياضية عندما يحتاجها لحل تمارين رياضية .  
وظهر في المحور الثاني ( الصعوبات المكانية والبصرية أو صعوبات الترتيب ) أن أكثر الفقرات موافقة من قبل المستجيبين هي الفقرة رقم 8 ( يواجه صعوبات في معالجة (( التعامل مع )) المعلومات المعطاة على الأشكال الهندسية )

وظهر في المحور الثالث ( صعوبات لغة الرياضيات ) أن أكثر الفقرات موافقة من قبل المستجيبين هي الفقرة رقم 6 ( يواجه مشكلة في تذكر المصطلحات الرياضية المجردة )

وظهر في المحور الرابع ( صعوبات في التعرف على الرموز ) أن أكثر الفقرات موافقة من قبل المستجيبين هي الفقرة رقم 3 ( يتعثر في حل المسائل التي إجاباتها تعتمد على رموز رياضية )

وظهر في المحور الخامس أن أكثر الفقرات موافقة من قبل المستجيبين هي الفقرة رقم 9 ( يجد صعوبة في معرفة متى يمكن جمع المهام في مسألة رياضية متعددة الخطوات )

- ثالثاً :** ولتطبيق اختبار تحليل التباين الأحادي **ANOVA** يجب أن تتحقق اشتراطاته وهي:
- لتطبيق اختبار تحليل التباين الأحادي يجب توفر خمس شروط وهي:
- 1- الاستقلالية : وقد كانت متحققة لأن الباحث اختار كل فرد من أفراد عينته بمعزل عن الآخرين.
  - 2- العشوائية : فقد اختار الباحث عينته بطريقة عشوائية وعدد أفراد العينة أكثر من 30 فرد حيث بلغ عدد أفراد العينة 220 فرد.
  - 3- الاعتدالية. وهي متحققة بدرجة جيدة كما في الرسوم التالية للمنحنى الطبيعي للاستجابات.

## الاختبار التشخيصي

وقد تم قياس الصدق عن طريق معامل بيرسون وكانت النتائج كالتالي:

جدول معاملات الارتباط لاختبارات صعوبات تعلم الرياضيات ( 1 - 2 )

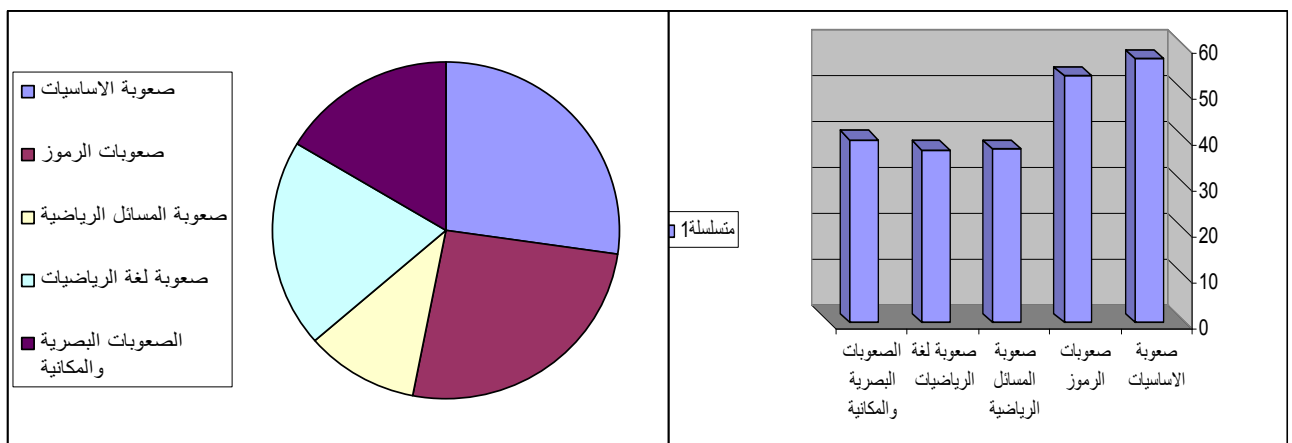
م	المرحلة	معامل ارتباط Pearson
1	اختبار الصف الرابع	0.844
2	اختبار الصف الخامس	0.831
3	اختبار الصف السادس	0.861

وهذا الارتباط جيد في الثلاث الاختبارات ومن خلال هذا الاختبار يحدد الباحث مدى وجود صعوبة معينة في كل مرحلة من المراحل العليا من المرحلة الابتدائية ، وبعد القيام بالتحليلات الإحصائية للثلاث الاختبارات للثلاث مراحل كانت النتائج كالتالي:

### 1) اختبار الصف الرابع كانت متوسطات درجات الطلاب

جدول متوسطات درجات الطلاب في اختبار الصف الرابع ( 2 - 2 )

السؤال	الصعوبة	المتوسط	الانحراف المعياري	الدرجة من 100
الأول	صعوبات في إتقان الحقائق الأساسية للأعداد وتعلم المفاهيم والإجراءات الرياضية الأولية.	6.869 6	3.5864	57.2463
الثاني	صعوبات في التعرف على الرموز.	4.8152	2.5888	53.5029
الثالث	صعوبات في حل المسائل الرياضية.	4.5109	4.5826	37.5902
الرابع	صعوبات لغة الرياضيات.	4.1196	2.8394	37.4504
الخامس	الصعوبات المكانية والبصرية أو صعوبات الترتيب.	8.304 3	6.3984	39.5452
جميع الأسئلة		28.619 6	17.0943	44.7195



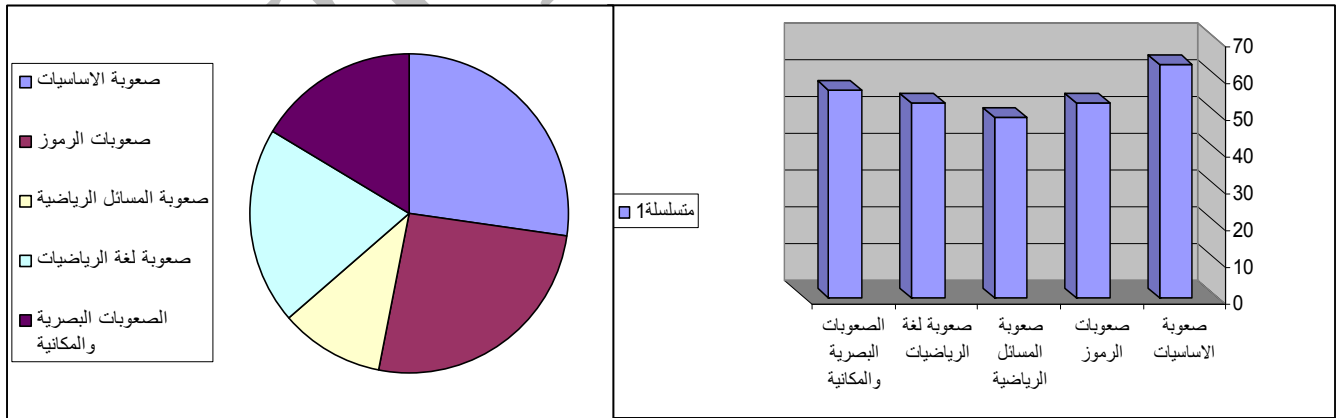
وعلى شكل قطاعات دائرية

ومن الجدول يتضح أن أكثر الصعوبات ظهوراً لدى طلاب الصف الرابع هي 37.4504 صعوبة حل المسائل الحسابية وكان متوسط درجات طلاب الصف الرابع في هذه الصعوبة صعوبات لغة الرياضيات بمتوسط 37.4504 وقد جاءت هاتان الصعوبتان متقاربتان من حيث المتوسط ومن ثم صعوبات في حل المسائل الرياضية بمتوسط 37.5902 ومن ثم الصعوبات المكانية والبصرية أو صعوبات الترتيب بمتوسط 39.5452 ثم صعوبات التعرف على الرموز بمتوسط 53.5029 ثم صعوبات في إتقان الحقائق الأساسية للأعداد وتعلم المفاهيم والإجراءات الرياضية الأولية بمتوسط 57.2463 وهذا من وجهة نظر الباحث منطقي حيث أن الطالب في هذه المرحلة المبكرة تكون لغة الرياضيات لديه ضعيفة لأن المصطلحات تكون جديدة ولأول مرة يستخدمها وكذلك حل المسائل الحسابية يكون ضعيف لأن الطلاب عادة يكون لديهم مشكلة في حل المسائل الحسابية وهذه الصعوبة مرتبطة ارتباط مباشر بصعوبة لغة الرياضيات السابقة ومن ثم يأتي التصور البصري والمكاني ضعيفا في هذه المرحلة فحسب مراحل بياجيه لا ينمو هذا التصور إلا في مرحلة متقدمة .

## (2) اختبار الصف الخامس كانت متوسطات درجات الطلاب

جدول متوسطات درجات الطلاب في اختبار الصف الخامس ( 2- 3 )

السؤال	الصعوبة	المتوسط	الانحراف المعياري	الدرجة من 100
الأول	صعوبات في إتقان الحقائق الأساسية للأعداد وتعلم المفاهيم والإجراءات الرياضية الأولية.	25.3294	8.4872	63.3235
الثاني	صعوبات في التعرف على الرموز.	7.3647	4.7430	52.6046
الثالث	صعوبات في حل المسائل الرياضية.	4.8706	2.8569	48.7059
الرابع	صعوبات لغة الرياضيات.	2.6471	1.3247	52.9412
الخامس	الصعوبات المكانية والبصرية أو صعوبات الترتيب.	8.9882	4.2384	56.1765
جميع الأسئلة		49.2000	15.1617	57.8824



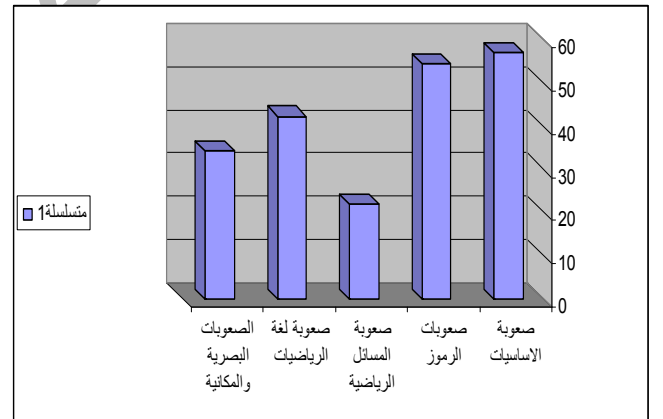
درجات طلاب الصف الخامس من 100 في سؤال كل صعوبة درجات على شكل أعمدة وعلى شكل قطاعات دائرية

ومن الجدول يتضح أن أكثر الصعوبات ظهوراً لدى طلاب الصف الخامس هي صعوبة حل المسائل الحسابية وكان متوسط درجات الطلاب في سؤال هذه الصعوبة 48.7059 ومن ثم جاءت صعوبات التعرف على الرموز ثانياً متقاربة مع صعوبة لغة الرياضيات ومن ثم جاءت الصعوبات المكانية والبصرية أو صعوبات الترتيب رابعاً ثم جاءت أخيراً صعوبات في إتقان الحقائق الأساسية للأعداد وتعلم المفاهيم والإجراءات الرياضية الأولية ، ونلاحظ أن صعوبات حل المسائل الرياضية قد كانت ظاهرة بشكل كبير في الصف الرابع وفي الصف الخامس وكذلك صعوبة لغة الرياضيات .

### (3) اختبار الصف السادس كانت متوسطات درجات الطلاب

جدول متوسطات درجات الطلاب في اختبار الصف السادس ( 2- 4 )

السؤال	الصعوبة	المتوسط	الانحراف المعياري	الدرجة من 100
الأول	صعوبات في إتقان الحقائق الأساسية للأعداد وتعلم المفاهيم والإجراءات الرياضية الأولية.	19.4615	8.1627	57.2397
الثاني	صعوبات في التعرف على الرموز.	7.3162	4.0357	54.5671
الثالث	صعوبات في حل المسائل الرياضية.	3.7692	4.1655	22.1702
الرابع	صعوبات لغة الرياضيات.	5.9487	3.7666	42.4906
الخامس	الصعوبات المكانية والبصرية أو صعوبات الترتيب.	5.5214	3.9536	34.5085
جميع الأسئلة		42.0171	17.1720	44.6994



درجات طلاب الصف السادس من 100 في سؤال كل صعوبة درجات على شكل أعمدة وعلى شكل قطاعات دائرية

ومن الجدول يتضح أن أكثر الصعوبات ظهوراً لدى طلاب الصف السادس هي صعوبة حل المسائل الحسابية وكان متوسط درجات الطلاب في سؤال هذه الصعوبة 22.1702 ثم صعوبات التعرف على الرموز الصعوبات المكانية والبصرية أو صعوبات الترتيب ثم صعوبات ثم صعوبات لغة الرياضيات ثم

صعوبات في التعرف على الرموز ثم صعوبات في إتقان الحقائق الأساسية للأعداد وتعلم المفاهيم والإجراءات الرياضية الأولية .

وكما يظهر من الجدول العام فإن صعوبة حل المسائل الرياضية كانت الأكثر ظهوراً عند الصفين الخامس والسادس بينما كانت الثانية في الظهور للصف الرابع وكانت الصعوبات المكانية والبصرية أو صعوبات الترتيب كانت الأكثر ظهوراً في الصف الرابع بينما كانت صعوبات في إتقان الحقائق الأساسية للأعداد وتعلم المفاهيم والإجراءات الرياضية الأولية الأقل ظهوراً في الثلاث صفوف ويعزو الباحث ذلك لأن الطلاب مازالوا حديثي عهد بالأساسيات في الرياضيات وهذه المراحل هي مرحلة دراسة الأساسيات بينما يتوقع الباحث أن يزداد ظهور هذه الصعوبة في المرحلة المتوسطة والثانوية لأن هذه المراحل يبدأ فيه البناء على الأساسيات وهي بعيدة عن الوقت الذي أعطيت فيه الأساسيات لذا فعي عرضه للنسيان.

جدول متوسطات درجات الطلاب في كل الصفوف مع ترتيب الصعوبات حسب الأكثر ظهوراً ( 2 -

( 5

الصعوبة	الصف 6	ترتيبها	الصف 5	ترتيبها	الصف 4	ترتيبها
صعوبات في إتقان الحقائق الأساسية للأعداد وتعلم المفاهيم والإجراءات الرياضية الأولية.	57.23 97	5	63.3235	5	57.2463	5
صعوبات في التعرف على الرموز.	54.56 71	4	52.6046	4	53.5029	4
صعوبات في حل المسائل الرياضية.	22.170 2	1	48.7059	1	37.5902	2
صعوبات لغة الرياضيات.	42.49 06	3	52.9412	3	37.4504	1
الصعوبات المكانية والبصرية أو صعوبات الترتيب.	34.50 85	2	56.1765	2	39.5452	3
المتوسط العام للاختبار من مئة	44.6994		57.8824		44.7195	

## الاستبانة الثانية

في هذا الجزء تم إعداد استبانة للاستراتيجيات التي يمكن أن تساهم في حل صعوبات تعلم الرياضيات التي درسها الباحث في الإستبانة الأولى فمن خلالها يأخذ الباحث رأي معلمي ومشرفي ومختصي الرياضيات في أي الاستراتيجيات الأنسب لحل كل صعوبة وبعد تحكيم الإستبانة من قبل مجموعة من المحكمين ملحق ( ) للتأكد من صدقها تم تطبيق الإستبانة على عينة استطلاعية مكونة من 30 فرد مرتين بفارق زمني أسبوعين للتأكد من ثباتها فكانت النتائج كالتالي :

تم حساب الثبات بحساب النسبة المئوية لعدد مرات التوافق في استجابات الأفراد (تم ذلك باستشارة عدد من خبراء الإحصاء التربوي ) وهم :د. عبد اللطيف الرايقي و د. علي حمزة هجان حيث كان ثبات الإستبانة 2 == 0.76

ومن ثم تم توزيع هذه الإستبانة على نفس أفراد العينة التي وزعت عليها الإستبانة الأولى وكانت نتائج التحليل الإحصائي باستخدام التكرارات كما يلي :

ويتضح أفراد العينة ( المستجيبين ) قد اختاروا عدد من الاستراتيجيات لحل كل صعوبة من

صعوبات تعلم الرياضيات وهي كالتالي:

- (1) ففي صعوبات في إتقان الحقائق الأساسية للأعداد وتعلم المفاهيم والإجراءات الرياضية الأولية أكثر خمس استراتيجيات يرون أنه فعالة في حل هذه الصعوبة مرتبة تنازلياً.
  - استراتيجية حل المشكلات.
  - إستراتيجية التدريس القياسي Deductive Method وفق "نموذج ميرل وتينسون .
- (2) الصعوبات المكانية والبصرية أو صعوبات الترتيب يرى المستجيبون أن أكثر استراتيجيات فعالة في حل هذه الصعوبة مرتبة تنازلياً هي التعلم التعاوني ثم الطريقة الاستنتاجية .
- (3) صعوبات لغة الرياضيات يرى المستجيبون أن أكثر خمس استراتيجيات فعالة في حل هذه الصعوبة مرتبة تنازلياً هي: التعلم البنائي . ثم نظرية أوزابل في التعلم اللفظي ذي المعنى .
- (4) صعوبات في التعرف على الرموز يرى المستجيبون أن أكثر خمس استراتيجيات فعالة في حل هذه الصعوبة مرتبة تنازلياً هي: إستراتيجية التفكير الإبداعي ثم التعلم من الأقران.
- (5) صعوبات حل المسائل الرياضية يرى المستجيبون أن أكثر خمس استراتيجيات فعالة في حل هذه الصعوبة مرتبة تنازلياً هي: الطريقة الاستقرائية . ثم الذكاءات المتعددة.
- (6) صعوبات تتعلق بقلق الرياضيات يرى المستجيبون أن أكثر خمس استراتيجيات فعالة في حل هذه الصعوبة مرتبة تنازلياً هي: مشاركة الأهل في التعلم . ثم إستراتيجية المحاولة والخطأ

## الفصل الخامس نتائج الدراسة وتوصياتها

نتائج الدراسة

توصلت الدراسة إلى النتائج التالية:

- (1) أن هناك خصائص خاصة بكل صعوبة من صعوبات تعلم الرياضيات حسب وجهة نظر معلمي ومشرفي ومختصي الرياضيات .
- (2) أن أكثر الصعوبات ظهوراً عند طلاب الصف الخامس والصف السادس هي "صعوبات في حل المسائل الرياضية" أما الصف الرابع فكانت " صعوبات لغة الرياضيات " .
- (3) ففي الصف الرابع كان ترتيب الصعوبات من حيث الأكثر ظهوراً لدى الطلاب: صعوبات لغة الرياضيات.
- (4) وفي الصف الخامس كان ترتيب الصعوبات من حيث الأكثر ظهوراً لدى الطلاب: صعوبات في حل المسائل الرياضية.
- (5) وفي الصف السادس كان ترتيب الصعوبات من حيث الأكثر ظهوراً لدى الطلاب: صعوبات في حل المسائل الرياضية.
- (6) حسب وجهة نظر معلمي ومشرفي ومختصي الرياضيات كانت استراتيجية حل المشكلات أكثر الاستراتيجيات فعالية في حل صعوبات إتقان الحقائق الأساسية للأعداد وتعلم المفاهيم والإجراءات الرياضية الأولية .
- (7) حسب وجهة نظر معلمي ومشرفي ومختصي الرياضيات كانت استراتيجية التعلم التعاوني أكثر الاستراتيجيات فعالية في حل الصعوبات المكانية والبصرية أو صعوبات الترتيب.
- (8) حسب وجهة نظر معلمي ومشرفي ومختصي الرياضيات كانت استراتيجية التعلم البنائي أكثر الاستراتيجيات فعالية في حل صعوبات لغة الرياضيات.
- (9) حسب وجهة نظر معلمي ومشرفي ومختصي الرياضيات كانت استراتيجية التفكير الإبداعي أكثر الاستراتيجيات فعالية في حل صعوبات التعرف على الرموز .

(10) حسب وجهة نظر معلمي ومشرفي ومختصي الرياضيات كانت استراتيجية الطريقة الاستقرائية أكثر الاستراتيجيات فعالية في حل صعوبات في حل المسائل الرياضية .

(11) حسب وجهة نظر معلمي ومشرفي ومختصي الرياضيات كانت استراتيجية مشاركة الأهل في التعلم أكثر الاستراتيجيات فعالية في حل صعوبات قلق الرياضيات.

#### التوصيات

- في ضوء نتائج الدراسة وما لمسها الباحث أثناء تنفيذه لهذه الدراسة فإن الباحث يوصي بما يلي:
- (1) يدعوا الباحث الجهات المسؤولة في وزارة التربية والتعليم إلى دعم البحث في مجال صعوبات التعلم وخاصة في مجال تعلم الرياضيات نظرا لقلة الدراسات في هذا المجال.
  - (2) أظهرت نتائج الدراسة أنّ صعوبات تعلم الرياضيات موجودة لدى طلاب المرحلة العليا من المرحلة الابتدائية بشكل واضح.
  - (3) الحاجة لتدريب المعلمين على كيفية اكتشاف هذه النوعيات من الصعوبات وكيفية التعامل معهم.
  - (4) تزويد المعلم بمعلومات عن الصعوبات التي تكون أكثر ظهورا في كل مرحلة من مراحل التعليم.

#### المقترحات

في ضوء نتائج الدراسة ومن ملاحظات الباحث أثناء إجراء دراسته ، فإن الباحث يقترح مجموعة من البحوث والدراسات ، التي يمكن إجراؤها ، وتتعلق بموضوع هذا البحث ، أو مواضيع أخرى متشابهة مثل:

- (1) تحديد صعوبات التعلم الرياضيات في بقية المراحل التعليمية ( المراحل الدنيا من المرحلة الابتدائية - المرحلة المتوسطة - المرحلة الثانوية ) .
- (2) عمل دراسات حول متى تبدأ ظهور صعوبات التعلم في مادة الرياضيات .
- (3) إجراء دراسات حول مدى ظهور صعوبات التعلم الرياضيات في مرحلة الروضة أو بعدها .
- (4) عمل اختبارات مرجعية لاكتشاف كل صعوبة في كل مرحلة من المراحل الدراسية ويكون كل اختبار خاص باكتشاف صعوبة معينة.
- (5) وضع دليل لشرح استراتيجيات تعلم الرياضيات مع تجريب مدى مساهمة كل إستراتيجية لحل صعوبة معينة في كل مرحلة.
- (6) إجراء دراسة مماثلة على الطالبات ومقارنتها بهذه الدراسة.

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- <sup>18</sup> Legal clinics may offer a variety of different surfaces, and may specialize in different areas of the law. Some specialties may include criminal law, immigration law, obligation law, property law, family law, domestic violence, labour law, administrative law, tax law and basic community civil legal services. See also, (Karacan, 2012, pp. 72-73). A large law school in an urban area may operate several legal clinics throughout the city, giving students the opportunity to test out their interest and ability in different areas of the law. See for further information about refugee law, Guedde, P. (2014). Globalized Legal Education, Human Rights Lawyering, and Institutional Form: The Case of a Refugee Law Clinic in South Korea. *Clinical Law Review*, 20 (2), 355-378; Johnson, K. R., & Perez, A. (1997-1998). Clinical Legal Education and the U.C. Davis Immigration Law Clinic: Putting Theory into Practice and Practice into Theory. *SMU Law Review*, 1423-1460; (Andrade, p. 1). See for further information about the legal clinic of women's rights, Olomola, O., & Bamgbose, O. (2013). Collaborating with Other Disciplines: Best Practice for Legal Clinics-A Case Study of the Women's Law Clinic. *International Journal of Clinical Legal Education*, 19, 355-371.
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## Öğretmenlerin Andımıza İlişkin Metaforik Algıları

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### Abstract

Bu araştırmanın amacı; bir ülkede ulusal birliğin sağlanmasında çok önemli bir işlev yüklenen "Andımız"ın öğretmenler arasında ne gibi bir anlam aracılığıyla belirlemeye çalışmaktır. Araştırmanın çalışma grubunu, 2013-2014 eğitim- öğretim yılında Antalya İli Konyaaltı İlçesi Gazi Mustafa Kemal kadrolu görev yapan branş öğretmenleri oluşturmaktadır (n=51). Araştırmaya katılan kadrolu branş öğretmenlerinin 33'ü kadın ( % 64 ) , 18'i erkek ( % 36 ) oluşmaktadır. Anılan öğretmenlerin "Andımız" kavramına ilişkin olarak kullandıkları metaforlar ve gerekçeleri, içerik çözümlemesi tekniği ile incelenmiştir. Sonuçlarına göre ; 121 tane ayrı metafor üretilmiştir. © 2014 The Authors. Published by Elsevier Ltd. Peer-review under responsibility of the Sakarya University.

**Keywords:** metafor, andımız, öğretmen

### 1. Giriş

Türk Dil Kurumu (2014) sözlüğünde "ant" "Tanrıyı veya kutsal bilinen bir kişiyi , bir şeyi tanık göstererek bir olayı doğrulama , yemin etme" anlamına sahiptir. Millî Eğitim Bakanlığı Talim Terbiye Kurulu 10 Mayıs 1933 tarih ve 101 sayı kararı ile "Öğrenci Andı'nı", uygulamaya geçirmiştir.

İlköğretim okullarında öğrencilerin, her gün dersler başlamadan önce öğretmenlerin gözetiminde topluca söyledikleri Öğrenci Andı, öğrencilere nasıl kavratılacağı, 18 Mayıs 1933 tarih ve 1749/42 sayılı Bakanlık genelgesinde açıklanmıştır. Bu genelgeye göre her öğrencinin bu emri dikkatle okuması ve uygulaması gerekir. Öğrenci Andı'nın amacı ve söylenirken nelere dikkat edilmesi , açıklanmıştır:

Öğrenci andında yer alan her sözde Türk Millî Eğitiminin amacının özü vardır. Andımızda geçen her sözün ve ettikleri

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yeminin anlamı öğrencilere iyi kavratılmalı. Öğrenciler, okul içinde ve okul dışındaki hayatlarında, her sabah söyledikleri anda göre hareket etmeli ve fflçalışkanffl olmalı, küçükleri korumalı, büyükleri saymalı, yurdunu ve milletini özünden çok sevmeli, yükselmeyi ve ileri gitmeyi hedeflemeli. Atatürk'lün açtığı yolda, gösterdiği hedefe durmadan yürümelidir. Yeri gelince varlığını, Türk varlığına armağan edebilmelidir.

Andımız 59. , 60. ve 61. Hükümetlerin programında yer alan "Demokratikleşme Paketi" çerçevesinde kaldırılmıştır. Resmi Gazete'nin 08/05/2007 sayılı yayınında Millî Eğitim Bakanlığı'nın İlköğretim Kurumları Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmeliği'nde, "27/05/2007 sayılı Resmi Gazete'de yayımlanan Millî Eğitim Bakanlığı İlköğretim Kurumları Yönetmeliği'nin 12'nci maddesi yürürlükten kaldırılarak, bu yönetmeliğin 12'nci maddesi yürürlükte değildir" ifadesine yer verilmiştir.

Bu araştırmanın amacı; bir ülkede ulusal birliğin sağlanmasında çok önemli bir işlev yüklenen andımızın öğretmenler arasında ne gibi bir anlam aracılığıyla belirlemeye çalışmaktır. Bu amaç doğrultusunda aşağıdaki araştırma problemlerinin yanıtları aranacaktır.

1. 1. Öğretmenlerimizin "Andımıza" ilişkin kullandıkları metaforlar nelerdir?
2. 2. Öğretmenlerimiz "Andımıza" ilişkin kullandıkları metaforlar "deneyimlerine (meslekteki çalışma yıllarına)" göre nasıl bir dağılım göstermektedir?
3. 3. Öğretmenlerimiz "Andımıza" ilişkin kullandıkları metaforlar "kendilerini nasıl tanımladıklarına" göre nasıl bir dağılım göstermektedir?

### 2. Yöntem

Bu araştırma nitel bir çalışmadır. Çalışmada, "andımız" kavramına ilişkin olarak kadrolu görev yapan branş öğretmenlerinin yazdıkları

çözümlemesi" yöntemiyle incelenmiştir.

#### *Araştırma Grubu*

Araştırmanın çalışma grubunu , 2013-2014 eğitim-öğretim yılında Antalya İli Konyaaltı İlçesi Gazi Mustafa Kemal İlköğretim okulunun branş öğretmenleri oluşturmaktadır (n=51).Araştırmaya katılan kadrolu branş öğretmenlerinin 33'ü kadın ( % 64 ) , 18'i erkek ( % 36 ) oluşmaktadır.Araştırma için bu grubun seçilmesinin nedeni , gruptaki öğretmenlerin alanları gereği "andımız" kavramına ilişkin yeterli bilgiye sahip ve bu kavramı daha yaratıcı metaforlarla açıklayacaklarının düşünülmesidir.

#### *Verilerin Toplanması*

Öğretmenlerimize öncelikle metaforun tanımı, içeriği ve kullanım alanları konusunda 30 dakikalık bir sunum yoluyla bilgilendirilmiş; bu sunum metaforlar yoluyla nasıl algılandığı kimi örnekler yoluyla anlatılmıştır. Daha sonra onlardan "andımız" kavramına ilişkin algılarını, bir yazı üzerinde yoğunlaşarak ve nedenini belirterek yazmaları istenmiştir. Araştırmaya katılan kadrolu branş öğretmenlerimizin "andımız" kavramına ilişkin algılarını ortaya çıkarmak için onlardan;

- "Andımızı canlı ya da cansız herhangi bir şeye benzetecek olsaydınız, bu ne olurdu? Neden?" sorusunu yanıtlamaları istenmiştir. Bu soruya verilen yanıtlar aşağıdaki gibidir; çünkü, " veya benzer; çünkü, "
- • "Andımız
  - • "Andımız

cümlelerinden birini tamamlamaları istenmiştir. Bu cümlelerin yer aldığı çalışma kâğıtları öğretmenlere dağıtılmış ve onlara 30 dakikalık süre verilmiştir. Öğretmenlerin düşüncelerini kâğıtlara aktarırken birbirlerinden ve araştırmacılarla gerekli önlemler alınmıştır. Bu araştırmanın temel veri kaynağını, branş öğretmenlerinin "andımız" kavramına ilişkin algılarını metaforlar bu yazılı kâğıtları oluşturmaktadır.

Yapılan alanyazın taramaları ile metafor çalışmalarında kullanılan yöntemler genellikle şöyledir: Asaman'ın (2013; Özet) Özel eğitimde öğretmen ve öğrencilerin birbirlerine yönelik metaforik algıları çalışmasında var olan durumu ortaya koymak amacıyla betimsel analiz kullanılmıştır. Araştırmada elde edilen verilerin toplanmasında ve analizinde nitel veri toplama teknikleri kullanılmıştır. Veriler içerik analizi tekniği ile analiz edilmiştir. Verilerin sınıflandırılmasında Lakoff ve Johnson (1980)'in Kavramsal Metafor Kuramından yararlanılmıştır. Çalışma sonucunda iştirak eden öğretmen ve öğrencilerden ve öğretmenlerinden metaforlar yoluyla algıların çıkarılabileceği bulgulanmıştır.İşitme ve görme engelli öğrencilerin ve öğretmenlerin "öğretmen", "öğrenci", "işitme/görme engelli öğrencilerin öğretmeni ve işitme/görme engelli öğrenci kavramları ile ilgili ürettikleri metaforların ve gerekçelerinin, engelsiz öğrenci ve öğretmenlere yönelik üretilen "öğretmen" ve "öğrenci" dilsel gerçekleşme verileriyle önemli farklılıklar gösterdiği gözlenmiştir.

Aydın ve Pehlivan(2009 ; Özet) Türkçe öğretmeni adaylarının "öğretmen" ve "öğrenci" kavramlarına ilişkin kullandıkları metaforlar ve bu metaforların öğretimi meslek edinecek olan Türkçe öğretmeni adaylarının "öğretmen" ve "öğrenci" kavramlarına ilişkin oluşturdıkları metaforları metaforları çeşitli kategoriler altında sınıflandırarak Türkçe öğretmeni adaylarının algılama biçimlerini ortaya koymaktır. Çalışmada veriler içerik analizi ile değerlendirilmiş, daha sonra baskın kategoriye sahip gruplara ki-kare testi uygulanmıştır. Çalışma sonucunda Türkçe öğretmeni adaylarının çoğunlukla öğretmeni bilgi kaynağı, öğrenciyi de bilgi alıcı olarak gördükleri şeklindedir. Bir diğer sonuç ise öğretmeni adaylarının bir kısmının öğretmeni üretici ve biçimlendirici; öğrenciyi de üretilen ve biçimlendirilen olarak görmesidir. Bulgular doğrultusunda Türkçe öğretmeni adaylarının geçmişten gelen yaşantılarına bağlı olarak aldıkları eğitimin onları modern eğitime nitelikte olmadığı söylenebilir.

#### *Verilerin Çözümlemesi ve Yorumlanması*

Bir araştırma üzerinde çok az çalışma yapılmış ve hakkında güçlü bir alanyazın bulunmayan bir konuya odaklanılmışsa, bulgulara ulaşmak (temalardan) hareket ederek bir yazım tarzı oluşturulmalıdır (Silman ve Şimşek, 2006). Bu çalışmanın konusuyla ilgili olarak herhangi bir güçlü bir alanyazın bulunmadığından "andımız" kavramına ilişkin ana kategoriler önceden belirlenmemiş; bu kategoriler, katılımcılardan elde edilen verilerle oluşturulmuştur. Mecazlar, araştırmacılar tarafından incelenmiş ve ortak özelliklere sahip olanlar aynı kategori altında toplanmıştır. Kuş (2006)'un belirttiği "Sınıflandırma" (Classification), "İltilendirme" (Linking), "Bağlantılar Kurma" (Connecting) gibi nitel verilerin analizinde dikkate alınmıştır.

### **3.Bulgular**

*Tablo 1. "Andımız" Kavramına İlişkin Geliştirilen Mecazlar*

Metaforun Kodu	Metaforun Adı	F	%
1.	10. Yıl Marşı	1	0,82
2.	Adam olmak	1	0,82

3.	Ağaç	4	3,30
4.	Aile	1	0,82
5.	Ajanda	1	0,82
6.	Akıl	1	0,82
7.	Alışkanlık	1	0,82
8.	Damanımızdaki kan	1	0,82
9.	Anne		3,30
10.	Ant	1	0,82
11.	Asker		1,65
12.	Asker yemini	1	0,82
13.	Aşk		2,47
14.	Ay	1	0,82
15.	Aynştıncı	1	0,82
16.	Bağlılık yemini	1	0,82
17.	Başucu kitabı	1	0,82
18.	Besmele	1	0,82
19.	Bir ağacın kökleri	1	0,82
20.	Coşku	1	0,82
21.	Çamaşır suyu	1	0,82
22.	Çember	1	0,82
23.	Çeşitli ezberler	1	0,82
24.	Çimento	1	0,82
25.	Çocuğun anneye verdiği söz	1	0,82
26.	Çocuk		3,30
27.	Dağın zirvesi	1	0,82
28.	Dayatma	1	0,82
29.	Dayatmacı Zihniyet	1	0,82
30.	Ders	1	0,82
31.	Destan	1	0,82
32.	Diş macunu	1	0,82
33.	Dondurma	1	0,82
34.	Dua		2,47
35.	Dünyanın en güzel şiiiri		1,65
36.	Eğitim-öğretim	1	0,82
37.	En güzel şeyler	1	0,82
38.	Fener	1	0,82
39.	Gece	1	0,82
40.	Gelecek		1,65
41.	Gelenek	1	0,82
42.	Gelişi güzel söylenen söz	1	0,82
43.	Gerçek duyguların ifadesi	1	0,82
44.	Gereksiz	1	0,82
45.	Gıda	1	0,82
46.	Giysi	1	0,82
47.	Gökkuşağı	4	3,30
48.	Güneş	3	2,47
49.	Hava	1	0,82
50.	Hayat	1	0,82
51.	Haykırış	1	0,82
52.	Her gün okunması gereken en önemli şey	1	0,82
53.	Her şey	1	0,82
54.	Herkese hitap eden bir eser	1	0,82
55.	Herkesin bilmesi gereken şeyler	1	0,82
56.	Hipokrat yemini	1	0,82
57.	İrkçılık	1	0,82
58.	Işık	3	2,47
59.	İlaç	1	0,82

60.	İnsan	1 0,82
61.	İstiklal Marşı	2 1,65
62.	İşkence	1 0,82
63.	Kale	1 0,82
64.	Kan	1 0,82
65.	Katı kuralları olan aile	1 0,82
66.	Kendine verilmiş yemin	1 0,82
67.	Kimin yazdığını bilmediğimiz şiir	1 0,82
68.	Kimliğimiz	3 2,47
69.	Kişinin kendisine ve Atasına verdiği söz	1 0,82
70.	Kitap	2 1,65
71.	Koşulsuz bir yemin	1 0,82
72.	Kuş	1 0,82
73.	Lokomotif	1 0,82
74.	Mecburiyet	1 0,82
75.	Milletin yemini	1 0,82
76.	Milli bir sembol	1 0,82
77.	Milli Kimliğimiz	1 0,82
78.	Milli yemin	1 0,82
79.	Motivasyon aracı	1 0,82
80.	Nakarat	1 0,82
81.	Namusumuz	1 0,82
82.	Narin bir çiçek	1 0,82
83.	Nefes	1 0,82
84.	Ninni	1 0,82
85.	Okul	1 0,82
86.	Öğretmen	1 0,82
87.	Öğüt	2 1,65
88.	Önemli bir değer	1 0,82
89.	Puzzle	1 0,82
90.	Rehber	2 1,65
91.	Sabah sporu	1 0,82
92.	Saçmalık	1 0,82
93.	Sevdiğimiz bir türkü	1 0,82
94.	Sevgi	2 1,65
95.	Sevgi dolu bir öğreti	1 0,82
96.	Sınıf ayrımı	1 0,82
97.	Sigara	1 0,82
98.	Soframızdaki çay	1 0,82
99.	Su	4 3,30
100.	Şarkı	1 0,82
101.	Şiir	4 3,30
102.	Tarih	2 1,65
103.	Tarihimize verilmiş söz	1 0,82
104.	Televizyon	1 0,82
105.	Toprak	2 1,65
106.	Tuz	1 0,82
107.	Türk tarihi	1 0,82
108.	Türkiye	1 0,82
109.	Türklük	1 0,82
110.	Türkü	2 1,65
111.	Umut	1 0,82
112.	Ümit	1 0,82
113.	Vatan sevdası	1 0,82
114.	Vatanımız	2 1,65
115.	Yaşam	1 0,82
116.	Yemin metni	1 0,82

117.	Yıldız	1 0,82
118.	Yol	1 0,82
119.	Yol haritası	1 0,82
120.	Zorla söylettirilen bir şarkı	1 0,82
121.	Zorunluluk	1 0,82

Tablo 1'e göre uygulamaya katılan öğretmenlerimiz "Andımız" kavramına ilişkin 121 ayrı mecaz üretmiştir. Söz konusu 121 mecazın 117'si öğretmen tarafından temsil edilmektedir. Geriye kalan mecazları temsil eden öğretmen sayıları ise 2 ile 4 arasında değişmektedir. Mecazların sayısı 2,37'dir. En çok tekrar eden ( $f: 4$ ) 6 mecaz vardır. Bunlar sırasıyla: ağaç ,anne , çocuk, gökkuşağı, su ve şiir'dir. Öğretmenlerimiz tarafından üretilen mecazların yönelik algılarının belirlenmeye çalışıldığı bu araştırmanın en önemli bulgularından biri, öğretmenlerin kullandıkları mecazların yakınlık olmasıdır.

*Tablo 2. Andımız "Kavramına İlişkin 10-20 Yılları Arasına Deneyimi Sahip Öğretmenlerce Üretilen Mecazlar*

Metaforun Kodu	Metaforun Adı	F %
1.	Ayrıştırıcı	1 3,44
2.	Bağlılık yemini	1 3,44
3.	Başucu kitabı	1 3,44
4.	Bir ağacın kökleri	1 3,44
5.	Coşku	1 3,44
6.	Dayatma	1 3,44
7.	Dayatmacı Zihniyet	1 3,44
8.	Dua	1 3,44
9.	En güzel şeyler	1 3,44
10.	Gelecek	1 3,44
11.	Gerçek duyguların ifadesi	1 3,44
12.	Gereksiz	1 3,44
13.	Her gün okunması gereken en önemli şey	1 3,44
14.	Her şey	1 3,44
15.	Herkesin bilmesi gereken şeyler	1 3,44
16.	Irkçılık	1 3,44
17.	İşkence	1 3,44
18.	Kimin yazdığını bilmediğimiz şiir	1 3,44
19.	Koşulsuz bir yemin	1 3,44
20.	Nakarat	1 3,44
21.	Narin bir çiçek	1 3,44
22.	Ninni	1 3,44
23.	Saçmalık	1 3,44
24.	Sevgi dolu bir öğreti	1 3,44
25.	Sınıf ayrımı	1 3,44
26.	Şiir	1 3,44
27.	Türk tarihi	1 3,44
28.	Türkü	1 3,44
29.	Zorunluluk	1 3,44

Bu kategoride her öğretmene kişi başı 2,23 tane mecaz düşmektedir. 1-10 arası deneyime sahip olan öğretmenlerin andımıza ilişkin ürettiği mecazların 9'u olumsuz diğerleri ise olumlu bir içeriği yansıtmaktadır.

*Tablo 3. Andımız "Kavramına İlişkin 10-20 Yılları Arasına Deneyimi Sahip Öğretmenlerce Üretilen Mecazlar*

Metaforun Kodu	Metaforun Adı	f	%
1.	10. Yıl Marşı	1	1,49
2.	Adam olmak	1	1,49
3.	Ağaç	1	1,49
4.	Aile	1	1,49
5.	Ajanda	1	1,49
6.	Akıl	1	1,49
7.	Alışkanlık	1	1,49
8.	Anne		6,15



9.	Asker	1	1,49
10.	Aşk		2,98
11.	Çamaşır suyu	1	1,49
12.	Çimento	1	1,49
13.	Çocukluk	1	1,49
14.	Çocuk		2,98
15.	Ders	1	1,49
16.	Destan	1	1,49
17.	Diş macunu	1	1,49
18.	Dondurma	1	1,49
19.	Dua		1 1,49
20.	Gece		1 1,49
21.	Gelenek		1 1,49
22.	Gıda		1 1,49
23.	Giysi		1 1,49
24.	Gökkuşağı		3 4,47
25.	Güneş		1 1,49
26.	Hava		1 1,49
27.	Işık		2 2,98
28.	İnsan		1 1,49
29.	Kan		1 1,49
30.	Kendine verilmiş yemin		1 1,49
31.	Kimliğimiz		2 2,98
32.	Kitap		2 2,98
33.	Mecburiyet		1 1,49
34.	Milletin yemini		1 1,49
35.	Milli bir sembol		1 1,49
36.	Milli Kimliğimiz		1 1,49
37.	Motivasyon aracı		1 1,49
38.	Namusumuz		1 1,49
39.	Okul		1 1,49
40.	Öğretmen		1 1,49
41.	Öğüt		1 1,49
42.	Önemli bir değer		1 1,49
43.	Puzzle		1 1,49
44.	Rehber		1 1,49
45.	Sabah sporu		1 1,49
46.	Sevgi		1 1,49
47.	Sigara		1 1,49
48.	Soframızdaki çay		1 1,49
49.	Su		2 2,98
50.	Şarkı		1 1,49
51.	Şiir		2 2,98
52.	Tarih		1 1,49
53.	Tarihimize verilmiş söz		1 1,49
54.	Televizyon		1 1,49
55.	Toprak		1 1,49
56.	Tuz		1 1,49
57.	Türkiye		1 1,49
58.	Türklük		1 1,49
59.	Türkü		2 2,98
60.	Umut		1 1,49
61.	Ümit		1 1,49
62.	Vatanımız		1 1,49
63.	Yaşam		1 1,49
64.	Yol		1 1,49
65.	Zorla söylettirilen bir şarkı		1 1,49

Katılımcı başına 3,42 tane mecaz üretmişlerdir. En çok tekrar eden  $f : 4$ ) 1 tane mecaz Anne'dir. 10-20 arası deneyime sahip olan öğretmen ürettiği toplam altmış beş metafordan 4'ü olumsuz diğerleri ise olumlu bir içeriği yansıtmaktadır. Bu kategorideki öğretmenler yaklaşmaktadır.

Tablo 4. *Andımız*'Kavramına İlişkin 20 ve Üzeri Yılları Arasına Deneyimi Sahip Öğretmenlerce Üretilen Mecazlar

Metaforun Kodu	Metaforun Adı	f	%
1.	Ağaç	3	6,38
2.	Damarımızdaki kan	1	2,12
3.	Ant	1	2,12
4.	Asker	1	2,12
5.	Asker yemini	1	2,12
6.	Aşk	1	2,12
7.	Ay	1	2,12
8.	Besmele	1	2,12
9.	Çember	1	2,12
10.	Çeşitli ezberler	1	2,12
11.	Çocuğun anneye verdiği söz	1	2,12
12.	Çocuk	1	2,12
13.	Dağın zirvesi	1	2,12
14.	Dua	1	2,12
15.	Dünyanın en güzel şiiiri	1	2,12
16.	Eğitim-öğretim	1	2,12
17.	Fener	1	2,12
18.	Gelecek	1	2,12
19.	Gelişi güzel söylenen söz	1	2,12
20.	Gökkuşağı	1	2,12
21.	Güneş		4,25
22.	Hayat	1	2,12
23.	Haykırış	1	2,12
24.	Herkese hitap eden bir eser	1	2,12
25.	Hipokrat yemini	1	2,12
26.	Işık	1	2,12
27.	İlaç	1	2,12
28.	İstiklal Marşı		4,25
29.	Kale	1	2,12
30.	Katı kuralları olan aile	1	2,12
31.	Kimliğimiz	1	2,12
32.	Kişinin kendisine ve Atasına verdiği söz	1	2,12
33.	Kuş	1	2,12
34.	Lokomotif	1	2,12
35.	Milli yemin	1	2,12
36.	Nefes	1	2,12
37.	Öğüt	1	2,12
38.	Rehber	1	2,12
39.	Sevgi	1	2,12
40.	Su	2	4,25
41.	Şiir	1	2,12
42.	Toprak	1	2,12
43.	Vatan sevdası	1	2,12
44.	Vatanımız	1	2,12
45.	Yemin metni	1	2,12
46.	Yıldız	1	2,12
47.	Yol haritası	1	2,12

Katılımcı başına 2,47 tane mecaz üretmişlerdir. En çok tekrar eden mecaz ağaç mecazıdır. 20 ve üzeri deneyime sahip olan öğretmen ürettiği toplam 47 metafordan hiçbirisi olumsuz bir içeriği yansıtmamaktadır.

Tablo 5. *Andımız*'Kavramına İlişkin Demokrat Öğretmenlerce Geliştirilen Mecazlar

	Metaforun Kodu	Metaforun Adı	f%
1.	10. Yıl Marşı		1 1,13
2.	Adam olmak		1 1,13
3.	Ağaç		2 2,27
4.	Alışkanlık		1 1,13
5.	Anne		3 3,40
6.	Asker		2 2,27
7.	Asker yemini		1 1,13
8.	Aşk		1 1,13
9.	Ayrıştırıcı		1 1,13
10.	Bağlılık yemini		1 1,13
11.	Başucu kitabı		1 1,13
12.	Besmele		1 1,13
13.	Çamaşır suyu		1 1,13
14.	Çember		1 1,13
15.	Çeşitli ezberler		1 1,13
16.	Çimento		1 1,13
17.	Çocuğun anneye verdiği söz		1 1,13
18.	Çocuk		3 3,40
19.	Dayatma		1 1,13
20.	Dayatmacı Zihniyet		1 1,13
21.	Ders		1 1,13
22.	Diş macunu		1 1,13
23.	Dondurma		1 1,13
24.	Dua		2 2,27
25.	Dünyanın en güzel şiiri		1 1,13
26.	Gece		1 1,13
27.	Gelecek		1 1,13
28.	Gelenek		1 1,13
29.	Gelişi güzel söylenen söz		1 1,13
30.	Gereksiz		1 1,13
31.	Gıda		1 1,13
32.	Gökkuşağı		2 2,27
33.	Güneş		2 2,27
34.	Hava		1 1,13
35.	Hayat		1 1,13
36.	Haykırış		1 1,13
37.	Herkese hitap eden bir eser		1 1,13
38.	Irkçılık		1 1,13
39.	Işık		2 2,27
40.	İlaç		1 1,13
41.	İstiklal Marşı		1 1,13
42.	Kan		1 1,13
43.	Katı kuralları olan aile		1 1,13
44.	Kendine verilmiş yemin		1 1,13
45.	Kimliğimiz		3 3,40
46.	Kişinin kendisine ve Atasına verdiği söz		1 1,13
47.	Kitap		1 1,13
48.	Koşulsuz bir yemin		1 1,13
49.	Kuş		1 1,13
50.	Lokomotif		1 1,13
51.	Mecburiyet		1 1,13
52.	Milletin yemini		1 1,13
53.	Milli Kimliğimiz		1 1,13
54.	Milli yemin		1 1,13

55.	Nakarat	1 1,13
56.	Namusumuz	1 1,13
57.	Nefes	1 1,13
58.	Ninni	1 1,13
59.	Okul	1 1,13
60.	Öğretmen	1 1,13
61.	Öğüt	1 1,13
62.	Önemli bir değer	1 1,13
63.	Rehber	1 1,13
64.	Sabah sporu	1 1,13
65.	Saçmalık	1 1,13
66.	Sevdiğimiz bir türkü	1 1,13
67.	Sevgi dolu bir öğreti	1 1,13
68.	Sınıf ayrımı	1 1,13
69.	Sigara	1 1,13
70.	Soframızdaki çay	1 1,13
71.	Su	3 3,40
72.	Şarkı	1 1,13
73.	Şiir	3 3,40
74.	Tarih	2 2,27
75.	Tarihimize verilmiş söz	1 1,13
76.	Televizyon	1 1,13
77.	Toprak	1 1,13
78.	Tuz	1 1,13
79.	Türk tarihi	1 1,13
80.	Türklük	1 1,13
81.	Türkü	1 1,13
82.	Ümit	1 1,13
83.	Yaşam	1 1,13
84.	Yemin metni	1 1,13
85.	Yıldız	1 1,13
86.	Yol	1 1,13
87.	Zorla söylettirilen bir şarkı	1 1,13
88.	Zorunluluk	1 1,13

Tablo 5'e göre öğretmenlerimiz %67'lik bir katılım sağlamışlardır. Katılımcı başına 2,58 tane mecaz üretmişlerdir. En çok tekrar eden (*f* : Bunlar ; anne , çocuk , kimliğimiz ,su , şiir'dir. Seksen sekiz mecazın içinde sekizi olumsuzdur.

Tablo 6. *Andımız*'Kavramına İlişkin Liberal Öğretmenlerce Geliştirilen Mecazlar

Metaforun Kodu	Metaforun Adı	<i>f</i>	%
1.	Ağaç	1	4,76
2.	Akıl	1	4,76
3.	Aşk	1	4,76
4.	Ay	1	4,76
5.	Çocuk	1	4,76
6.	Destan	1	4,76
7.	Eğitim-öğretim	1	4,76
8.	Fener	1	4,76
9.	Gelecek	1	4,76
10.	Gökkuşağı	1	4,76
11.	Güneş	1	4,76
12.	İnsan	1	4,76
13.	İşkence	1	4,76
14.	Kale	1	4,76
15.	Öğüt	1	4,76
16.	Rehber	1	4,76
17.	Su	1	4,76

18.	Şiir	1	4,76
19.	Toprak	1	4,76
20.	Vatan sevdası	1	4,76
21.	Yol haritası	1	4,76

Toplam yirmibir mecaz üretilmiştir. Bu mecazlardan hiçbirisi olumsuz bir içerik yansıtmamaktadır.

Author name / Procedia - Social and Behavioral Sciences 00 (2014) 000-000 Tablo 7. 'Andımız' Kavramına İlişkin Milliyetçi Öğretmenlerce Geliştirilen Mecazlar

Metaforun Kodu	Metaforun Adı	f	%
1.	Aile	1	3,84
2.	Anne	1	3,84
3.	Ant	1	3,84
4.	Aşk	1	3,84
5.	Coşku	1	3,84
6.	Dağın zirvesi	1	3,84
7.	En güzel şeyler	1	3,84
8.	Gerçek duyguların ifadesi	1	3,84
9.	Giysi	1	3,84
10.	Gökkuşağı	1	3,84
11.	Her gün okunması gereken en önemli şey	1	3,84
12.	Her şey	1	3,84
13.	Herkesin bilmesi gereken şeyler	1	3,84
14.	Işık	1	3,84
15.	İstiklal Marşı	1	3,84
16.	Kimin yazdığını bilmediğimiz şiir	1	3,84
17.	Kitap	1	3,84
18.	Milli bir sembol	1	3,84
19.	Motivasyon aracı	1	3,84
20.	Narin bir çiçek	1	3,84
21.	Puzzle	1	3,84
22.	Sevgi		7,69
23.	Türkiye	1	3,84
24.	Türkü	1	3,84
25.	Umut	1	3,84
26.	Vatanımız	1	3,84

Toplam yirmi altı mecaz üretilmiştir. Bu mecazlardan hiçbirisi olumsuz bir içerik yansıtmamaktadır.

Tablo 8. 'Andımız' Kavramına İlişkin Muhafazakar Öğretmenlerce Geliştirilen Mecazlar

Metaforun Kodu	Metaforun Adı	f	%
1.	Ağaç	1	12,50
2.	Ajanda	1	12,50
3.	Damarımızdaki kan	1	12,50
4.	Bir ağacın kökleri	1	12,50
5.	Dua	1	12,50
6.	Dünyanın en güzel şiiri	1	12,50
7.	Hipokrat yemini	1	12,50
8.	Vatanımız	1	12,50

Toplam sekiz mecaz üretilmiştir. Bu mecazlardan hiçbirisi olumsuz bir içerik yansıtmamaktadır.

#### 4. Sonuç

Bireyler, duygu, düş, düşünce, tasarı ve planlarını dile getirmede kullandıkları anadillerine ilişkin birtakım tutum ve düşünceleri de beraberinde getiren sorumlulukları içinde bulunan "Andımız"ı hem öğrenmek hem de öğretmek olan öğretmenlerimiz alanları gereği bu kavrama daha fazla önem beklenir. Bu açıdan bakıldığında öğretmenlerin "Andımız" kavramına ilişkin algılarını ortaya çıkarmak, onların bu kavramla ilgili olanı bilmek ve bunları irdelemek eğitimciler açısından büyük önem taşır. Bu araştırma, öğretmenlerin "Andımız" terimine ilişkin algılarını ortaya çıkarmak amacıyla yapılmıştır. Bu araştırmaya 51 öğretmen katılmıştır. Uygulamaya katılan öğretmenlerimiz "Andımız" kavramını mecaz üretmiştir. Söz konusu 121 tane mecazın yarısından fazlası tek bir öğretmen tarafından temsil edilmektedir. Geriye kalan mecazlar

sayıları ise 2 ile 4 arasında değişmektedir. Mecaz başına düşen öğretmen sayısı 2,37'dir. En çok tekrar eden f : 4) 6 tane mecaz vardır. Bunlar çocuk , gökkuşağı , su ve şiir'dir.

Seçilen okulun il merkezindeki merkez ilçe okulu olması ve okulunda ilçenin tam merkezinde olmasından dolayı öğretmenlerin deneyimleri olanlar (n= 38) araştırmaya katılan katılımcıların yarısından fazlasını kapsamaktadır. Çalışılan bölge Akdeniz Bölgesidir. Katılımcı öğretmenlerin çeşitliliği (n=19) göstermektedir. Bu koşullar altında katılımcılarca üretilen mecazların genellikle olumlu bir içerik taşıyor olması andımların canlı olduğuna işaret etmektedir. Diğer yandan daha deneyimli öğretmenlerden daha az deneyimli öğretmenlere doğru geldikçe andımların olumsuz bir bakış açısı içermesi de yeni kuşakların nereye gittiğine ilişkin önemli bir ipucu sunmaktadır. Yine kendisine demo öğretmenlerin ürettiği metaforlardan bazılarının olumsuz bir bakış açısını yansıtmaması buna karşın milliyetçi, muhafazakar ve liberal öğretmenlerin ürettikleri metaforların ise tamamen olumlu bir bakış açısını içermesi ise ayrıca dikkat çekicidir.

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# Çeşitli Değişkenler Açısından Lise Öğrencilerinin Zorbalık Davranışları

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**Özet:** Sakarya'nın (Türkiye) Hendek ilçesinde öğrenim gören lise öğrencileri ile gerçekleştirilen bu çalışmada ortaöğretim kurumlarındaki öğrencilerinin akran zorbalığının çeşitli değişkenlere ilişkin algılarını saptamak (Okul türü ve zorbalık türü) ve yapılan zorbalığın cinsiyete göre değişip değişmediğini belirlemek amaçlanmıştır. Tarama modeline göre gerçekleştiren bu çalışmanın evrenini Hendek ilçesinde öğrenim gören lise öğrencileri oluşturmaktadır. Araştırmanın örneklemi ise amaçlı örnekleme yöntemi ile belirlenmiş, Hendek ilçesinde öğrenim görmekte olan 202 öğrenciden oluşmaktadır. Toplanan veriler SPSS'e aktarılmış ve ortalama, standart sapma, bağıl değişim katsayısı, t-testi, tek yönlü varyans analizi ve çoklu karşılaştırma 'Tukey' testi istatistiksel işlemleri yapılmıştır. Analiz sonuçlarına göre, okul türü ve cinsiyet ile akran zorbalığı yapma ya da maruz kalma arasında anlamlı bir ilişki kurulmuştur. Yapılan ve maruz kalınan zorbalık türleri, cinsiyet ile okul türü arasında anlamlı bir fark bulunmuştur.

**Anahtar Kelimeler:** Zorbalık, Akran Zorbalığı, Cinsiyet, Okul Türü

**Abstract:** Sakarya ditch in the district studying with high school students who carried out this study secondary education students in their bullying of the various variables related to the perception of Fix ( school type and bullying type), and the bullying by gender has changed, we aimed to determine . Scanning is done according to the model of the universe of this study consisted of high school students studying in the ditch district . The research sample identified by the purposive sampling method , the ditch in the district consists of 202 students who are studying . Collected data were transferred to SPSS and mean , standard deviation, coefficient of variation relative , t- test, one- way analysis of variance and multiple comparisons ' Tukey's test was carried out statistical operations . According to the results , and gender and type of school bullying or making significant relationship between exposure has been established. And exposure to the types of bullying , a significant difference between gender and type of school were found .

**Keywords :** Bullying , Gender , Type of School

## Giriş

Yaşamımızın çeşitli dönemlerinde fiziksel, sözel ve psikolojik saldırılara maruz kaldığımız olmuştur. Zorbalık olarak ifade edilebilecek olan bu saldırılar aile, mahalle ve okul içerisinde tanıdığımız veya tanımadığımız kişiler tarafından gerçekleştirildiği gibi ilk kez bulunduğumuz ortamlarda ve ilk kez karşılaştığımız kişiler tarafından da gerçekleştirilmiş olabilir. Zorbalığa maruz kalanlar, sosyal, psikolojik ve hatta fiziksel olarak bundan etkilenebilirler. Kurbanın korkmasına, acı çekmesine neden olan zorbalık, taraflar arasında güç dengesizliğinin olduğu, güçlü olanın kendinden güçsüz olana baskı yaptığı, kurbanın herhangi bir kışkırtmada bulunmadığı ve aynı çocuklar arasında tekrarlı olarak yapılan fiziksel, sözel ve psikolojik saldırıları içermektedir (Nansel ve diğ., 2001).

Besag (1995) zorbalığı, bireyin kendisinden daha güçsüz bireye kasıtlı ve sürekli olarak uyguladığı ve maruz kalınan bireyde psikolojik ve fizyolojik sorunlara yol açan olumsuz bir eylem; Roland (1989), bir birey veya grup tarafından, kendisini koruyamayacak durumda olan kişiye karşı yapılan, fiziksel veya psikolojik sonuçları olan ve süreklilik arz eden bir şiddet türü olarak tanımlamaktadır. Pişkin (2002) ise zorbalığı; "Bir veya birden çok öğrencinin, kendilerinden daha güçsüz öğrencileri, kasıtlı ve sürekli olarak rahatsız etmesiyle sonuçlanan ve kurbanın kendisini koruyamayacak durumda olduğu bir saldırganlık türü" olarak tanımlamaktadır. Olweus (1994), özellikle okullarda uygulanan, okul zorbalığını "Bir çocuğa bir veya daha fazla öğrenci tarafından kasıtlı olarak sürekli saldırgan davranışların uygulanması ve çocuğun bu durum karşısında korumasız kalması" olarak tanımlamaktadır.

Olweus (1993) zorbalığı, sözel, fiziksel ataklar şeklindeki direkt zorbalık, sosyal dışlama şeklinde yapılan dolaylı zorbalık veya ilişkisel zorbalık olmak üzere ikiye ayırır. Sözel zorbalık korkutma, arkadaşları arasında lakap takma, dalga geçme, rahatsız edici telefon konuşmaları yapma, iftira atacak şekilde dedikodu çıkarma şeklindeki davranışları içerir. Fiziksel zorbalık, karşıdakine doğrudan canını acıtacak şekilde zarar verme davranışlarını içerir. Karşıdakine tokat atma, tekme atma, kişinin eşyalarına zarar verme şeklinde görülür. İlişkisel zorbalık daha çok kişiyi dışlayan davranışlar şeklindedir. Arkadaş grubu içerisinde istenmediğine yönelik tavır veya sözler sarf etmek, gülmek ya da vücut dilini düşmanca kullanmak kişiyi zorbaca davranışa maruz bırakır (Ayaş, 2008; Ayaş ve Pişkin 2007; Eşkisü, 2009).

Zorba öğrenciler, sürekli bir biçimde kendilerini güçlü gösterme ve diğer öğrencileri kontrol etme gereksinimi duyan zorbalığı başlatarak sürekli tekrarlayan kişilerdir. Zorba öğrenciler, mağdur durumundaki kişilere acı çektirmekten ve onlara zarar vermekten zevk almakta, mağdurlara yönelik olarak hemen hemen hiç

empati kuramayan kişilerdir. Zorbalar, sadece akranlarına değil, yetişkinlere karşı da olumsuz davranışlar sergileyen, anti-sosyal ve okul kurallarına uymama eğilimindeki kişilerdir (Banks,1997). Bu kişiler, okullarda zorba davranışlarda bulununca çevresi tarafından popüler olacağına inanırlar. Okullarda gözlenen zorbalık, eğitim kalitesinin düşmesine neden olduğu için eğitim ortamlarında önemli bir sorun haline gelmiştir. Okullarda alınabilecek önlemler kişinin hem okul döneminde yeterliliğinin artmasında hem de yetişkinlik döneminde kalıcı hasarlar bırakamamasına yardımcı olur (Tura, 2008).

Zorbalığa ilişkin araştırmalar incelendiğinde ilk olarak 1970’lerde Olweus (1978) tarafından bu alanda çalışmaların başlatıldığı görülmektedir. Olweus, İskandinav ülkelerinde öğrenci, öğretmen ve velileri de içine alan geniş kapsamlı çalışmaları başlatmış ve okul zorbalığı konusunda yapılan çalışmalar giderek artan bir önem kazanmıştır. Olweus’un öncülüğünün ardında dünyada ve ülkemizde bu alanda bir çok çalışma gerçekleştirilmiştir.

Ayaş ve Pişkin (2011), lise öğrencileri arasında zorbalık olaylarının cinsiyet, sınıf düzeyi ve okul türü değişkenine göre inceledikleri araştırmalarında endüstri meslek lisesi öğrencilerin, genel, özel ve Anadolu lisesi öğrencileri ile karşılaştırıldığında kurban olma düzeylerinin, özel lise öğrencilerinin de zorba olma düzeylerinin anlamlı bir şekilde daha yüksek olduğunu belirlemiştir. Aynı araştırmada Ayaş ve Pişkin kızların sözel zorbalığa erkeklerden daha fazla maruz kaldıklarını, erkeklerin ise diğer bütün alt boyutlarda kızlara oranla daha fazla zorbalığa uğradığı sonucuna ulaşmıştır. (Pişkin (2002) tarafından Ankara’da 1154 öğrenciye yapılan araştırmada erkeklerde zorba oranının kızlarda ise kurban olma oranının daha fazla olduğu bulunmuştur. Ayaş ve Pişkin (2005), genel, endüstri meslek ve kız meslek lisesi öğrencileri ile yaptıkları bir araştırmada endüstri meslek lisesi öğrencilerinde görülen kurban olma oranının kız meslek lisesi ve genel liselerde öğrenim gören öğrenciler ile karşılaştırıldığında daha fazla olduğunu belirlemiştir.

Genç ve Aksu (2010) genel lise öğrencilerinin kurban-zorba olma davranışlarını çeşitli değişkenler açısından inceledikleri araştırmalarında erkek öğrencilerin kız öğrencilere oranla daha fazla zorba ve kurban oldukları sonucuna ulaşmıştır. Özen (2006), akran zorbalığının cinsiyet ve yaş ile olan ilişkisini 6, 7, 8 ve 10 sınıfta öğrenim gören 805 öğrencileri üzerinde incelemiş ve erkeklerin kızlara oranla daha fazla terör ve açık saldırı boyutunda zorbalığa maruz kaldıklarını belirlemiştir. Pekel-Uludağlı ve Uçanok (2005), 5 ve 6. sınıfa devam eden öğrenciler üzerinde gerçekleştirmiş olduğu çalışmada kızların daha çok alay edilme ve ilişkisel saldırılara maruz kaldığını, erkek öğrencilerin ise hem zorbalığa uğrama hem de zorba davranışlar gösterme oranının kızlardan daha yüksek olduğunu belirlemiştir. Alikeşifoğlu, Erginoz, Ercan, Uysal, Kaymak ve İter (2004), 9-11. sınıfta öğrenim gören öğrenciler üzerinde gerçekleştirmiş oldukları çalışmada erkeklerin kızlara oranla daha çok fiziksel kavgaya katıldıklarını, ilişkisel şiddetin ise yaygın olarak görülmediği sonucuna ulaşmışlardır. Kabil (2010) ise yapmış olduğu araştırmada sınıflardaki öğrenci sayısının madur/zorba olma durumunu etkilediğini belirtmiştir. Kabil’in araştırmasına göre sınıflardaki öğrenci sayısı arttıkça zorba davranışların görülme oranı da artmaktadır. Kepenekçi ve Çinkır (2001)’in lise öğrencileri üzerinde yürüttükleri çalışmada; öğrencilerin % 44’ünün sözel, % 30’nun fiziksel, % 18’nin duygusal ve % 9’unun da cinsel zorbalığa uğradıkları belirlenmiştir.

### *1.1. Araştırmanın Amacı*

Bu araştırma, ortaöğretim kurumlarında öğrenim gören öğrencilerinin maruz kaldıkları akran zorbalığı türlerini belirlemek ve amacı ile gerçekleştirilmiştir. Bu amaca ulaşmak için aşağıdaki alt problemlere cevap aranacaktır:

1. Ortaöğretim kurumlarında öğrenim gören öğrenciler hangi tür akran zorbalığına maruz kalmaktadır?
2. Ortaöğretim kurumlarında öğretim gören öğrencilerin maruz kaldıkları akran zorbalığı:
  - Cinsiyete göre farklılık göstermekte midir?
  - Öğrenim gördükleri okul türlerine göre farklılık göstermekte midir?

### *1.2. Araştırmanın Önemi*

Zorbalık, kişilerin hayatı boyunca karşılaşılabileceği iletişim bozukluklarından kaynaklanan bir sorundur. Farklı ailelerden gelen farklı karakterli öğrenci gruplarındaki kişilerin, bir arada bulundukları ortamlarda artış gösterebilen davranış problemleridir. Hem zorba, hem kurban hem de gözlemciler açısından zor sonuçlar doğurabilecek önemli bir sorundur. Zorbalığa maruz kalma, öğrencilerinin yetişkinlik çağlarında da zor dönemler yaşamasına sebebiyet verebilir (Özkal, 2011). Bu nedenle ortaöğretim kurumlarına devam eden öğrencilerin sağlıklı bir yetişkin olabilmesi için, sağlıklı bir okul ortamında eğitim görmesi oldukça önemlidir. Araştırma, orta öğretim kurumlarında öğrenim gören öğrencilerin zorba davranışlara maruz kalıp kalmadıklarını ortaya koyacak olması açısından önemli görülmektedir. Ayrıca araştırma sonuçları öğrencilerin maruz kaldıkları



zorba davranışların neler olduğunu ortaya koymak sureti ile eğitimcilerin bu konuda önlem almalarına yol gösteren bir özelliğe de sahiptir.

### 1.3. Sınırlılıklar

Araştırma 2013-2014 eğitim-öğretim yılında Sakarya ili Hendek ilçesindeki ortaöğretim kurumlarına devam eden öğrencilerle ve bu öğrencilerin “Akran Zorbalığı Tanı Ölçeği”nden aldıkları puanlarla sınırlıdır.

## 2. Yöntem

### 2.1.1. Araştırmanın modeli

Araştırmada “genel tarama modelleri” arasında yer alan ilişkisel tarama modeli kullanılmıştır. Genel tarama yöntemi, çok sayıda elemandan oluşan bir evrende evren hakkında genel bir yargıya varmak amacıyla evrenin tümü veya alınacak bir grup, örnek ya da örneklem üzerinde yapılan taramalar genel tarama modelidir (Karasar, 2004).

### 2.2. Araştırmanın evren ve örneklemi

Araştırmanın evreni Sakarya ilinin Hendek ilçesindeki (Türkiye) ortaöğretim kurumlarında öğrenim gören toplam 3810 öğrenciden oluşmaktadır. Örneklemi ise üç okulda öğrenim gören toplam 202 öğrenciden oluşmaktadır. Örneklem, çalışmanın konusuna paralel bir şekilde “amaçlı örnekleme” modeline göre belirlenmiştir. Amaçlı örnekleme yönteminde, örnekleme dâhil edilecek birimler araştırmanın amacına uygun olarak araştırmacın kendi yargılarına göre belirlenir (Kaptan, 1995). Örneklem belirlenirken, bir takım ölçütler belirlenmiş ve bu ölçütlere göre yansız seçim yapılarak üç orta öğretim kurumu örnekleme alınmıştır. Bu üç orta öğretim kurumundan, Hendek Anadolu Lisesi’nden 94, Hendek Endüstri Meslek Lisesi’nden 58, Hendek Kız Meslek Lisesi’nden 50 öğrenci olmak üzere toplam 202 öğrenci örnekleme dâhil edilmiştir. Örnekleme ait bilgiler Tablo 1’de verilmiştir.

Tablo 1: Okullara göre örneklemede yer alan öğrenci sayıları

Okullar	Kız	Erkek	Toplam
Hendek Anadolu Lisesi	50	44	94
Hendek Endüstri Meslek Lisesi	-	58	58
Hendek Kız Meslek Lisesi	50	-	50
Toplam			202

### 2.3. Veri toplama araçları ve verilerin toplanması

Araştırmada Genç (2007) tarafından geliştirilen “Akran Zorbalığı Tanı Ölçeği” kullanılmıştır. Ölçeğin geçerlik çalışmalarında ilk aşama olarak ölçme aracının uygulanması sonucu KMO değeri 0.911, Barlett Testi anlamlılık değeri 0.000 olarak elde edilmiştir. Anketteki 33 madde, 6 faktör altında toplanmaktadır. Birinci faktördeki maddeler “Saldırı Aleti Kullanmak veya Tehditle Zorbalık” ile ilgili maddelerdir. İkinci faktördeki maddelerde sözel zorbalığa ilişkin sorulara yer verilmektedir. Bu faktöre “Sözel Zorbalık” adı verilmiştir. Üçüncü faktörde toplanan sorular ise internet, cep telefonu aracılığı ile yapılan zorbalık soruları ile cinsel içerikli çeşitli mesajlar içeren doğrudan veya dolaylı zorbalığa ilişkin soruları içermektedir. Bu faktöre de “Sanal Zorbalık” adı verilmiştir. Dördüncü faktördeki sorular öğrenciler arasında yaygın olan fiziksel zorbalığı ilişkin sorulardan oluşmaktadır. Bu boyuta da “Basit Fiziksel Zorbalık” adı verilmiştir. Beşinci faktörde ise kişiler arasında oluşabilecek psikolojik zorbalıkla ilgili maddeler yer almaktadır. Bu faktördeki maddeler “Duygusal Zorbalık” olarak adlandırılmıştır. Altıncı ve en sonuncu faktörde ise basit olmayan fiziksel zorbalığa yönelik maddelerden oluşmaktadır. Bu boyuta da “Ağır Fiziksel Zorbalık” adı verilmiştir. Beşli Likert’e göre hazırlanan ölçekte alınan puanların ortalaması 1-5 aralığındadır. Buna göre ortalama beşe doğru yaklaştıkça öğrencilerin maruz kaldığı zorba davranışları artmaktadır. Veriler, gerekli izinler alındıktan sonra okullarda görevli rehber öğretmenlerin eşliğinde araştırmacılar tarafından toplanmıştır.

## 2.4. Verilerin Analizi

Anketler toplandıktan sonra incelenerek 202 anketin tamamı geçerli bulunmuş ve veriler “SPSS 15” bilgisayar programına aktarılmıştır. Bağımsız değişkenlere ilişkin verilerin frekans dağılımları alınmış, altı zorbalık alt boyutunu oluşturan her bir zorbalık davranışının öğrenciler tarafından maruz kalma düzeylerini saptamak amacı ile frekans, yüzde, ortalama ve standart sapmasını içeren betimsel istatistik işlemleri gerçekleştirilmiştir. Cinsiyet değişkenine ilişkin olarak iki bağımsız grubun ortalamalarının karşılaştırılmasında kullanılan “bağımsız gruplar için T-testi”; okul türü değişkenine ilişkin olarak ikiden fazla grupların ortalamalarını karşılaştırmak için kullanılan tek yönlü varyans analizi (ONE-WAY ANOVA) istatistiksel işlemi gerçekleştirilmiştir. Tek yönlü varyans analizi sonuçlarına göre anlamlı bir ilişki belirlenen alt boyutlara ilişkin çoklu karşılaştırma “Tukey” testi kullanılmıştır. Ortalamalar arasındaki farklılıklar belirlenirken tüm istatistiksel işlemlerde “ $p<0.05$ ” anlamlılık düzeyi dikkate alınmıştır.

## 3. Bulgular

### 3.1. Birinci alt probleme ait bulgular

Tablo 2: Karşılaşılan zorbalık türlerine ait betimsel istatistikler

	N	$\bar{X}$	sd	V%
Saldırı Aleti Kullanmak veya Tehditte Zorbalık	202	1,046	,210	21
Sözel Zorbalık	201	1,952	,685	35
Sanal Zorbalık	202	1,537	,551	36
Basit Fiziksel Zorbalık	201	1,712	,835	49
Duygusal Zorbalık	201	1,292	,673	52
Ağır Fiziksel Zorbalık	199	1,311	,567	43
Genel	175	1,446	,408	28.2

Lise öğrencilerinin akran zorbalığına ilişkin genel sonuçlar Tablo 2 ‘de verilmiştir. 202 öğrenciden elde edilen sonuçlara göre genel anlamda zorbalığa maruz kalmaya ilişkin ortalama ( $\bar{X}$ ) “1,446”, standart sapma (ss) “0,40786” ve bağıl değişim katsayısı (V%) “28.2” olarak elde edilmiştir. Bağıl değişim katsayısının %25’ten büyük olduğu için dağılım normal bir dağılım göstermemektedir. Zorbalığa maruz kalmaya ilişkin öğrencilerin görüşleri arasında homojen bir dağılımın olmadığı belirlenmiştir. Öğrencilerin en çok maruz kalınandan en az maruz kalınana doğru zorbalık türleri sıralamasının (1) sözel zorbalık ( $\bar{X}=1,952$ ), (2) Basit fiziksel zorbalık ( $\bar{X}=1,712$ ), (3) sanal zorbalık ( $\bar{X}=1,537$ ), (4) ağır fiziksel zorbalık ( $\bar{X}=1,311$ ), (5) duygusal zorbalık ( $\bar{X}=1,292$ ) ve (6) Saldırı Aleti Kullanmak veya Tehditte Zorbalık şeklinde gerçekleştiği belirlenmiştir.

### 3.2. İkinci Alt Probleme Ait Bulgular

#### 3.2.1. Cinsiyet Göre

Tablo 3. T-Testi Sonuçları

Değişkenler		N	$\bar{X}$	ss.	t	df	P
Saldırı Aleti Kullanmak veya Tehditte Zorbalık	kız	97	1,033	,089	,817	200	,415
	erkek	105	1,057	,278			
Sözel Zorbalık	kız	96	1,892	,731	1,187	199	,237
	erkek	105	2,006	,640			
Sanal Zorbalık	Kız	97	1,583	,519	1,120	200	,264
	erkek	105	1,496	,579			
Basit Fiziksel Zorbalık	kız	96	1,674	,785	,624	199	,533
	erkek	105	1,748	,880			
Duygusal Zorbalık	kız	96	1,346	,768	1,098	199	,274
	erkek	105	1,242	,572			
Ağır Fiziksel Zorbalık	Kız	95	1,095	,276	5,520	197	,000
	erkek	104	1,509	,682			

Genel	kız	85	1,416	,386	-,925	173	,356
	erkek	90	1,473	,427			

Tablo 3'te görüldüğü gibi ortaöğretim kurumlarında öğrenim gören öğrencilerin genel olarak zorbalığa maruz kalmalarının cinsiyete göre farklılık göstermediği belirlenmiştir. Elde edilen bu bulgu, Ayaş ve Pişkin (2011), Pişkin ve Ayaş (2005), Malkoç ve Ceylan (2010), Şahin ve Sarı (2010), Genç ve Aksu (2010) ve Hilmioğlu (2009)'un araştırma bulguları ile paralellik göstermemektedir. Bu araştırmacıların elde ettikleri bulgulara göre erkekler kızlara göre daha fazla zorbalığa maruz kalmaktadır. Aynı tablodan maruz kaldıkları akran zorbalığı türü cinsiyet değişkenine göre incelendiğinde “saldırı aleti kullanmak veya tehditle zorbalık”, “sözel zorbalık”, “sanal ve cinsel zorbalık”, “basit fiziksel zorbalık” ve “duygusal zorbalık” türlerinde cinsiyete göre anlamlı fark bulunamamıştır. “Ağır fiziksel zorbalık”ta ise erkek ve kız öğrenciler arasında anlamlı fark bulunmuştur. Bu bulguya göre erkek öğrencilerin kız öğrencilere göre daha fazla ağır fiziksel zorbalığa uğradıkları söylenebilir. Elde edilen bu bulgu Özen'in (2006), Ayaş ve Pişkin (2011), Alikashişoğlu ve diğerlerinin (2004) yapmış olduğu çalışmaların bulguları ile paralellik göstermektedir. Özen, çalışmada erkeklerin kızlara oranlar daha fazla terör ve açık saldırılar boyutunda zorbalığa maruz kaldıkları bulgusuna ulaşmıştır. Alikashişoğlu ve diğerleri ise erkeklerin kızlara oranla daha fazla fiziksel kavgalara katıldıklarını belirlemiştir.

### 3.2.2. Okul Türüne Göre

Tablo 4: Okul türlerine göre Tek Yönlü Varyans analizi (One Way ANOVA) Sonuçları

Değişkenler		Kareler	Sd	Kareler	F	P
Saldırı Aleti Kullanmak veya Tehditte Zorbalık	Gruplar arası	,138	2	,069	1,577	,209
	Grup içi	8,705	199	,044		
	Toplam	8,843	201			
Sözel Zorbalık	Gruplar arası	,143	2	,071	,151	,860
	Grup içi	93,794	198	,474		
	Toplam	93,937	200			
Sanal Zorbalık	Gruplar arası	4,054	2	2,027	7,073	,001
	Grup içi	57,032	199	,287		
	Toplam	61,086	201			
Basit Fiziksel Zorbalık	Gruplar arası	3,014	2	1,507	2,189	,115
	Grup içi	136,340	198	,689		
	Toplam	139,354	200			
Duygusal Zorbalık	Gruplar arası	3,927	2	1,963	4,482	,012
	Grup içi	86,728	198	,438		
	Toplam	90,655	200			
Ağır Fiziksel Zorbalık	Gruplar arası	3,905	2	1,953	6,416	,002
	Grup içi	59,643	196	,304		
	Toplam	63,548	198			
GENEL	Gruplar arası	,674	2	,337	2,049	,132
	Grup içi	28,271	172	,164		
	Toplam	28,945	174			

Tablo 4 incelendiğinde genel olarak öğrencilerin öğrenim gördükleri okul türlerine (Anadolu Lisesi, Kız meslek Lisesi, Endüstri Meslek Lisesi) göre zorba/madur olma durumları arasında anlamlı bir farkın bulunmadığı belirlenmiştir. Elde edilen bu bulgu Ayaş ve Pişkin'in (2005) yapmış oldukları araştırma ile farklılık göstermektedir. Ayaş ve Pişkin, yapmış oldukları çalışmada Endüstri meslek lisesi öğrencisinin Kız meslek lisesi ve genel lise öğrencilerin göre daha fazla zorbalığa uğradıklarını veya zorba davranışlar sergilediklerini belirlemişlerdir. Aynı tablodan öğrencilerin devam ettikleri orta öğretim kurum türüne göre maruz kaldıkları akran zorbalığı çeşidine etkisine ilişkin tek yönlü varyans analizi sonuçları incelendiğinde “saldırı aleti kullanmak ve tehditle zorbalık”, “sözel zorbalık” ve “basit fiziksel zorbalık” arasında anlamlı fark bulunamamıştır. “Sanal zorbalık”, “duygusal zorbalık”, “ağır fiziksel zorbalık” arasında ise okul türlerine göre anlamlı bir fark olduğu belirlenmiştir. Bu farkların hangi okul türleri arasında olduğunu belirlemek amacıyla yapılan çoklu karşılaştırma testinin sonuçları tablo 5, tablo 6 ve tablo 7'de verilmiştir.

Tablo 5: Okul Türlerine göre Sanal Zorbalığa ilişkin Çoklu karşılaştırma (TUKEY) sonuçları

Okul Türleri	N	$\bar{X}$	ss	Okul Türleri	Ortalama Farkı	Standart Hata	P
Anadolu Lisesi	94	1,6507	,65744	Endüstri Meslek L.	,07338	,09371	,714
				Kız Meslek Lisesi	,33174(*)	,08939	,001
Endüstri Meslek L.	50	1,5773	,53742	Anadolu Lisesi	-,07338	,09371	,714
				Kız Meslek Lisesi	,25837(*)	,10331	,035
Kız Meslek Lisesi	58	1,3190	,21694	Anadolu Lisesi	-,33174(*)	,08939	,001
				Endüstri Meslek L.	-,25837(*)	,10331	,035
Toplam	202	1,5373	,55128				

Öğrencilerin devam ettikleri ortaöğretim türlerine göre akran zorbalığına maruz kalmaya ilişkin çoklu karşılaştırma (Tukey) sonuçları incelendiğinde sanal zorbalık, duygusal zorbalık ve ağır fiziksel zorbalık ile arasında bir fark olduğu belirlenmiştir. Anadolu lisesi öğrencileri ile kız meslek lisesi öğrencileri ve endüstri meslek lisesi öğrencileri sanal zorbalık açısından karşılaştırıldığında sanal zorbalığı en fazla Anadolu lisesi öğrencilerinin kullandığı ve sonrasında sırasıyla endüstri meslek lisesi ve kız meslek lisesinin sanal zorbalığı kullandıkları bulgusuna ulaşılmıştır. Sanal zorbalığa maruz kalma açısından bakıldığında da yine en fazla Anadolu lisesi öğrencilerinin, sonra sırasıyla endüstri meslek lisesi ve kız meslek lisesi öğrencilerinin sanal zorbalığa maruz kaldıkları belirlenmiştir.

Tablo 6: Okul Türlerine göre Duygusal Zorbalığa ilişkin Çoklu karşılaştırma (TUKEY) sonuçları

Okul Türleri	N	$\bar{X}$	ss	Okul Türleri	Ortalama Farkı	Standart Hata	P
Anadolu Lisesi	93	1,4050	,72903	Endüstri Meslek L.	,07502	,11606	,795
				Kız Meslek Lisesi	,32743(*)	,11073	,010
Endüstri Meslek L.	50	1,3300	,84582	Anadolu Lisesi	-,07502	,11606	,795
				Kız Meslek Lisesi	,25241	,12772	,121
Kız Meslek Lisesi	58	1,0776	,22068	Anadolu Lisesi	-,32743(*)	,11073	,010
				Endüstri Meslek L.	-,25241	,12772	,121
Toplam	201	1,2919	,67326				

p<0,05

Anadolu lisesi öğrencileri ile kız meslek lisesi öğrencileri ve endüstri meslek lisesi öğrencileri duygusal zorbalık açısından karşılaştırıldığında Anadolu lisesi ile kız meslek lisesi öğrencileri arasında anlamlı fark bulunmuştur (Bkz. Tablo 6). Endüstri meslek lisesi öğrencileri ile ise anlamlı fark bulunmamıştır. Elde edilen bu bulgulara göre Anadolu Lisesi öğrencileri, kız meslek lisesi öğrencilerine göre daha fazla duygusal zorbalığa maruz kalmakta ve uygulamaktadır.

Anadolu lisesi öğrencileri ile kız meslek lisesi öğrencileri ve endüstri meslek lisesi öğrencileri sanal zorbalık açısından karşılaştırıldığında duygusal zorbalığı en fazla Anadolu lisesi öğrencilerin kullandığı ve sonrasında sırasıyla kız meslek lisesi ve endüstri meslek lisesinin duygusal zorbalığı kullandıkları bulgusuna ulaşılmıştır. Duygusal zorbalığa maruz kalma açısından bakıldığında da yine en fazla Anadolu lisesi öğrencilerinin sonra sırasıyla kız meslek lisesi ve endüstri meslek lisesi öğrencilerinin duygusal zorbalığa maruz kaldıkları belirlenmiştir.

Tablo 7: Okul Türlerine göre Ağır Fiziksel Zorbalığa ilişkin Çoklu karşılaştırma (TUKEY) sonuçları

Okul Türleri	N	$\bar{X}$	ss	Okul Türleri	Ortalama Farkı	Standart Hata	P
Anadolu Lisesi	92	1,3850	,71674	Endüstri Meslek L.	,31864(*)	,09756	,004
				Kız Meslek Lisesi	-,01590	,09249	,984
Endüstri Meslek L.	49	1,0663	,26406	Anadolu Lisesi	-,31864(*)	,09756	,004
				Kız Meslek Lisesi	-,33454(*)	,10704	,006
Kız Meslek Lisesi	58	1,4009	,40928	Anadolu Lisesi	,01590	,09249	,984
				Endüstri Meslek L.	,33454(*)	,10704	,006
Toplam	199	1,3111	,56652				

Tablo 7’de görüldüğü üzere Anadolu Lisesi ile endüstri ve kız meslek liseleri arasındaki ağır fiziksel zorbalık oranı karşılaştırıldığında anlamlı bir fark bulunmuştur. Bu bulguya göre Anadolu Lisesi, endüstri meslek lisesine göre daha fazla ağır fiziksel zorbalığa başvurmakta ve maruz kalmaktadır. Kız meslek lisesi ise endüstri meslek lisesine göre daha fazla ağır fiziksel zorbalık uygulamakta ve maruz kalmaktadır. Anadolu lisesi öğrencileri ile kız meslek lisesi öğrencileri ve endüstri meslek lisesi öğrencileri ağır fiziksel zorbalık açısından karşılaştırıldığında ağır fiziksel zorbalığı en fazla Anadolu lisesi öğrencilerin kullandığı ve sonrasında sırasıyla kız meslek lisesi ve endüstri meslek lisesinin ağır fiziksel zorbalığı kullandıkları bulgusuna ulaşılmıştır. Ağır fiziksel zorbalığa maruz kalma açısından bakıldığında da yine en fazla Anadolu lisesi öğrencilerinin sonra sırasıyla kız meslek lisesi ve endüstri meslek lisesi öğrencilerinin ağır fiziksel zorbalığa maruz kaldıkları belirlenmiştir.

#### 4. Sonuçlar ve Öneriler

##### 4.1 Sonuçlar

- Orta öğretim kurumlarında öğrenim gören öğrencilerin maruz kaldıkları zorbalık türleri en fazladan en aza doğru (1) sözel zorbalık, (2) basit fiziksel zorbalık, (3) sanal zorbalık, (4) ağır fiziksel zorbalık, (5) duygusal zorbalık ve (6) saldırı aleti kullanmak veya tehditle yapılan zorbalık şeklindedir.
- Aletsel zorbalık, sözel zorbalık, basit fiziksel zorbalık ve ağır fiziksel zorbalık daha çok erkekler tarafından kullanılmaktadır. Sanal zorbalık ve duygusal zorbalık ise kız öğrenciler tarafından daha fazla kullanılmaktadır.
- Lise türlerine göre akran zorbalığı yapma ve akran zorbalığına maruz kalma açısından zorbalık türlerine en fazla maruz kalan ve en fazla zorbalık davranışı sergileyen öğrenciler Anadolu lisesi öğrencileridir.
- Sanal zorbalığı en fazla Anadolu Lisesi daha sonra Endüstri Meslek Lisesi en son olarak da Kız Meslek Lisesi öğrencileri kullanmakta ve maruz kalmaktadır.
- Duygusal zorbalığı en fazla Anadolu Lisesi, daha sonra Kız Meslek Lisesi ve son olarak da Endüstri Meslek Lisesi öğrencileri kullanmakta ve maruz kalmaktadır.
- Ağır fiziksel zorbalığı en fazla Anadolu lisesi daha sonra sırasıyla kız meslek lisesi ve endüstri meslek lisesi öğrencileri kullanmakta ve maruz kalmaktadır.

##### 4.2. Öneriler

- Akran zorbalığının kaynağının belirlenmesi, nedenlerinin incelenmesi ve neler yapılabileceğinin araştırılması, okullardaki akran zorbalığının azaltılmasını sağlayabilir.
- Cinsiyete göre akran zorbalığını nedenlerini belirlemeye yönelik araştırmalar yapılabilir.
- Lise türlerine göre akran zorbalığının çeşitlerinin belirlenmesine ve zorbalık türünün azaltılması ya da ortadan kaldırılmasına yönelik eğitim çalışmaları yapılabilir.

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## **The consideration of Dr. M. Fazıl KÜÇÜK for Education in his Articles on The Newspaper of Halkın Sesi**

Güngör TOPLU

Dr. M. Fazıl küçük occupies an important position in Cypriot Turks' struggle for independence. Dr. Küçük, in order for ensuring the national fraternity by provoking the Turkish public, for the fact that Turkish schools and Evkaf (Foundation) Administration to be given to Turkish public, that the office of Mufti to be founded, and that Civil Law, Legacy and Tutelage Laws which were accepted by Homeland Turkey to be upheld in Cyprus too, struggled for protecting the rights of Cypriot Turks against England Government.

In this struggle of Dr. Küçük, the newspaper of Halkın Sesi whose founder is himself plays an important role. On the newspaper of Halkın Sesi, founded on March the 14th in 1942, many columns, interviews and pres releases were issued. In these writings, his consideration for education and Cypriot Turks' education were also issued. For this reason in this research, we will stres on Dr. Küçük's consideration for education in the light of his writings.

**Key Words:** Dr. M. Fazıl KÜÇÜK, Cyprus, Cypriot Turks, Education

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## **FATİH Projesinin Uygulandığı Okullarda Görev Yapan Öğretmenlerin Sınıf Yönetimindeki Değişime İlişkin Görüşlerinin İncelenmesi**

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2010 yılının sonlarında başlayan ve 2014 yılında tamamlanması planlanan FATİH (Fırsatları Artırma ve Teknolojiyi İyileştirme Hareketi) Projesi ile eğitimde en son teknolojiyi kullanarak bilgi toplumu yaratmak ve böylece Türkiye'nin çağdaş uygarlık düzeyini yakalaması amaçlanmaktadır. FATİH Projesi ile okulöncesi, ilköğretim ile ortaöğretim düzeyindeki tüm okulların her sınıfına akıllı tahta konulması, her öğretmen ve öğrenciye tablet bilgisayar verilmesi, e-kitaplarla ders yapılması, öğretmenlerin klasik tahta yerine, doğrudan bilgisayara bağlı akıllı tahtalarla ders işlemesi, internetin derste kullanılması öngörülmektedir. Bu çalışma ile Fatih Projesi'nin başlamasıyla eğitim ve öğretimde ve öğretimin önşartı olan sınıf yönetiminin nasıl ve ne yönde değişim gösterdiğinin belirlenmesi amaçlanmaktadır.

**Anahtar Sözcükler:** FATİH Projesi, Sınıf Yönetimi, Tablet, Akıllı Tahta



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## Study of Mothers' Anxieties Related to Their Children's Future

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### Abstract

The purpose of this study is to study anxieties of mothers related to their children's future. Qualitative method was used in order to study anxieties of mothers from different socio-economic levels. Sample of the study are 129 mothers living in Istanbul. 32 of those mothers are from upper socio-economic level while 57 are from middle socio-economic level and 40 are from lower socio-economic level. A half-structured interview form designed by researchers was used as data collection instrument. Descriptive analysis technique was used in interview analysis according to qualitative data analysis.

As a result of the study; anxieties about their children not having a good education, having bad friends, not having a job with which they will be happy, having health problems, not being able to find a good job are frequently observed. Though mothers from different socio-economic groups utter the same anxieties, their level and frequency are different. All mothers in lower, middle and upper socio-economic groups are anxious about their children's having a good education. This is strikingly the leading factor in lower and middle socio-economic groups. This factor is less common in upper socio-economic group. Problems are the leading anxiety factor in upper socio-economic group. Mothers in lower socio-economic group did not utter anxiety about their children not maintaining family ties, not realizing their children, having no child, having no social reputation. This and other findings were revealed at the final part of the study.

**Keywords:** Anxiety, Anxiety about Future, Mothers

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# **EVALUATION OF THE CANDIDATE TEACHERS' PREPARING QUESTION EXPERIENCE BY USING ALTERNATIVE ASSESSMENT TECHNIQUES**

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The purpose of this study , alternative assessment methods used by teachers and to what extent teachers in this process is to identify the problems they face . For this purpose, Istanbul University, Hasan Ali Yücel Faculty of Education Measurement and Evaluation of studying and of course the teachers will be asked to prepare an alternative question. Questions square taking in the preparation process monitoring method using screen recording experience will be observed. In addition to this, teachers will be conducted semi-structured interviews with candidates. At the end of the study, all teachers can use effectively Experts Questions Alternative Preparation System will be obtained and will be made available to all teachers. As a result, teachers associated with alternative assessment methods for implementation of theoretical knowledge as well as practical information, including the granting of additional training will be offered. At the same time faculty members and to foster communication between teachers and the course will ensure that more effective and efficient.

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# GAZETELERLE TARİH EĞİTİMİNE BİR ÖRNEK: 1950 TÜRKİYE BASININDA GEÇMİŞ AKTARIMI

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**Özet :** Bir kitle iletişim aracı olarak gazeteler,kamuoyuna güncel haberler sunmanın yanı sıra, pek çok alanda bilgi aktaran biraygıt olma özelliğine de sahiptirler. Türk gazeteciliğinde; Sağlıkta kùltüre,edebiyattan sanata birçok alanda bilimsel ya da popüler bilgilerin, gazeteiçeriklerinde kitlelere yansıtıldığı gör÷lmektedir. Bu bağlamda"tarih" konulu yayınlar da gazetelerde dikkat çekici oranda kitleleresunulmuştur.

Bu araştırma, 1950 yılı Türkiyeulusal gazetelerinden seçilmiş örnekleri ele alarak, gazetelerin tarih içerikliyayınlarını incelemekte; bu yayınların güncel gelişmelerle bağlantılarını,kamuoyu oluşturma ve siyasi kaygı ve hedefler ile ilintili yönlerini,eğlendirme-eğitme boyutlu işlevlerini irdelemeyi amaçlamaktadır.

**Keywords:** Türk Basını, Tarih Eğitimi, Gazete

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## TWO IMPORTANT TYPES GOVERNESS OF THE SERVET-İ FÜNÛN NOVEL'S: MATMAZEL de COURTON and MISS MORGAN

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The Ottoman Empires declares that, they accept the Western ideas with the declaration of Tanzimat. After that time, Ottoman Empire (make strides) takes steps for westernization rapidly whit government institutions and civic life. So, Ottaman-Turks gain importance, and come into sight in many parts of the European institutions. Governesses and governess have significant effects on sociologic interaction and individual transformation in the name of Westernization, they are the most important institutions.

In Turkish literature before the Republic, western values and items are observed strongly, during the Servet-i Fünûn term. Therefore, there are a lot of governess types in the Servet-i Fünûn novel. In this study, I am going to research and evaluate the governess types in the Aşk-ı Memnû and Ferdâ-yı Garâm novels, and governess types importance and effect in the context of Westernization.

**Keywords:** Westernization, Education, Governess, Servet-i Fünûn