INTE

INTERNATIONAL CONFERENCE ON NEW HORIZONS IN EDUCATION

JULY 13-15, 2016 WIEN, AUSTRIA

Proceedings Book

Volume 6

ISSN: 2146-7358

Editors

Prof. Dr. Aytekin İŞMAN

Assoc. Prof. Dr. Ahmet ESKİCUMALI

Technical Editor

Assist. Prof. Dr. İrfan ŞİMŞEK

Published Date: *December 4, 2016*

Foreword

Dear Guests,

International Conference on New Horizons (INTE) is international educational activities for academics, teachers and educators. These conferences are now well-known international academic events and the number of paper submissions and attendees increase every year. They promote the development and dissemination of theoretical knowledge, conceptual research, and professional knowledge through conferences activities, the conference proceedings books and TOJET & TOJNED. Their focus is to create and disseminate knowledge about new developments in their field. This year, INTE is organized collaboratively in Vienna University of Technology. This Conference has received almost 1300 applications. The Conference Academic Advisory Board has accepted approximately 600 paper to be presented in INTE Conference.

We would like to thank Prof. Dr. Muzaffer ELMAS, Rector of Sakarya University and Prof. Dr. Hellmuth STACHEL from Vienna University of Technology for their supports of organizing these Conferences

We also would like to thank all participants who will present their academic works in INTE 2016, Vienna, Austria and especially to our distinguished guests and keynote speakers for their collaboration and contribution for the success of INTE 2016.

We wish you a successful conference and good time in Vienna, Austria.

Prof. Dr. Aytekin İŞMAN

Doç. Dr. Ahmet ESKİCUMALI

INTE 2016 Organizing Committee

Honorary

Prof. Dr. Elaine P. MAIMON, President, Governor State University, United States

Prof. Dr. Muzaffer ELMAS, President, Sakarya University, Turkey

Prof. Dr. Sabine SEIDLER**,** President, Technische Universität Wien, Austria

General Coordinator

Prof. Dr. Aytekin İŞMAN, Dean, Sakarya University, Turkey

Coordinators

Prof. Dr. Carlos De Sousa REIS**,** Coimbra University, Portugal

Prof. Dr. Colleen SEXTON, Governors State University, United States

Prof. Dr. Deborah E. BORDELON, Governors State University, United States

Prof. Dr. Hellmuth STACHEL, Vienna University of Tecnology, Austria

Prof. Dr. J. Ana DONALDSON, AECT Former President, United States

Prof. Dr. Teresa FRANKLIN**,** Ohio University, United States

Assoc Prof. Dr. M. Ahmet ESKİCUMALI, Sakarya University, Turkey

Associate Coordinator

Assist. Prof. Dr. İrfan ŞİMŞEK, Istanbul University, Turkey

Conference Secretary

Lect. Mustafa ÖZTUNÇ, Sakarya University, Turkey

INTE 2016 Editorial Board

INTE 2016 Keynotes

Assistive Technology: Expanding Higher Education to All Students

Prof. Dr. Robert G. Doyle
Harvard University, United States

Developing Causal Evidence using Different Research Methods: Applications in Education

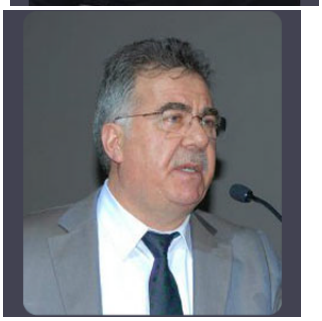
Prof. Dr. John Hitchcock
University of Indiana, United States

Applied Geometry: Foldings and Unfoldings

Prof. Dr. Hellmuth STACHEL
Vienna University of Technology, Austria

The Future of Education: Bring Your Own Device (BYOD) in the Classroom

Prof. Dr. Buket AKKOYUNLU
Hacettepe University, Turkey



Philosophical Foundatıons of Science and Technology The Historical Context

Prof. Dr. Durmus GÜNAY

Maltepe University, Turkey

TABLE OF CONTENT

A Computerized Corpus Analysis of the Use of Pragmatic Markers in Native and Non-Native Corpora

Ali Şükrü ÖZBAY
Faculty of Letters, Karadeniz Technical University, Trabzon, Turkey
ozbay@ktu.edu.tr

Tuncer AYDEMİR
Faculty of Letters, Karadeniz Technical University, Trabzon, Turkey
tunceraydemir28@gmail.com

ABSTRACT
It is an old consensus by now that a computerized corpus-based analysis of semantic prosodic profiles in English language provides various explanations for how EFL learners exploit the target language during their learning process in terms of lexical selection. The prosodic analysis of lexical selections of EFL learners is likely to give us much better means of understanding the acquisition and learning processes of EFL learners as well as the factors influencing these processes (Granger, 2008). This study investigated the semantic prosodic awareness of Turkish EFL learners in terms of using pragmatic markers such as "I mean, I think, so, well, you know, so on, or so". The analysis was done by comparing two argumentative academic corpora, KTUCALE (Karadeniz Technical University Corpus of Academic Learner English) and BAWE (British Academic Written English). In order to measure possible overuses and underuses as well as statistical significance, frequency counts and log-likelihood ratios were used. Corpus linguistics software AntConc 3.2.2 and SketchEngine online corpus software interface were used in order to collect data. The data was analysed quantitatively by comparing frequencies and calculating log-likelihood ratios. The results of this study validated the commonly held view that a limited number of pragmatic features are overly used in the academic argumentative papers of tertiary level Turkish EFL students. Other findings were that BASE, spoken native corpus, corpus included the highest number of pragmatic markers of all the three corpora and BAWE, written native corpus, contained restricted number of markers such as "so" with ample use.

Keywords: pragmatic markers, corpus, frequency, log-likelihood, discourse markers

INTRODUCTION
Corpus linguistics, a computer based study of language, is commonly defined as a field which enables the compilation of language samples that provides authentic data in written and spoken forms for the linguists who seek to analyse and study the language within itself and with the corpora of other languages. It also gives statistical data such as word lists, frequencies, collocates, concordance and key words. Both native corpora used in the study are compared with a non-native EFL learner academic corpus with an aim to compare the pragmatic marker use. Native corpus (reference corpus) acts as a source and provides reference materials and authentic data, while non-native corpus (KTUCALE) is analysed for such various purposes as lexical content, frequency count and key words. In this study, semantic prosodic awareness of tertiary level Turkish EFL learners in terms of using pragmatic markers was, also, investigated through KTUCALE, BAWE and BASE corpora. When the usage of a word gives "an impression of an attitudinal or pragmatic meaning", this is called a semantic prosody (Sinclair J. , 2000, p. 86) and it is "inextricably linked with corpus data as corpus data enlightens the less transparent meanings of the words and phrases" (Stewart, 2010, p. 79). In this respect, semantic prosodic analysis of pragmatic markers was done with the help of corpus data in order to find out their profiles in the case of spoken and written language.

"I mean, I think, So, Well, You know, You see, So on and Or so" are the target pragmatic markers which were analysed within the scope of the study. The reason for the use of this restricted number of markers in the study is that these pragmatic markers are the most frequent ones which were also used by other linguists in their studies. Part of the reason behind this study is to find out whether EFL learners overuse or underuse certain pragmatic markers when compared to the native speaker use, which deserves immediate focus and research. With the assistance of corpus based research, the probable variations in the use of pragmatic markers can be investigated and analysed in an attempt to raise the awareness of EFL learners towards the use of these items in terms of their syntactic and semantic and pragmatic functions.

Semantic Prosody

Semantic prosody has become one of the important notions in Corpus linguistics in recent years. It is also called as semantic harmony, discourse prosody, pragmatic prosody or semantic association. Sinclair (1991) and Louw (1993, p. 157) described semantic prosody as a "consistent aura of meaning with which a form is imbued by its collocates". In other words, according to them, each word may have a special function in its context, and even some near-synonym words may not be used interchangeably. It is also described as "the spreading of connotational colouring beyond single word boundaries" (Partington, 1998, p. 68). Without semantic prosody, words are just considered as single meanings which may not be suitable for writing or speaking; therefore, the discourse may sound non-native or problematic. In Table 1 below, the contextual usages of the pragmatic markers were shown with the examples randomly chosen from BASE, BAWE and KTUCALE corpora.

MARKERS	CORPORA	SAMPLE SENTENCES
I mean	BASE	But **I mean** there it's really striking similarities…
	BAWE	By autocratic, **I mean** that I am solely responsible for the decision…
	KTUCALE	**I mean** that students should do some activities or…
I think	BASE	**I think** that's what he's dealing with there that…
	BAWE	**I think** the pace of the film is interesting.
	KTUCALE	**I think**, a computer cannot take place of teacher.
So	BASE	**So**, it's not an absurd suggestion at all.
	BAWE	**So**, why has this occurred?
	KTUCALE	**So**, I believe that listening helps and facilitates…
Well	BASE	**Well**, he allowed like the Spartans to get help.
	BAWE	**Well**, dear Amanda, thou art the most constant wife…
	KTUCALE	**Well**, in this essay, I will reply how to teach…
You know	BASE	**You know**, Hogarth's last print is called Bathos.
	BAWE	As **you know**, you have been experiencing some chest pain.
	KTUCALE	**You know**, I also use computer program before we…
You see	BASE	**You see**, how this fits here do you see how Spenser…
	BAWE	**You see** he knows me!
	KTUCALE	As **you see**, the world's biggest authorities highlight the…
So on	BASE	We can talk about the viability of it and **so on** but I'm always…
	BAWE	It is quite similar to Burke's; the sea, the storm and **so on**.
	KTUCALE	What their needs and objectives are, and **so on**.
Or so	BASE	Someone asks me to give a talk in a year **or so**…
	BAWE	Over the last half-century **or so**, there has been dramatic decline…
	KTUCALE	Increasingly, in one of the 800 **or so**…

Table 1*:* Contextual usage of the pragmatic markers in BASE, BAWE and KTUCALE corpora

As seen in Table 1, several examples randomly chosen are given in order to exemplify the use of the pragmatic markers across the three corpora. The syntactic positions within the sentence, intended meanings and the semantic prosodic features of the sample sentences above look very similar to each other. Despite the fact that restricted contextual information is provided for each sentence above, it is still possible to speculate that they display similar properties in terms of form and function. Especially, in the example of "I think", it is clearly seen that the marker was used in sentence-initial position in all the examples with the same grammatical function of a noun clause sentence. This and other similarities and possible semantic variations in the use of pragmatic markers across the three corpora were investigated more in detail in results and discussion sections.

Pragmatic Markers

In very general terms, pragmatic markers "presuppose one speaker and at least one addressee taking part in a speech situation, which they at the same time create and monitor via discourse" (Erman, 2001, p. 1337). The various features of pragmatic markers in syntax can be listed as "marking various kinds of boundaries, assisting in turn-taking in oral discourse, expressing speaker attitude and achieving intimacy between speaker and

addressee" (Brinton, 1996, p. 35). Pragmatic markers, such as *you know, I mean, so, well, like* and *now*, have been studied largely from 1980 onwards after corpus based methodologies became common and useful for this kind of studies with the use of computers with the technological developments. They can be defined as linguistic elements "which do not contribute to the propositional content of the utterance which they modify [and that] are frequent in conversation, where they express the speaker's attitudes to the addressee, negotiate background assumptions, express emotions and contribute to coherence" (Aijmer, 2003, p. 1123). According to Jucker (1998, p. 2) who listed the characteristics of pragmatic markers in their study, they are "short, phonologically reduced, optional, multifunctional, and a feature oral rather than written discourse". Moreover, according to Fraser (1996, p. 167), "any signal that has an effect at the communicative as opposed to the strictly propositional level can be considered a pragmatic marker". When pragmatic markers are omitted in a sentence, one result would be that the discourse created in the text becomes unacceptable in grammatical terms and would be seen as "unnatural", "awkward", "disjointed", "impolite", "unfriendly", or "dogmatic" in a communicative context (Brinton, 1996, p. 29). Creating such a discourse could be "incomprehensible for the listener and mission impossible for the speaker" (Svartvik, 1985, p. 352). He also continues that as a consequence of their semantic shallowness, they are difficult to translate into other languages. They can be considered as cultural expressions in oral discourse. As a result, it can be inferred from the previous studies that pragmatic markers play a fundamental role in spoken language.

Research Questions

1. Are the pragmatic markers used mostly in spoken language or written language based on the corpora under examination?
2. To what extent do the tertiary level EFL learners use pragmatic markers while writing?
3. Do tertiary level EFL learners *overuse* pragmatic markers compared to their native counterparts in written and spoken language?
4. Do tertiary level EFL learners *underuse* pragmatic markers compared to their native counterparts in written and spoken language?

METHODOLOGY

The instruments used in the study include two different academic written and one spoken corpora; KTUCALE (Karadeniz Technical University Corpus of Academic Learner English), BAWE (British Academic Written English), BASE (British Academic Spoken English). Moreover, two concordance tools were used in order to obtain and analyse the data, these being Sketch Engine online corpus interface, and AntConc 3.2.2 offline corpus software.

Representation	Corpus	Number of Texts	Average Length of Texts	Total Number of Words
Learner Writing	KTUCALE	196 texts	2,272	509,464 words
Native Expert Writing	BAWE	2897 texts	2,554	6,506,995 words
Native Expert Speaking	BASE	160 texts	7,826	1,252,256 words

Table 2: Corpora Contents of KTUCALE, BAWE and BASE

The non-native learner corpus comes from Karadeniz Technical University Corpus of Academic Learner English (KTUCALE). KTUCALE corpus contains argumentative academic essays which were produced by tertiary level EFL students in Turkey. All the essays are academic in character and the selected sample for the present comparative study is a total of 509.464 words. The native and reference corpus of similar academic content was taken from the British Academic Written English (BAWE) database. This native speaker corpus consists of academic essays written by British university students and contains 6.506.995 words with the contents ranging from Arts and Humanities, Social Sciences, Life Sciences to Physical Sciences in three levels of study: undergraduate, graduate and master levels. KTUCALE and BAWE corpora were analysed via AntConc 3.2.2 offline corpus software which is available free online, and it makes possible to gather data such as wordlist, concordance, collocates, frequency and word clusters, etc... As the final corpus, British Academic Spoken English (BASE) was used in order to compare and to find out whether they are mostly used in spoken or written language. BASE was reached via SketchEngine online corpus interface though which it is possible to gather data from online corpora in various languages, and it is, also, available to upload the researchers` personal corpora for comparison.

In order to compare the three corpora, normalized (standardized) frequencies were calculated. The reason for the use of normalized frequencies is that the raw frequencies do not give the proportional data while comparing at least two corpora because of the difference between the word counts of the corpora. In order to calculate the

normalized frequencies, the following formula was used; (Standardized Frequency = Raw Frequency x 1.000.000 / Corpora Content). Normalizing the data to one million is optional; furthermore, it can be also normalized to one thousand or one hundred thousand. Moreover, LL (Log Likelihood) scores of each pragmatic marker were calculated in order to find out the difference between the use of pragmatic markers in the native spoken, native written, and non-native written corpora. LL scores were automatically calculated via online interface of Lanchester University database on the following link; *(http://ucrel.lancs.ac.uk/llwizard.html)*. If the LL score is over 3.84, critical value is 95th percentile; if the LL score is over 15.13, critical value is 99th percentile.

RESULTS

The pragmatic markers, and their raw and normalized frequencies of the three corpora, which are used in the scope of the study are listed below in Table 3. Two of these corpora are academic written (BAWE and KTUCALE) and the other (BASE) is academic spoken corpus.

	BASE	**BAWE**	**KTUCALE**	**BASE**	**BAWE**	**KTUCALE**
		Raw			**Normalized Per Mil**	
I mean	1052	27	13	840,08	4,1493	25,5170
I think	1501	318	122	1198,60	48,8704	239,4673
So	12790	10478	901	10213,60	1610,2671	1768,5253
Well	3187	50	10	2545,01	7,6840	19,6284
You know	2133	50	37	1703,30	7,6840	72,6253
You see	381	24	9	304,25	3,6883	17,6656
So on	385	145	44	307,45	22,2837	86,3652
Or so	74	34	3	59,09	5,2251	5,8885
TOTAL				**17161**	**1710**	**2236**

Table 3: Raw and Normalized per mil frequencies of the pragmatic markers in three corpora

According to Table 3, it is seen in the total normalized frequencies of the three corpora that target pragmatic forms are overly-used in spoken corpus. These overused-pragmatic markers seem natural if we consider the nature of spoken language and how much these markers fit into it. In other words, pragmatic markers have speech-like nature and EFL learners are quite expected to use them in spoken discourse. With all these in mind, however, in the other two academic corpora there are also significant differences in terms of the usage of these markers as well. For instance, based on the normalized frequencies above, it seems that the KTUCALE corpus display higher usages of pragmatic markers (2236) when compared to BAWE (1710). This is most visible with the exception of "so" and "or so" whose normalized frequencies are almost the same. The reason for doing so may be given to the fact that Turkish EFL academic writers overused these speech-like items in their academic essays unlike their native speaker counterparts who seemed to have used much fewer of these markers. With all these, however, there is still a need for a statistical measurement in order to demonstrate the difference between the groups. Table 4 and 5 below show the LL measurements for the overall frequencies among the three corpora.

	BASE (normalized)	**BAWE (normalized)**	**LL score**
I mean	840	4	1119.24
I think	1199	49	1316.77
So	10214	1610	6981.11
Well	2545	8	3430.99
You know	1703	8	2270.14
You see	304	4	384.28
So on	307	22	294.58
Or so	59	5	53.63

Table 4: Log likelihood Score of BASE and BAWE

The first comparison was made between the two native reference corpora. In Table 4 above, log likelihood scores of BASE and BAWE were calculated in order to test the commonly-held view that pragmatic markers are mostly used in spoken language as compared to written one. As seen in Table 4, all of the LL scores are highly over 15.13 ($p<0.01$) which is the critical difference value of 99.99th percentile level. It is clearly seen that there is a significant difference between BASE and BAWE corpora regarding the pragmatic marker use, which means that the target pragmatic markers can be considered as the speech-like words and phrases with their oral functions.

With this comparison, on the other hand, it is also seen that BAWE corpus include few instances of the pragmatic markers with the exception of "so", which signals the fact that these forms may not be ideal forms to be used in the written academic language by the native writers. This contention can further be increased by the very few uses of pragmatic markers such as "I mean (4)", "well (8)", "you know (8)", "you see (4)", "or so (5)" in BAWE. In BASE corpus, however, it is seen that there are ample amount of pragmatic marker use with "so" the most (10214). This is followed by "well" and "you know" markers which have a normalized value of total 4250 per million. "I mean", "you see", "so on" are the other types of pragmatic markers which received higher values when compared to their native written corpus hits.

	BAWE (normalized)	KTUCALE(normalized)	LL score
I mean	4	26	18.03
I think	49	239	136.54
So	1610	1769	7.48
Well	8	20	5.31
You know	8	73	60.07
You see	4	18	9.64
So on	22	86	40.53
Or so	5	6	0.09

Table 5: Log Likelihood Score of BAWE and KTUCALE

In Table 5, log likelihood scores of BAWE and KTUCALE were calculated in order to compare the pragmatic marker content of the native academic corpus with a learner academic corpus of the tertiary level Turkish EFL learners. According to the Table 5 above, all LL scores except *or so* are over 3.84 ($p<0.05$) which is the critical difference value of 95 %. When compared with the native reference corpus, the most striking finding in Table 4 is that Turkish academic corpus seem to include highly significantly overused markers with the exception of "or so". The highest overuse in KTUCALE corpus is with "I think", "you know" and "so on" markers. One reasonable explanation for the overuse of pragmatic markers in the KTUCALE may be the language transfer from the L1. The learners` native language also contains similar markers and it is possible that the learners may have transferred them directly from L1.

	BASE (normalized)	KTUCALE (normalized)	LL score
I mean	840	26	967.02
I think	1199	239	699.83
So	10214	1769	6580.55
Well	2545	20	3321.84
You know	1703	73	1853.12
You see	304	18	307.58
So on	307	86	131.83
Or so	59	6	50.09

$p < 0.01$ (critical value: 3.84); + indicates overuse in the first corpus relative to the second corpus; -indicates underuse in the first corpus relative to the second corpus

Table 6: Log Likelihood Score of BASE and KTUCALE

In Table 6, log likelihood scores of BASE and KTUCALE were calculated in order to compare the pragmatic marker content of the native academic spoken corpus with KTUCALE. According to the Table 6 above, the log likelihood scores of BASE and KTUCALE were calculated with an aim to compare native spoken corpus with a non-native written corpus in order to observe the probable underuse and overuses in the non-native learner corpus. As seen in Table 6, all of the LL scores are highly over 15.13 ($p<0.01$) which is the critical difference value of 99.99th percentile level. It is clearly seen that there is a huge difference between BASE and KTUCALE corpora regarding the pragmatic marker use. The similar difference was also observed with the BAWE corpus as well. The fact that written academic corpora, regardless of native or non-native, contain much fewer pragmatic markers than the spoken component once more support the long-validated view that pragmatic markers are very closely related to the speech.

In Table 7 below, semantic prosodic profiles of all the pragmatic markers were given across the three corpora. Some interesting conclusions can be drawn from these prosodic profiles. The positive, negative or neutral features of each marker were not indicated in this study. Instead, each pragmatic marker was analysed with only their 1+ right or 1+ left complements. First of all, Table 7 indicates the results of the target marker "I mean". The most frequently used 1R adjective is the subject pronoun “I” (140 times) in BASE and clausal “that” in BAWE (5 times) and KTUCALE (5 times). The second most frequently used collocate is “It” in BASE (105) and this item was also used in the other corpora a total of 3 times. It seems that “I” is a significant collocate of the pragmatic marker “I mean” in BASE but BAWE and KTUCALE corpora do not contain this item. On the other hand, “it” is another significant collocation in BASE (105 times) but the two written academic native and non-native corpora contain very few instances of this item after “I mean”.

The pragmatic marker “I think” displays more or less a similar picture in the three corpora with the difference that absolute frequencies are higher in each. “It”, “That” and “I” complementation were used after “I think” marker in an overwhelming manner in BASE (506 times). However, the same complementation “that” and “it” were used only a total of 108 times in BAWE and 48 times in KTUCALE after “I think” marker.

The pragmatic markers “So”, “Well” and “You know” also display much higher frequencies in BASE but much lower frequencies in BAWE and KTUCALE corpora. Based on Table 7, it seems that “You” complement was used 1777 times with pragmatic markers “So”, “Well” and “You know” in BASE, but only 2 times in the academic written corpora.

Another interesting finding is that “You see” marker received different complements across the three corpora. The variety of complements with this marker may not be easy to explain. One thing is certain, however, that it received very few complements in BAWE and KTUCALE (a total of 17) unlike BASE corpus, which received more than 100 complements.

	BASE (Abs)	**BAWE (Abs)**	**KTUCALE (Abs)**
I mean	I (140) It (105) There (55)	That (5) When (1) It (1)	That (5) My (2) It (2)
I think	It (233) That (163) I (110)	That (67) It (41) This (23)	That (43) This (11) It (5)
So	You (1432) We (1291) That (1259)	It (464) We (223) They (196)	They (67) It (45) Students (17)
Well	I (205) It (160) You (128)	I (5) Let (3) Now (2)	You (2) Then (1) Helena (1)
You know	You (217) It (140) That (131)	I (4) That (3) Your (1)	That (5) I (2) How (2)
You see	That (51) This (29) I (25)	We (2) My (2) It (2)	Words (4) Result (1) It (1)
So on (**1L**)	And (359) It (7) This (4)	And (128) Skills (3) Time (2)	And (42) Books (4) Languages (2)
Or so (**1L**)	Years (19) Minutes (6) Fifty (6)	Last (5) Decade (5) Years (3)	Years (1) Past (1) -

Table 7: Semantic profiles of all the pragmatic markers across the three corpora

Finally, since “So on” and “Or so” pragmatic markers were in sentence-ending positions their 1Left collocates were listed. It is interesting to note that “and” complement was used more than 350 times in BASE corpus and very few instances of “it” and “this” complements followed (11 times) this. The number of “and” complement in BAWE corpus also deserves further attention (128 times). However, as a non-native corpus, KTUCALE corpus includes “and” complement only 42 times, much fewer than that of BAWE. Nevertheless, KTUCALE

corpus "So on" marker is also followed by very few nouns such as *books* and *languages.* As a result, considering the contents of all three corpora, it is possible to say that the distribution of the profiles have no similar proportions to each other when these pragmatic markers are in the sentence ending positions.

Discussion and Conclusion

This study focused on the contrasts between native and non-native performance in academic writing in terms of pragmatic markers and is likely to give us a more precise understanding of the challenges that tertiary level EFL writers encounter while writing academic essays and offers a potential basis for pedagogically useful conclusions.

Considering the normalized frequencies and log-likelihood results of all the three corpora used in the study, it is possible, first of all, to conclude that BASE corpus included the highest number of pragmatic markers. This is, of course, due to the fact that pragmatic markers are generally regarded as speech like items and the BASE corpus was a spoken academic corpora. Especially, such markers as "So" (10213,60 occurrences per million words), "Well" (2545 occurrences per million words) and "You know" (1703,30 occurrences per million words) became the most widely used ones through their pragmatic meaning and function in communication.

However, the pragmatic marker use in the two written academic corpora deserves further pedagogic analysis and interpretation. Based on Table 3 above, it is interesting to note that Turkish EFL learners when compared to native English writers (BAWE) overuse almost all the pragmatic markers. The reason for these overly used pragmatic markers may be given to the several related factors. In the literature, similar results have also been obtained in various studies such as Gilquin & Paquot (2007); Simcikaite, (2012); Babanoğlu (2014). As stated by Gilquin & Paquot (2007) and by Babanoğlu (2014), majority of the problems in the use of pragmatic markers by Turkish EFL learners may be given to the various factors such as L1 transfer, L2 instruction, register confusion and developmental factors.

From a language learning and teaching perspective, first of all, we believe that there is certainly a need to raise the tertiary level EFL students` awareness towards the use of pragmatic markers since they overuse some markers and underuse others. This needs to be balanced and, therefore, awareness raising activities are needed in the language classrooms. These awareness raising activities need to be targeted toward the use of pragmatic markers and tertiary level EFL teachers need to draw their attentions of their students towards the correct use of these markers in writing. In other words, considering the fact that EFL learners lack competence in terms of using pragmatic markers in their academic essays, there is a need for integrating the use of pragmatic markers into the syllabus and they should be able to know the differences between speech like items and academic English.

It is also the case that L1 transfer may have played a role for the overly- used pragmatic markers in the essays of Turkish EFL learners. In fact L1 negative transfer is a common phenomenon for many EFL learners, which may also account for the Turkish learners' overuse of oral features in their writing.

Finally, considering the commonly held view that Turkish EFL learners experience difficulties learning the English language despite devoting a notoriously extended period of school time learning it, the over use of pragmatic markers in the academic essays of Turkish EFL learners may be attributed to the interlanguage developmental levels which are formed by the learners of a foreign language (L2) who have no native-like proficiency but approximate the target language and preserve several elements of their L1 while writing in L2.

Last but not least, the understanding of the developmental stages of the EFL learners should be accepted as a potential advantage of the Corpus based Interlanguage analysis process (Meunier, 2002). It is through these kinds of contrastive interlanguage analysis procedures that the problems of EFL learners are revealed.

REFERENCES

Aijmer, K. &.-M.-V. (2003). The discourse particle well and its equivalents in Swedish and Dutch. *Linguistics 41 (6)*, 1123-1161.

Babanoğlu, M. P. (2014). A corpus-based study on the use of pragmatic markers as speech-like features in Turkish EFL learners' argumentative essays. *Procedia - Social and Behavioral Sciences 136*, 186 – 193.

Brinton, L. J. (1996). *Pragmatic Markers in English.* NewYork: Mouton de Gruyter.

Erman, B. (2001). Pragmatic markers revisited with a focus on you know in adult and adolescent talk. *Journal of Pragmatics 33*, 1337-1359.

Fraser, B. (1996). Pragmatic Markers. *Pragmatics 6*, 167-190.

Gilquin, G. &. (2007). Spoken Features in Learner Academic Writing: Identification, Explanation and Solution. *Proceedings of the 4th Corpus Linguistics Conference.* Birmingham: University of Birmingham.

Granger, S. (2008). Learner corpora in foreign language education. In N. V.-S. Hornberger, *Encyclopedia of learner and education. Second and foreign language education, 4* (pp. 337-51).

Jucker, A. H. (1998). Discourse markers: an introduction. In A. H. Jucker, *Discourse markers. Descriptions and theory* (pp. 1-12). Amsterdam: Benjamins.

Louw, B. (1993). Irony in the text or insincerity in the writer? The diagnostic potential of semantic prosodies. In M. &. Baker, *Text and Technology.* Amsterdam: John Benjamin.

Meunier, F. (2002). The Pedagogical Value of Native and Learner Corpora in EFL Grammar Teaching. In S. Granger, & J. &.-T. Hung, *Computer Learner Corpora, Second Language Acquisition and Foreign Language Teaching* (pp. 119-142). Amsterdam: John Benjamins.

Partington, A. (1998). *Patterns and Meanings: Usig Corpora for English Language Research and Teaching.* Amsterdam: John Benjamins.

Simcikaite, A. (2012). Spoken Discourse Markers in Learner Academic Writing. *Studies about Languages, 20*, 27-34.

Sinclair, J. (1991). *Corpus, Concordance, Collocation.* Oxford: Oxford University Press.

Sinclair, J. (2000). Lexical Grammar. In *Naujoji Metodologija* (p. 86). Darbai ir Dienos.

Stewart, D. (2010). *Semantic Prosody: A Critical Evaluation.* London: Routledge.

Svartvik, J. &.-B. (1985). Words, words, words: The rest is silence. In S. &. Bäckman.

A RESEARCH ON DETERMINING THE LEVELS OF ACADEMIC RISK TAKING OF PRE-SERVICE TEACHERS

Ciğdem Çıngıl Barış
ccingil@istanbul.edu.tr

Zeliha Özsoy Güneş
ozsoyz@istanbul.edu.tr

F. Gülay Kırbaşlar
gulaykirbaslar@gmail.com

Academic risk taking explains bravery and unwillingness of the students in conflict against difficulties and their learning situations. Academic risk taking ability is an important factor that carries the highest level of academic achievement. Academic risk taking was examined to determine the factors that affect the natural environment and to examine students' intrinsic motivation. In the light of this reason, the objective of this research is to look into academic risk taking levels of the pre-service teachers. With this aim, the following questions were studied; 1- What are academic risk taking levels of the pre-service teachers? 2- Do academic risk taking levels of pre-service teachers vary in relation to; gender, class, graduated secondary school? In the study, quantitative method of research and relational screening model were used. The Scale of Academic Risk Taking which was developed by Clifford (1991) and adapted to Turkish by Korkmaz (2002) was used. The scale is made up of 36 items and 3 dimensions. The sample of the study is made up of Primary School teacher candidates who study at the Faculty of Education. For data analysis, SPSS Software 20 and ANOVA, independent T-Test, Post-Hoc Tests were used. As a result of data analysis, Academic risk taking levels teacher candidates are found to be at a good level. Academic risk taking levels of teacher candidates are not meaningful in terms of gender, whereas it displays a meaningful difference for the class level and graduated secondary school.

Keywords: Academic Risk Taking, Pre-service Teachers, Education Faculty

ABD, İNGİLTERE VE TÜRKİYE'DE YÜRÜTÜLEN EĞİTİM YÖNETİMİ VE DENETİMİ LİSANSÜSTÜ PROGRAMLARININ KARŞILAŞTIRILMASI

İbrahim SÖZCÜ
Eğitim Fakültesi
Aksaray Üniversitesi
Türkiye
ibrahimsozcu@aksaray.edu.tr

ÖZET

21. yüzyılın en belirgin özelliklerinden biri de hızlı yaşanan değişimlerdir. Ulusal ya da uluslararası düzeylerde gerçekleşen kültürel, sosyal, ekonomik ve politik değişimler bütün sektörleri olduğu gibi eğitim sektörünü de etkilemiştir. Okulların örgüt yönetimi ve yapılarında, çevre ile olan etkileşimlerinde ve eğitim süreçlerinde önemli değişimler yaşanmıştır. Bu değişimlerle birlikte eğitime olan talep artmıştır. Son yıllardaki üniversite öğrencisi sayısındaki artış ve özel sektörün üniversite eğitimine yaptığı yatırımlar bu durumu açıklar niteliktedir. Bu gelişmeler, eğitim sisteminin düzenli ve yeterli şekilde planlanabilmesi için daha fazla sayıda ve daha nitelikli uzman ihtiyacını da beraberinde getirmiştir. Bunlara ilave olarak alana dair kapsamlı çalışmalara, analizlere ve değerlendirmelere ihtiyaç duyulmuştur.

Diğer taraftan eğitim sürecinin temel yapı taşı olan okulların ve diğer eğitim kurumlarının başarısı yönetim ve denetim süreçlerindeki nitelik ile doğrudan ilişkilidir. Hali hazırda görev yapmakta olan eğitim yöneticileri ve denetçilerin büyük çoğunluğu eğitim yönetimi ve denetimi alanında özel bir eğitim almadan göreve başlamışlerdır. Yönetim ve denetim hizmetlerine talip olan kişilerin alana ilişkin teorik altyapılarının sağlam olması, uygulamada karşılaşılan problemleri bilimsel yöntemler ile çözebilmesi ancak nitelikli bir eğitim alması ile mümkündür.

Bütün bu ihtiyaçlar doğrultusunda bir çok ülkede eğitim yönetimi ve denetimi lisans veya lisansüstü programları faaliyet göstermektedir. Yönetim ve denetim sürecinde görev almak isteyen bireyler gerekli teorik altyapıyı bu programlarda karşılamaktadırlar. Ancak lisans ve lisansüstü programlar farklı özellikler gösterebilmektedir. Üniversiteler farklı uygulamalar ile alana ve alanda eğitim alann bireylere katkı sağlamaktadır. Her bir üniversite gelişen çevre özelliklerine uygun dönüşümü yakalayabilmek için farklı sistemler üzerinden farklı uygulamaları dikkate alarak en uygun modeli uygulamaya çalışmaktadırlar. Bu araştırma, ABD, İngiltere'de yürütülen Eğitim Yönetimi ve Denetimi alanındaki yüksek lisans programlarını incelemeyi ve Türkiye' de yürütülen lisansüstü programlar ile karşılaştırmayı amaçlamaktadır.

An Examination of Stage of Exercise Behavior Change and Exercise Self - Efficacy in University Students

Abdurrahman AKTOP

Akdeniz University, School of Physical Education and Sports, Turkey
aktop@akdeniz.edu.tr

Kübra ŞEN

Akdeniz University, School of Physical Education and Sports, Turkey
kubrasen_02@hotmail.com

ABSTRACT

The aim of present study was to examine exercise self-efficacy level of university students and to determine their stage of exercise behavior according to transtheoretical theories. Participants were 400 students (199 men and 201 women) who were studying in Akdeniz University in and took elective physical education courses in 2012-2013 academic years. All the students voluntarily took part in present study. Stage of Exercise Behavior Change Questionnaire, developed by Marcus and Lewis and Exercise Self-Efficacy Questionnaire, developed by Nigg and Courneya applied to the participants in classroom setting. Results of statistical analyses revealed that the active men students (in the stage of action and maintenance) had higher self-efficacy subscale scores in negative affect ($Z=-4.33$, $p<.001$), must exercise alone ($Z=-2.24$, $p=.025$) and resistance from others ($Z=-2.85$, $p=.004$) than the non-active male students (in the stage of pre-contemplation and contemplation).

Statistical analyses in female students showed that there were significance differences between the active (in the stage of action and maintenance) and non-active (in the stage of pre-contemplation and contemplation) female students in must exercise alone ($Z=-3.10$, $p=.002$) and resistance from others ($Z=-3.81$, $p<.001$) self-efficacy sub scale. Female students in the active group had higher scores in must exercise alone and resistance from others self-efficacy subscale than non-active counterparts. Active male students and active female students had higher self - confidence for participating and maintaining exercise behavior.

Keywords: University students, Exercise Participation, Exercise self-efficacy, stage of exercise behavior change

INTRODUCTION

Physical activity is bodily movements that are produced as a result of skeletal muscle contraction and reguire energy expenditure above basal level (Connor, 1994). Various health benefits regular physical activities and exercise have been demonstrated for adolescent populations. The problems on exercise adherence have been well-documented (Introduction 1). Dishman (1991) found that during the first 6 months 50% of individuals who engage in exercise programs drop out**.** Similar result were observed for different age groups; children, adolescent, and the elderly (Nigg and Courneya, 2001). Current researches tried to explain the reasons underlying the onset, maintenance or drop out from physical activity by using various theories and research designs. The most common theory used in explaining exercise behavior and adherence is the Transtheoretical Model. The Transtheoretical Model postulates that individuals move through a series of stages as they adopt and maintain physical activity (Lewis, Williams, Martinson, Dunsiger, & Marcus, 2013).

The Transtheoretical Model consist of four components. These are known as stage of change, behavioral strategies, cognitive strategies and decisional balance. The stages of change are the main organizing structure of Transtheoretical Model. The most commonly known stages are precontemplation, contemplation, preparation , action, and maintenance. According to Precontemplation is characterized by the absence of intention to change behavior. Contemplation is defined as the presence of intention to change behavior. When intention to begin the behavior exists and some preparatory behavior or the behavior itself has begun inconsistently, an individual is classified as being in the preparation stage. Action is distinguished by having begun consistent behavior change, while continuation of the behavior change moves the individual to the maintenance stage (Dannecker, Hausenblas, Connaughton, & Lovins, 2003).

Depending on the changing conditions of the universities, the self-efficacy, life satisfaction of the students and their life goals are different. The aim of present study was to examine exercise self-efficacy level of university students and to determine their stage of exercise behavior in terms of gender according to Transtheoretical Model.

THE STUDY

Participants were 400 students (199 male students and 201 female students) who were studying in Akdeniz University in and took elective physical education courses in 2012-2013 academic years. All the students voluntarily took part in present study.

Self-efficacy was determined by exercise Self-Efficacy Questionnaire, developed by Nigg and Courneya (2001). This 18 item questionnaire that consisted of a 5-point Likert scale ranging from not at all confident (1) to very confident (5), has 6 factors including, negative affect, excuse making, must exercise alone, inconvenient to exercise, resistance from others, and bad weather. Turkish adaptation studies were conducted by Miçoğulları, Cengiz, Aşçı, Kirazcı (2008).

Stage of Exercise Behavior Change Questionnaire, developed by Marcus and Simkin (Marcus & Lewis, 2003) a four-item self-report questionnaire that categorizes individuals into one of the five stages of change. These five stages are; Precontemplation, Contemplation, Preparation, Action, and Maintenance. Turkish adaptation studies were conducted by Cengiz, Aşçı, & Ince (2010).

The Questionnaires were voluntarily applied to the students who were studied in departments of Akdeniz Universtiy. The students of the School of Physical Education and Sports were excluded form study.

In the first part of the statistical analysis, descriptive statistics (mean, standard deviation and Kolmogorov-Smirnov normality test) were computed. According to Kolmogorov-Smirnov normality test results all the variables were not normally distributed. For that reason, Mann- Whitney-U test was used to determine differences between the mean scores of gender, active and non-active groups. All statistical procedures were performed in SPSS Version 10.0; the alpha level was set at .05.

FINDINGS

The participants, took part in the presents study, 199 were male students (49.8%), 201 were female students (50.2%). The mean age of male students was 20.64 ± 1.56 years, female students was 20.49 ± 1.42 years, and there was no significant age difference between male and female university students ($Z = - 651$, $p = .52$).

It was found that 17.1% (n = 34) of the male students were studying in Technical Sciences Vocational School and 11.1% were studying in the Faculty of Tourism. In female students, 13.4% were studying in the Faculty of Education and 11.4% were studying in the Faculty of Tourism.

Table 1. Participants view's about sports and exercise facilities in campus

What do you think about sport and exercise facilities in campus?	Male Students (n=199)	Female Students (n=201)
	(f) %	(f) %
Very Satisfactory	7 % (14)	8 % (16)
Satisfactory	44.7 % (89)	30.8 % (62)
Neutral	20.1% (40)	34.8 % (70)
Unsatisfactory	24.1% (48)	19.4 % (39)
Very Unsatisfactory	4 % (8)	7 % (14)

When the frequency (f) and percentage (%) of the views of the students regarding the exercise and sports facilities were examined, 44.7 % (n=89) of the female students found the facilities to be satisfactory and 24.1 (n=48) found to be unsatisfactory. In female students, while 30.8 % (n=62) of them were satisfied with sports and exercise facilities in campus, 34.8 % (n=70) did not have an idea and 19.4 % found unsatisfactory.

Table 2.Distributions of male and female university students stage of exercise behavior change

			Gender		
			Male Students	Female Students	Total
Stage of Exercise Behavior Change	Precontemplation	f	47	84	131
		%	23.6 %	41.8 %	32,8 %
	Contemplation	f	24	32	56
		%	12.1 %	15.9 %	14,0 %
	Preparation	f	48	47	95
		%	24.1%	23.4 %	23,8 %
	Action	f	29	15	44
		%	14.6 %	7.5 %	11,0 %
	Maintenance	f	51	23	74
		%	25.6 %	11.4%	18,5 %
	Total	f	199	201	400
		%	100,0 %	100.0 %	100.0 %

Chi-Square test was used to compare the differences in stage of change in exercise between male and female participants. The results of the statistical analysis showed that a significant gender difference was found in distributions of the stage of change [X2 (3, N = 400) = 26.644, p <.001]. It was determined that while men had the highest distribution in maintenance stage (25.6 %), women had in precontemplation stage (32.8 %)

Table 3. Mean and standart deviation scores of male and female university students in exercise self- efficacy

	Male Students			Female Students	
Exercise Self Efficacy	Mean	SD		Mean	SD
Negative Affect	8.4	3.1	Z=-3.37, p=.001	7.4	3.2
Excuse Making	8.3	2.7	Z=-2.39, p=.017	7.6	2.9
Must Exercise Alone	10.1	2.7	Z=-3.69, p<.001	8.9	3.1
Inconvenient to Exercise	8.6	2.9	Z=-1.65, p=.098	8.0	2.9
Resistance from others	9.1	3.0	Z=-2.77, p=.006	8.2	3.0
Bad Weather	7.8	3.6	Z=-2.48, p=.013)	7.0	3.5

Statistical analyses showed that there was a significant gender difference in negative affect (Z=-3.37, p=.001), excuse making (Z=-2.39, p=.017), must exercise alone (Z=-3.69, p<.001) and bad weather (Z=-2.48, p=.013) subscale of exercise self-efficacy questionnaire. Male students had higher self-efficacy for negative affect, excuse making, must exercise alone and bad weather than female students (p<.05).

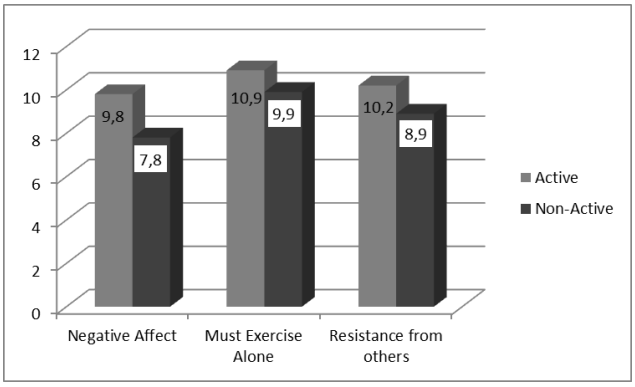


Figure 1. Self efficacy scores of active and non-active male university students

Results of statistical analyses revealed that the active male students (in the stage of action and maintenance) had higher self-efficacy subscale scores in negative affect (Z=-4.33, p<.001), must exercise alone (Z=-2.24, p=.025) and resistance from others (Z=-2.85, p=.004) than the non-active male students (in the stage of pre-contemplation and contemplation).

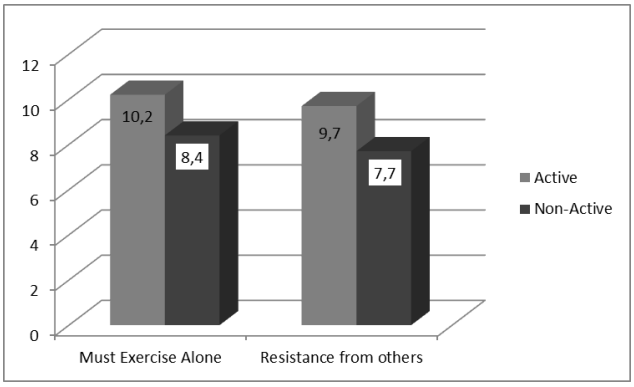


Figure 2. Self efficacy scores of active and non-active female university students

Statistical analyses in female students showed that there were significance differences between the active (in the stage of action and maintenance) and non-active (in the stage of pre-contemplation and contemplation) female students in must exercise alone (Z=-3.10, p=.002) and resistance from others (Z=-3.81, p<.001) self-efficacy subscales. Female students in the active group had higher scores in must exercise alone and resistance from others elf efficacy subscale than non-active counterparts. Active men and active women students had higher self - confidence for participating and maintaining exercise behavior.

CONCLUSIONS

The aim of present study was to determine exercise self-efficacy level of university students and to compare their stage of exercise behavior in terms of gender according to Transtheoretical Model. Participants were 400 students (199 male students and 201 female students) who were studying in Akdeniz University in and took elective physical education courses in 2012-2013 academic years. The participants, took part in the presents study, 199 were male students (49.8%), 201 were female students (50.2%). Most of the male participants thought that exercise and sports facilities in Akdeniz University were satisfactory; however most of the female participants had no idea about exercise and sports facilities in Akdeniz University.

The results of present study showed that there was a significant gender difference in stages of exercise behavior among university students. Male university students had the highest distribution in maintenance stage (25.6 %), female students had highest distribution in precontemplation stage (32.8 %). According to finding ıt can be said that male university student more active than female students. The finding of present study is consistent with previous studies indicating gender differences in satges of exercise behavior. Similar results were found in previous studies in university students (Bucksch, Fine, & Kolip, 2008, Fischer, & Bryant, 2008, Oral, & Aktop, 2014).

Results also revealed that male students had higher self-efficacy for negative affect, excuse making, must exercise alone and bad weather than female students ($p<.05$). When the exercise self-efficacy scores were examined in terms of being active and non active, it was found the active male students (in the stage of action and maintenance) had higher self-efficacy subscale scores in negative affect, must exercise alone and resistance from others than the non-active male students (in the stage of pre-contemplation and contemplation). In female students the findings results showed that there were significance differences between the active (in the stage of action and maintenance) and non-active (in the stage of pre-contemplation and contemplation) female students in must exercise alone and resistance from self-efficacy subscales. Female students in the active group had higher scores in must exercise alone and resistance from others elf efficacy subscale than non-active counterparts. Active men and active women students had higher self -confidence for participating and maintaining exercise behavior.

REFERENCES

Bucksch, J., Finne, E., & Kolip, P. (2008). The transtheoretical model in the context of physical activity in a school-based sample of German adolescents. *European Journal of Sport Science*, 8(6), 403-412.

Cengiz, C., Aşçı, F. H, İnce, M. L. (2010). Exercise stages of Change Questionnaire: Its reliability and validity. *Türkiye Klinikleri Journal of Sports Sciences*, 2(1), 32-37.

Dannecker, E. A., Hausenblas, H. A., Connaughton, D. P., & Lovins, T. R. (2003). Validation of a stages of exercise change questionnaire. *Research Quarterly For Exercise And Sport*, 74(3), 236-247

Dishman, R. (1991). Increasing and maintaining exercise and physical activity. *Behavior Therapy*, 22(3), 345-378

Fischer, D. V., & Bryant, J. (2008). Effect of certified personal trainer services on stage of exercise behavior and exercise mediators in female college students. *Journal of American College Health*, 56(4), 369-376.

Lewis, B. A., Williams, D. M., Martinson, B. C., Dunsiger, S., & Marcus, B. H. (2013). Healthy for life: a randomized trial examining physical activity outcomes and psychosocial mediators. *Annals of Behavioral Medicine*, 45(2), 203-212.

Marcus, B. H., & Lewis, B. A. (2003). Physical Activity and the Stages of Motivational Readiness for Change Model. *President's Council on Physical Fitness and Sports Research Digest*.

Miçooğulları, B.O., Cengiz, C., Aşçı, F.H., Kirazcı, S. (2008). Psychometric properties of exercise behavior decision-making inventory for Turkish students (Egzersiz davranışına karar verme envanteri'nin psikometrik özelliklerinin Türk öğrenciler için test edilmesi,) *10th International Sport and Science (10. Uluslarası Spor ve Bilim Kongresi)*, 137-139, Bolu

Nigg, C. R.,& Courneya K. S. (2001).Transtheoretical model: Examining adolescent exercise behavior. *Journal of Adolescent Health*, 22: 214–224.

O'Connor, M. J. (1994) Exercise promotion in physical education: Application of the transtheoretical model, *Journal of Teaching in Physical Education*, 14(1), 2-12.

Oral, C., & Aktop, A. (2014). Investigation of Stage of Exercise Behavior Change and Exercise Self – Efficacy Levels of University Students (Üniversite Öğrencilerinin Egzersiz Öz yeterlik Düzeyleri ve Egzersiz Davranış Değişim Basamaklarının İncelenmesi). *International Journal of Science Culture and Sport*, Special, (2), 2148-1148.

ANALYSIS OF THE ATTITUDES OF PRE-SERVICE SCIENCE TEACHERS ON RENEWABLE ENERGY SOURCES

Mustafa UĞRAŞ
Fırat University
mugras@firat.edu.tr

Şeyma AKSAKAL
Fırat University
s.aksakal@firat.edu.tr

ABSTRACT

The present study was conducted to determine the attitudes of pre-service science teachers on renewable energy sources. Mixed methodology was used to determine the attitudes of pre-service science teachers in depth in the study. Study sample included 116 freshmen, sophomore and junior students attending Fırat University Faculty of Education, Science Teaching Department. Renewable energy sources attitude scale developed by Güneş, Alat and Gözüm (2013) and which has a reliability coefficient of .87, and an interview form were used as data collection tools. Study findings demonstrated that pre-service teachers generally had a positive attitude towards renewable energy sources. It was determined that training on renewable energy sources was important since there would be projects in classes in their future careers. Pre-service teachers stated that utilizing renewable energy sources would contribute to national economies and their development and the environment would be protected. Pre-service teachers demonstrated that Turkey was not a developed country in renewable energy use due to the lack of adequate technological infrastructure and awareness among the people.

ARE APPLICANTS FOR PROGRAMS IN ECONOMICS GOOD BOTH IN MATHEMATICS AND IN ENGLISH?

Petr DOUCEK
Faculty of Informatics and Statistics
University of Economics, Prague, Czech Republic
doucek@vse.cz

Milos MARYSKA
Faculty of Informatics and Statistics
University of Economics, Prague, Czech Republic
maryska@vse.cz

ABSTRACT
The article analyzes the correlation between the points that obtained foreign students applying for the undergraduate program at the faculties of the University of Economics in Prague (UEP). We analyzed the faculties that require a mathematics and English entrance exam. We were interested in foreign applicants only. The data for our analysis came from UEP information systems. We formulated a correlation model that we analyzed using the SPSS application. We concluded that the number of foreign students at the UEP during the analyzed period was between 1,400 and 1,600. We also proved a slightly positive correlation between the number of points obtained for the English and the Mathematics entrance exam. However, this correlation goes slightly downhill over time.

INTRODUCTION
The requirements for the Czech Republic's integration into European structures resulted in joining the Bologna Declaration (Stastna & Walterova, 2014), changing the university education system (Sperkova & Nedomova, 2015; Nedomova, Doucek & Maryška, 2015, Sigmund, 2015, Musil & Fischer, 2015, Flegl & Vltavska, 2013) and opening and making available the study programs of Czech universities to foreign students (OECD, 2009; Kuncova & Mulac, 2015). Foreign students can apply for foreign-language study programs that are usually in English, German or Russian. In addition, foreign students can apply for Czech study programs, which, however, requires to be fluent in the Czech language (vysokeskoly, 2010). These are foreign students who either have some kind of relationship to the Czech Republic (e.g. one of their parents is Czech) or come from Slavic countries where the language is so similar that they can become fluent in Czech in one year – these are usually students from Ukraine, Russia, Byelorussia, etc. or from Russian-speaking enclaves in the Central Asian republics of the former Soviet Union). A major group of foreign students comes from the Slovak Republic. These students are included in Czech study programs together with Czech students. The advantage of these study programs is that they can be expanded for courses in other languages, in particular in English. This is how Czech study programs can directly compete with the study programs in other EU Member States. The university education systems of the Czech Republic in the context of ICT education and it's results are described e.g. in the studies (Nedomova, Maryska & Doucek, 2014; Hanclova, Rozehnal, Ministr & Tvrdikova, 2015; Hanclova, 2015; Reznicek, Smutny, Kalina & Galba, 2013; Pavlicek, 2013). This article shows the knowledge of foreign students upon their admission to the UEP during 2010 – 2015.

PROBLEM FORMULATION
The presented analysis is based on scientific research as well as on the analysis of data about applicants that the UEP has been collecting for a long time. The target group of this analysis are foreign students who applied for study programs taught in the Czech language. This analysis also focuses on undergraduate study applications only. We wanted to know if the students, who obtained a higher number of points for their English entrance exam, also obtained a higher number of points for their mathematics entrance exam.

In compliance with our research goal, we formulated the following research question:

- Did the students, who obtained a higher number of points for their English entrance exam, also obtain a higher number of points for their mathematics entrance exam?

We also analyzed the trend in the number of foreign students at the UPE during the analyzed time period.
This research is a part of more comprehensive research studies analyzing the study throughput at the UEP and identifying narrow spots of the economics-oriented study programs and academic disciplines at the UEP.

For specification of the evaluation of results we state, for the sake of completeness, that there are six faculties on University of Economics, Prague at this time - Faculty of Finance and Accounting (FFA), Faculty of International

Relations (FIR), Faculty of Business Administration (FBA), Faculty of Informatics and Statistics (FIS), Faculty of Economics (FE), Faculty of Management (FM).

MATERIAL AND METHODS (DATA COLLECTION)

The UEP information system, which includes the complete data of applicants for all academic disciplines of all levels, was our basic source of data. This system includes both the basic identification data and the entrance exam results of the applicants. Our analysis focused only on foreign students applying for undergraduate study programs at the UPE during the analyzed time period. Foreign students are considered to be those who checked a citizenship other than the Czech citizenship in their applications. In view of the nature of the data collected about the applicants, we have no information about where they actually live.

We analyzed the data in compliance with Act No. 101/2000 of Coll., on the protection of personal data. Based on its provisions, we are obliged to anonymize the analyzed data and to process them in a way that makes it impossible to track down specific applicants or to obtain their personal data (date of birth, first name, last name, etc.). We analyzed individual years as well as the group of data as a whole.

GENERAL DATA CHARACTERISTICS

The UEP received 120.795 application forms since year 2010. 84.141 applicants were for undergraduate study, 36.651 were for graduate study and 1.490 for Doctoral studies. For the purpose of this paper we reject of doctoral studies and application forms from students with Czech nationality.

We obtained a total of 120,795 records of applications for the analyzed time period. Each record includes information about an application of one applicant. If an applicant applied for several study programs, he/she has several records. An applicant's basic attributes, which are anonymously analyzed, are as follows: gender, study program, academic discipline, faculty, type of study, entrance exam results and admission or non-admission.

The actual data analysis was performed in MS Excel and the model was formulated in the SPSS computer application. A total of 18,790 records of foreign students from all faculties and for the entire analyzed time period were analyzed to find out whether or not there was a correlation between mathematics entrance exam results and English entrance exam results.

RESULTS AND DISCUSSION

GENERAL OVERVIEW

The UEP received 120.795 application forms since year 2010. 84.141 applicants were for undergraduate study, 36.651 were for graduate study and 1.490 for Doctoral studies. For the purpose of this paper we reject of doctoral studies and application forms from students with Czech nationality.

We used a total of 18,790 records of mathematics and English entrance exam results. Of these, 1,002 records were invalid (e.g. an applicant took only one entrance exam or did not take any entrance exam). Therefore, we ended up having a total of 17,788 records, specifically 8,585 records of mathematics entrance exam results and 9,203 records of English entrance exam results, to analyze the correlation. The basic statistical characteristics of the entire group of analyzed data are provided in [Table 1].

Table 1: Basic statistical characteristics of the entire group of data

	N				Percentiles		
	Valid	Missing	Mean	Std. Deviation	25	50	75
MATH	8585	810	68.33	22.583	50.00	70.00	87.00
ENG	9203	192	72.72	15.730	63.00	75.00	85.00

The basic characteristics of data by year are provided in [Table 2].

Table 2: Basic statistical characteristics of the group of data by year

Year		N		Mean	Std. Deviation	Percentiles		
		Valid	Missing			25	50	75
2010	**MATH**	1350	85	74.85	21.034	60.00	80.00	90.00
	ENG	1400	35	73.99	15.961	64.00	78.00	86.00
2011	**MATH**	1469	112	69.13	21.440	55.00	70.00	85.00
	ENG	1534	47	71.92	16.227	62.00	74.00	84.00
2012	**MATH**	1568	188	70.52	22.231	55.00	75.00	90.00
	ENG	1722	34	72.22	15.715	63.00	74.00	84.00
2013	**MATH**	1503	127	64.53	22.580	49.00	65.00	82.00
	ENG	1593	37	72.82	15.936	63.00	75.00	85.00
2014	**MATH**	1385	114	63.86	22.902	47.00	65.00	81.00
	ENG	1481	18	72.21	15.300	63.00	74.00	84.00
2015	**MATH**	1310	184	67.16	23.503	50.00	70.00	85.00
	ENG	1473	21	73.36	15.120	64.00	76.00	85.00

[Table 2] in particular shows that the number of points obtained for both entrance exams has a slightly downhill trend and that the standard deviation for English entrance exams is going slightly down while the standard deviation for mathematics entrance exams is going slightly up.

ACCEPTED FOREIGN STUDENTS

The number of applications is also reflected in the number of admitted foreign students. The trend in the number of admitted foreign students in 2009 – 2015 is shown in [Figure 1]. [Figure 1] includes both data for the entire UEP, which is the trend line for individual years – the right y-axis, and data by faculty – the left y-axis.

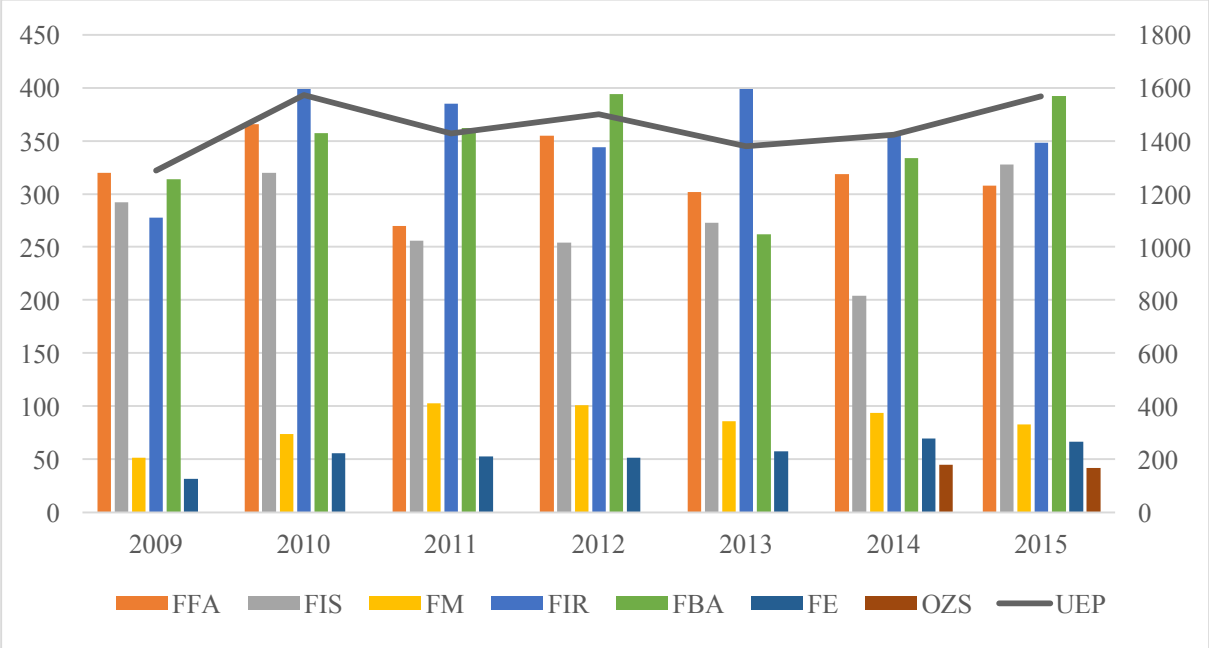


Figure 1: Trend in the number of admitted foreign students by faculty during the analyzed time period

Overall we can say that the number of foreign students admitted to the UPE during the analyzed time period is between 1,400 and 1,600 students a year and that, during the last two years, this number is getting closer to 1,600 students. Students have mostly been interested in studies at the FIR and the FBA that every year admit 300 to 400 applicants. These faculties are followed by the FFA and the FIS that show the biggest increase in foreign students during the analyzed time period. The FM and the FE, which admit less than 100 foreign students a year, show a marginal number of foreign students.

ANALYSIS OF FREQUENCY OF INSTANCIES AND QUARTIL ANALYSIS

We also analyzed the frequency of mathematics entrance exam results. We performed this analysis for each of the analyzed years but since the presentation space is limited, we only provide the frequency for the entire analyzed time period, i.e. mathematics entrance exam frequencies converted to the normal distribution [Figure 2].

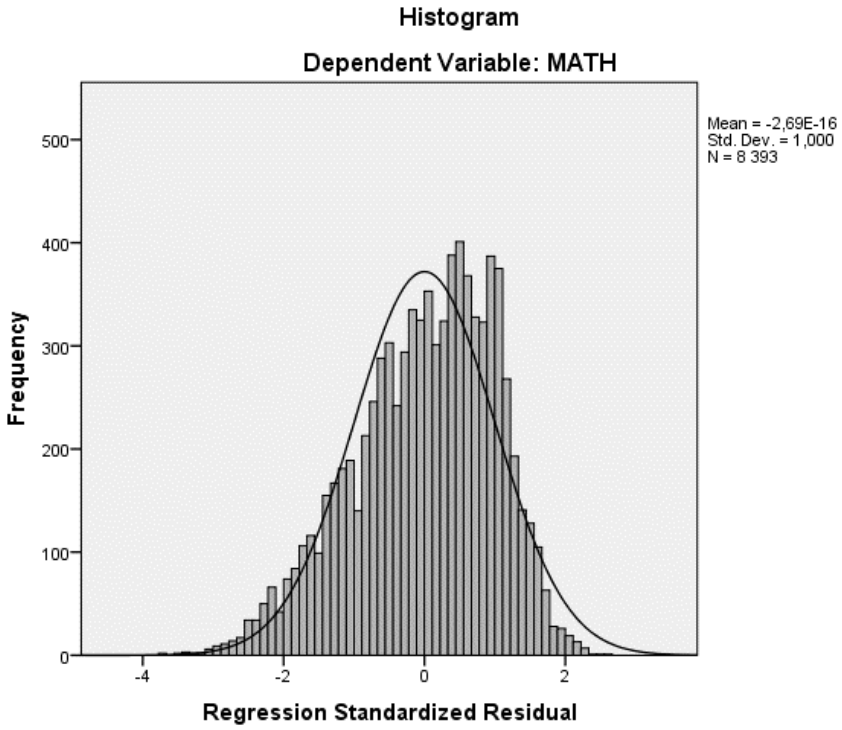


Figure 2: Mathematics entrance exam frequencies converted to the normal distribution

[Figure 2] shows that the final identified values have a slightly negatively skewed distribution and that the average value is practically zero ($-2.69*10^{-16}$). Two extremes with the value of 0.5 and 1 are not significant for the overall behavior of the data in the group. Therefore, the identified results rather well correspond to 0.1 of the normal distribution.

We used a similar approach to the quartile analysis of outliers for both entrance exam results for the entire analyzed time period. This analysis is based on the results provided in [Table 1]. The overall analysis results are shown in [Figure 3].

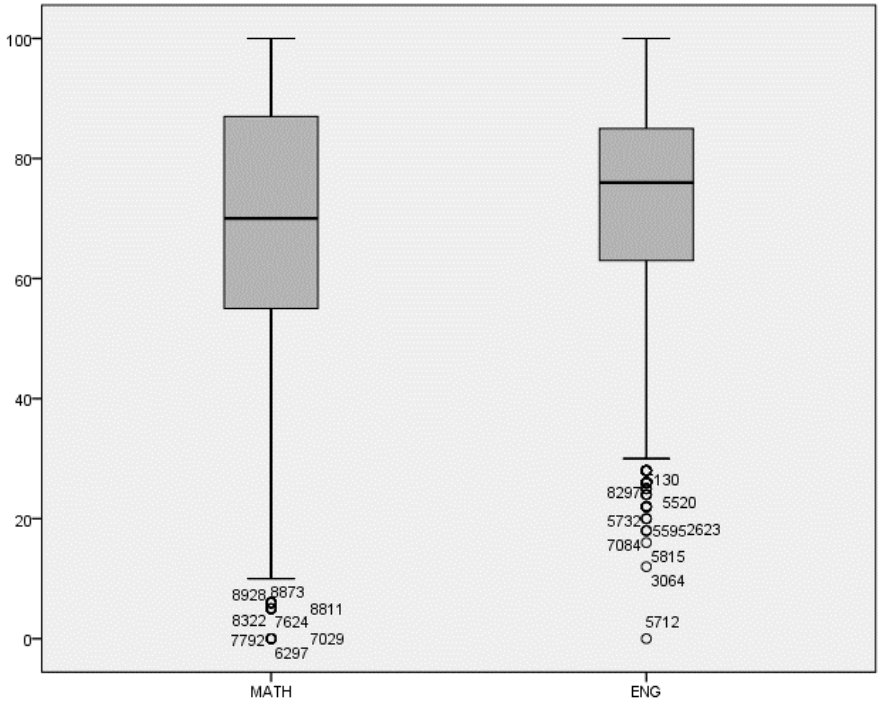


Figure 3: Quartile analysis and outlier analysis for the entire data sample

[Figure 3] shows that the entire sample of English entrance exams shows a higher median (75 points) with higher data consistency but a higher number of outliers. Obtained points are dispersed from 30 all the way to 100. Mathematics entrance exam results show much lower consistency with a much lower number of outliers. The median is 70 points. Obtained points are dispersed from 10 all the way up to maximum 100. Overall, we can say that English entrance exam results are more consistent than mathematics entrance exam results and that the median of English entrance exam results for the entire analyzed period is higher by five points that that of mathematics entrance exam results. Therefore, the 25% quartile and median is higher for English entrance exams than for mathematics entrance exams while the 75% quartile for mathematics entrance exams is higher by 2 points.

ANSWER ON RESEARCH QUESTION

The sample of the data sets contains 18.790 records and we applied the SPSS software for analyzing this set. First we formulated a model of dependency of mathematics entrance exam results on English entrance exam results.

MODEL FORMULATION

To explain the dependencies of the monitored variables we formulated the following model:

$$X_{MA} = \alpha + \beta X_{EN} + \varepsilon$$

Using the SPSS computer application, we estimated the coefficients of the designed model. The results both for individual years and for the entire analyzed time period are shown in [Table 3].

Table 3: Linear model characteristics estimates

Year	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
2010	1	0.494	0.244	0.243	18.302	1.934
2011	1	0.435	0.189	0.189	19.257	1.868
2012	1	0.438	0.192	0.191	19.939	1.837
2013	1	0.437	0.191	0.191	20.220	1.945
2014	1	0.415	0.172	0.171	20.807	1.882
2015	1	0.405	0.164	0.163	21.479	1.840
All years	1	0.436	0.190	0.190	20.288	1.833

Based on the results provided by the SPSS computer application, we can conclude the following:

- The percentage explaining (with a linear correlation) the behavior of the dependent variable of mathematics entrance exam results on English entrance exam results drops over time (the column "Adjusted R"). In 2010, it explained this behavior at 24.3 %, in 2015 only at 16.3%. The explanation percentage for the entire time period is 19 %. The downhill trend proves the growing variability of deviations from the linear regression line. The reason for this higher variability is the declining average number of points obtained for English and mathematics entrance exams.
- The correlation (the column "R") of the success rate in both entrance exams changes over time as well and has a downhill trend. In 2010 the correlation coefficient was 0.494 while in 2015 it was only 0.405. The correlation coefficient for the entire analyzed time period was 0.436. Overall, we can say that it is a moderate correlation.
- The Durbin-Watson coefficient (the column "Durbin-Watson"), which ranges around 2, documents that the residual component does not show auto-correlation of the first order.

The regression model was also estimated for the entire time period of 2010 – 2015, using interconnected regression, and the results are provided in [Table 4].

Since regression model coefficients change over time, we can conclude the following:

- The intercept α has very similar values during the time period of 2010 – 2012 (25.902 – 25.444). In the following years (2013 - 2015), this coefficient was between 20.272 and 19.479. Its average value during the entire analyzed time period was 22.445. This intercept represents the distance from the y-axis at the beginning of the regression line.
- The coefficient β shows the correlation between one extra point for an English entrance exam and the number of points obtained for a mathematics entrance exam (the second item in column "B" in [Table 4 and Table 5]). It was 0.66 point in 2010 and 0.650 point in 2015. The average value was 0.632.

Table 4: Estimated regression model coefficients by year

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
2010	1	(Constant)	25.902	2.441		10.612	.000
		ENG	.660	.032	.494	20.564	.000
2011	1	(Constant)	26.827	2.396		11.198	.000
		ENG	.588	.032	.435	18.211	.000
2012	1	(Constant)	25.444	2.425		10.493	.000
		ENG	.622	.033	.438	19.072	.000
2013	1	(Constant)	20.272	2.447		8.284	.000
		ENG	.611	.033	.437	18.600	.000
2014	1	(Constant)	19.122	2.728		7.010	.000
		ENG	.626	.037	.415	16.844	.000
2015	1	(Constant)	19.479	3.065		6.354	.000
		ENG	.650	.041	.405	15.878	.000

Estimated regression model coefficients for the entire time period are shown in [Table 5].

Table 5: Estimated regression model coefficients for the entire time period

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	22.445	1.062		21.131	.000
	ENG	.632	.014	.436	44.331	.000

For our estimated regression line coefficients, the intercept was α=22.445 and the slope was β=0.632 (column B) for the entire time period. The slope coefficient shows that when an English entrance exam result goes up by one

point, a mathematics entrance exam result goes up by 0.632 point on average. **This confirms a positive answer to our research question.**

The identified data show the correlation provided in [Figure 4].

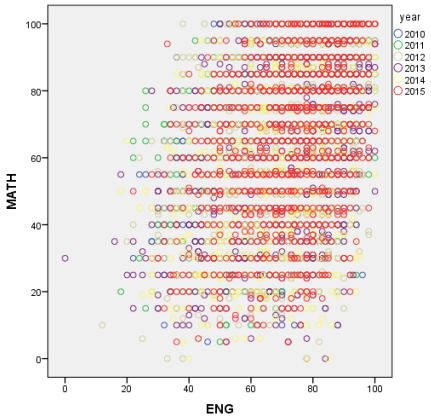


Figure 4: Relationship between the points obtained for English and mathematics entrance exams for the entire data sample

[Figure 4] shows a certain correlation between the two analyzed variables. This correlation is not very strong (if the correlation were strong, the values would be on a diagonal), yet provable - 1:0.632 on average.

CONCLUSION

This paper is a result of a long term project realized at the University of Economics, Prague that helps UEP answer questions like:

- Does exists relations between results from entrance exams and results from exams in a standard study?
- Does exists relations between results from entrance exams and results from exams in a standard study based on the nationality, type of high school etc.?
- What is passableness in the study?

By analyzing the six-year time series, we discovered that 1,400 to 1,600 foreign students are admitted to the UPE and that their number kept growing during the past three years. Foreign students mostly apply to the FIR and the FBA.

The analysis of mathematics entrance test results identified a slightly negatively skewed normal distribution and a practically zero average value ($-2.69*10^{-16}$). The quantile analysis proved higher data consistency with respect to English entrance exam results and lower data consistency with respect to mathematics entrance exam results. The median of the points obtained for English entrance exams is 75 and the median of the points obtained for mathematics entrance exams is 70.

By analyzing the dependency of the points obtained for mathematics entrance exams on English entrance exam results, we discovered that the percentage explaining the independent variable with the dependent variable drops over time. The analysis of the correlation of the success rate in both entrance exams provided a similar conclusion.

Our formulated linear regression model proved a correlation between English entrance exam results and mathematics entrance exam results of the foreign students who took these entrance exams at the UEP. The regression model shows that when an English entrance exam result goes up by one point, a mathematics entrance exam result goes up by 0.632 point on average for the entire analyzed time period.

Thanks to this research and this paper we find out plenty of new knowledge about structure of applicants for study, their knowledge and differences based on the nationality, type of high school etc. Very important information is success rate based on the study subjects, years of study etc.

ACKNOWLEDGEMENTS

Paper was processed with contribution of long term institutional support of research activities by Faculty of Informatics and Statistics, University of Economics, Prague (IP 400040).

REFERENCES

Flegl, M. & Vltavska, K. (2013). Efficiency at Faculties of Economics in the Czech Public Higher Education Institutions: Two Different Approaches. In *International Education Studies*, vol. 6, no. 10, (pp. 1–12). Canadian Center of Science and Education. ISSN 1913-9020.

Hanclova, J. (2015). Comparison of production performance in information and communication sectors in the EU selected countries. In *IDIMT 2015 - Information Technology and Society - Interaction and Interdependence - 23rd Interdisciplinary Information Management Talks* (pp. 111-118). Linz: Trauner Verlag Universität. ISBN 978-3-99033-395-2.

Hanclova, J., Rozehnal, P., Ministr, J. & Tvrdikova, M. (2015). The Determinants of IT Adoption in SMEs in the Czech-Polish Border Areas. In *Information Technology for Development*, vol. 21, no. 3, (pp. 426-444). Taylor & Francis Group. ISSN 0268-1102.

Kuncova, M. & Mulac, P. (2015). Higher professional education funding systems in selected european countries and in the czech republic. In *Turkish Online Journal of Educational Technology*, *Special Issue for INTE* 2015 (pp. 293-300). ISSN 1303 – 6521.

Musil, P. & Fischer, J. (2015). Měření výstupu vzdělávacích služeb. In *Politická ekonomie*, vol. 63, no. 2, (pp. 167–184). University of Economics, Prague. ISSN 0032-3233.

Nedomova, L., Doucek, P. & Maryška, M. (2015). ICT professionals in the Czech Economy, structural changes in human resources. *Proceedings of the 11th International Conference on Strategic Management and Its Support by Information Systems 2015* (pp. 419-430). VŠB-Technical University of Ostrava, Faculty of Ecomnomics, Ostrava. ISBN 978-80-248-3741-3.

Nedomova, L., Maryska, M. & Doucek, P. (2014). The enterprise architect role - And its mission in corporate information and communication technology - A Czech study. In *Journal of Applied Economic Sciences*, vol. 9, no. 1, (pp. 88-100). Spiru Haret University. ISSN 1843-6110.

OECD (2009). *OECD Reviews of Tertiary Education: Czech Republic*. OECD publishing. Retrieved 12 April, 2016 from http://www.oecd-ilibrary.org/education/oecd-reviews-of-tertiary-education-czech-republic-2009_9789264049079-en.

Pavlicek, A. (2013). Possibities of Social Networks in Education. *Proceedings of the 10th International Conference on Strategic Management and Its Support by Information Systems 2013* (pp. 147–154). VŠB-Technical University of Ostrava, Faculty of Ecomnomics, Ostrava. ISBN 978-80-248-3096-4.

Sigmund, T. (2015). Vztah etického a ekonomického chování. In *Politická ekonomie*, vol. 63, no. 2, (pp. 223–243). University of Economics, Prague. ISSN 0032-3233.

Sperkova, L. & Nedomova, L. (2015). Are the entrance exams results of applicants to university in english and german languages equally good? In *Turkish Online Journal of Educational Technology, Special Issue for INTE 2015* (pp. 44-50). ISSN 2146-7242.

Stastna, V. & Walterova, E. (2014). The Bologna Process in the Czech Republic. In *The Bologna Process in Central and Eastern Europe* (pp 83-114). Springer Fachmedien Wiesbaden. ISBN 978-3-658-02333-1. DOI: 10.1007/978-3-658-02333-1_5.

Reznicek, V., Smutny, Z., Kalina, J. & Galba, A. (2013). Knowledge sharing as a problem of the individual nature of knowledge. *Proceedings of the European Conference on Knowledge Management* (pp. 920-925). Kaunas: University of Technology. ISBN 978-1-909507-38-8.

Vysokeskoly. (2010). Podminky studia na vysokych skolach v Ceske republice. Retrieved 12 April, 2016 from. http://www.vysokeskoly.cz/clanek/podminky-studia-na-vysokych-skolach-v-ceske-republice.

ATTITUDES OF CANDIDATE TEACHERS IN THE MODERN EDUCATION SYSTEM TOWARDS THE COMPUTER TECHNOLOGY LESSON

Assist. Prof. Dr. Emete GERÇEL, Azmiye YINAL
Near East University (www.neu.edu.tr) Atatürk Faculty of Education, Mersin 10 Turkey.
European University of Lefke (info@eul.edu.tr), TRNC Mersin 10 Turkey
e-mails: emetey@hotmail.com, azmiye.dns13@gmail.com

ABSTRACT
The teachers, who will raise the manpower needed by the society, should be raised in accordance with the modern teacher standards. The change in the social needs depending o the science and technology have obliged the teachers to keep up with this change. The objective of modern education system is to raise individuals who search the ways to access the information, know where and how to used the knowledge and have critical thinking. This is possible with the qualified teachers that continuously improve themselves pursuant to the science and technology. This study is developed in order to measure the attitudes of candidate teachers in taking Computer Technology course. This study has a screening model and is performed with the total number of 298 candidate teachers. Quantitative research is used for this study and it is a descriptive study with "Relational Screening" model among the general screening models. Quantitative research methods were used for the study with 2-dimensional scale. First dimension is positive attitude and second is negative attitudes. The positive attitudes under the first dimension have two sub-categories. The sub-dimensions given under the positive attitude of first dimension cover the eagerness to learn and interest to the lesson. In accordance with the answers given by the candidate teachers to the scale, the attitudes of candidate teachers towards the Computer Technologies lesson within the two dimensions of scale were analysed in terms of gender, age, department and class and the outcome was found as there is no significant difference.
Key words: Candidate Teachers, Computer Technology, Learning and Attitude

INTRODUCTION

The 21st century that we live in has been developing in the field of technology and considered as the information era. A new technology development stands out every day. The technology use has become inevitable for people. Therefore, the fast developments of technology in the world have reflections on the education system and affect the learning and teaching activities.

The efficient use of information technologies like cell phone, internet, computer and phones by the individuals from every age group particularly by the adolescents and young people as a socialisation tool has been a findings of various studies. Especially in our country that has a dense young population, the use of internet is widely observed in the daily lives (Gerçel, 2016).

Technology, computers and new developments and improvements in the communication cause change in the teaching perceptions and brings the use of new techniques and methods. New concepts and technologies in the "Information Era" such as computers, multimedia, audio, video, animation and developing internet technologies have become a part of education and training (Bodie, 1998).

Today, with the existing problems in the education, the provision of quality education to wide masses is possible with the education technologies. Hence, the facilities of technology should be excessively used. The development and changes in technology affect the functions of education. The technological developments that can be considered as an outcome of education process changes the structure of education process and introduce a different perspective into education. Therefore, the place of technology within the education and training practices has become increasingly permanent and more significant.

The technological developments changing in every aspect of society have an impact on the every side of life, and with such change, the needs to fulfil the expectations finds its way in more systematic education approaches. The

exchange of information within the society is also affected by the fast change in the technology as well as the educational institutions. The education and technology are two main elements that have a vital role in making the life of an individual more efficient. Both elements have been two main tools reached by the people in the efforts to e dominant in natural and social environment (Alkan, 1998). Technology is a field covering all social and economic activities and organisations foreseeing the realization of technical knowledge.

In order to make learning and teaching environments within the education more effective, the individuals should participate the lessons with technology. The use of computers in the all activities related with the learning teaching at schools can be defined as "computer technology assisted education" (Demirel et.al, 2001: 116). The society and individuals should gain knowledge, attitudes and habits that would answer their own and social needs in order to follow the developing technology as an individual and society. Thus, a systematic education appraising the in-class instruments that comprise individual power and references that are out-of the power among individuals, together with the teachers that are the main element of education during the learning and teaching process of education.

The computers have positively affected the education systems that have traditional structures. The computers have led social changes in the society, education and culture (İşman, 2001). The computer-assisted education has various aims. The aims consist of maximize the motivation of students to the lesson, improving the scientific thinking ability of students, contributing on self-learning of students, leading the students to generate hypotheses and facilitating the students to solve the problems in a logical way.

One of the principles taken as a basis in teaching is to reach as many senses of students in the transmission of knowledge, skill and behaviours such as attitudes. The rationale behind is that the more sense is introduced into the teaching environment, the more the teacher will be more permanent and effective. The teaching materials currently used in schools such as books, chalk, black board are old technology products. The teaching in the classrooms using these materials are teacher-oriented teaching, while the target is to have a student-oriented education. In order to accomplish this target, the teaching materials produced by the developing technology should be introduced into the student environment.

The computer technology in education means to systematically using the lesson related tools together with teacher, student, process and methods. The most important aspect in doing this is to remember that technology use in education is a part of "computer technology in education". This definition clearly shows the position of computer technologies lesson within the education.

METHOD

Quantitative research is used for this study and it is a descriptive study with "Relational Screening" model among the general screening models. The observation and recording aspect of science, identification of relation between events and generalization on the basis of controlled unchanged relations are included in the screening model; hence the descriptive function of science is in the forefront (Yıldırım, 1966). The research aims to identify the attitudes of "Candidate Teachers in Learning the Computer Technologies Lesson and Their Negative Attitudes and Interest To the Lesson" and find out the views of candidate teachers. The questionnaire was prepared and developed in order to perform case study towards the identification of attitudes of candidate teachers for the Computer Technology lesson.

Quantitative research model is used in the study for the questionnaire and the analysis was performed whether the attitudes of candidate teachers change depending on the questions comprising four socio-demographical questions as gender, age group, class and department. Therefore, this study can also be called as Comparative Case Study. The questionnaire used in study and performed on the candidate teachers is a 5-point likert scale while the study uses quantitative research methods and the scale has two dimensions. The first dimension of questionnaire has two sub-categories as eagerness to learn and interest to the lesson in order to identify the attitudes; and the second dimension includes statements developed to measure the negative attitude levels towards the Computer Technology lesson.

Population – Sample

The population of this research is comprised of the candidate teachers who are at the I, II and III. Year of the Department of Psychological Counselling and Guidance, Classroom Teaching and Preschool Teaching in the Near East University, Turkish Republic of Northern Cyprus.

The research was conducted through accidental sampling. The sample is the small set selected from a specific population in accordance with certain rules and considered as sufficient to represent the population. The researches are mainly performed on the sample sets and the results are generalized to the relevant populations (Karasar, 2005). The sample is a part of a population and very significant in terms of research and statistics. The most important aspect of sample is that it is objective and representative (Kaptan, 1983).

298 students as candidate teachers are chosen for the sample of research among 500-people population via simple random sampling with 95% confidence level and 5% margin of error into the sample of research. ın the simple random sampling, each component of population has the equal chance to be a part of sample. Therefore, the weight to be given each component is same for the calculations (Arıkan, 2004).

Data Collection Tool

The scale form developed by the researchers was used as the data collection tool for this research. The scale form is comprised of four demographical questions as gender, age group, class and department, and the literature screening was performed in order to identify the attitudes of Candidate Teachers towards the Computer Technology lesson through the review of statements including the attitudes and the attitude scale draft was prepared for the Computer Technology lesson (Öztürk, H., & Ballıoğlu, 2014; Özkal, Güngör & Çetingöz, 2004; Ozmenteş, 2006; Duatepe, & Çilesiz, 1999; Karaca, 2006; Orel, Zerey, & Töret, 2004; Temel, 2000; Şengören, & Kavcar, 2006; Demir, 2010).

Regarding the compliance of scale to its aim, clarity and statement appropriateness, a group of eight experts was consulted. Upon the recommendation that the candidate teachers would not answer the 13 items among 42 about the behaviours of candidate teachers, those were deleted and instead 3 articles were added. The scale was in the end developed with 32 items. Additionally, a pilot application was conducted on 40 people and the students were asked to state the items that they did not understand and as an outcome, the scale was considered as sufficient.

Table 1: Score Limits of Five Likert Scale

Weights	Limits	*Perception-View*
1	1.00-1.79	Strongly Disagree
2	1.80-2.59	Disagree
3	2.60- 3.39	Neither Agree Nor Disagree
4	3.40 -4.19	Agree
5	4.20- 5.00	Strongly Agree

As can be seen from the Table 1, the score averages of all students were calculated in the scale.

Internal Validity

For this research, the aim was to develop a credible and valid likert type attitude scale in order to identify the attitudes of candidate teachers towards the Computer Technology lesson. Therefore, upon the recommendation that the candidate teachers would not answer the 13 items among 42 about the behaviours of candidate teachers, those were deleted and instead 3 articles were added. The scale was in the end developed with 32 items. Additionally, a pilot application was conducted on 40 people and the students were asked to state the items that they did not understand and as an outcome, the scale was considered as sufficient. Afterwards, the preliminary trial form was applied to the working group following the preliminary practice. Then the structure validity activities were started. As a result of factor analysis conducted by main components analysis and varimax rotation, the statements of 1, 5, 9, 13, 15, 17, 18, 21 and 31 with the factor weights less than 0,4 were omitted so that the scale had 23 rather than 32 items. In accordance with the factor analysis results, there are 2 sub-dimensions in the scale of 23 items as positive attitude (eagerness to learn, interest to the lesson) and negative attitude. Moreover, the Cronbach Alpha internal validity coefficient of scale was found as 0,89. Hence, the scale can be considered as it has a good credibility coefficient.

The descriptive factor analysis is used for the structure validity of the Scale for the Attitudes of Candidate Teachers Towards the Computer Technology Lesson.
The Kaiser-Meyer-Olkin (KMO) sample measure value of scale was found as 0,86. Due to high KMO coefficient, the size of selected sample size is considered as appropriate for factor analysis. KMO test is a figure related with the compatibility of sample size. When KMO coefficient is close to 1, the data are considered as compatible for analysis and if the coefficient is 1, it means that there is a perfect match. This result can be acknowledged as sufficient on the basis of literature and expert views (Büyüköztürk, 2006). Moreover the result of Barlett Sphericity test is found as significant ($p=0,00<0,05$). Following such findings, the scale is observed as compatible for factor analysis.

In line with these results, the sub-dimensions of scale are as follows.

Table 2: Items related with the Attitude Scale Sub-Dimensions

Sub-Dimensions	Questions
Eagerness to Learn (6 statements)	Q29, Q 30, Q 22, Q 24, Q 23, Q 32
Negative Attitude (9 statements)	Q 26, Q 25, Q S27, Q 28, Q 3, Q 19, Q 6, Q 20, Q 2
Interest to the Lesson (8 statements)	Q 7, Q 14, Q 8, Q 12, Q 10, Q 16, Q 11, Q 4

Table 3: Attitude Scale

Statements	Eagerness to Learn	Negative Attitude	Interest to the
29. I fulfil all tasks during the Computer Technology lesson.			
30. I regularly attend the Computer Technology lesson.			
22. I like to talk about the events and activities happened during the Computer Technology lesson.			
23. Computer Technology lesson motivates me to read the books about computer technologies.			
24. Computer Technologies lesson positively change my perception to the technology.			
32.I believe that Computer Technologies lesson will be beneficial in the future.			
26. Computer Technologies lesson is a waste of time.			
25. I would love the school if there were no Computer Technologies lesson.			
27. I feel bored during the Computer Technologies lesson.			
28. I wish not to have any Computer Technologies lesson in the curriculum.			
3. I prefer any other lesson to the Computer Technologies lesson.			
19. I feel tired when I need to study for the Computer Technologies lesson.			
6.I would not attend to Computer Technologies lesson if there were no compulsory attendance.			
20. I am never successful in Computer Technologies lesson.			
2.I think that the time allocated for the Computer Technologies lesson should be less.			
7.I wish that all lessons like Computer Technologies lesson			
14. I look forward to Computer Technologies lesson.			
8. I wish to have longer Computer Technologies lesson.			
12. Learning new topics in Computer Technologies lesson make me excited.			
10.Teachers should get Computer Technologies lesson in order to graduate.			
16. I find the references recommended during the Computer Technologies lesson and read the recommended books.			
11. I have an interest in the subjects of Computer Technologies lesson.			
4. I like Computer Technologies lesson.			

Credibility

The internal validity test was performed for the credibility of scale. In accordance with the internal validity results obtained after the credibility analysis, the Cronbach Alpha coefficient of the 23-item scale was identified as 0,89. The Cronbach Alpha values for the sub-dimension of scale are 0,86 for the eagerness to learn, 0,81 for the negative attitude and 0,81 for the interest to the lesson.

Data Collection Process

During the data collection process, the candidate teachers in the Near East University located in Nicosia, Turkish Republic of Northern Cyprus were interviewed. After obtaining the required permits for the questionnaires, the questionnaires were performed during the designated lessons. Before answering the data collection tools, the candidate teachers were informed regarding the aim of scale and how to answer it, and the confidentiality that the answers would only be read by the researchers were shared with the candidate teachers. The data of study was collected during the fall semester of 2015-2016 academic year.

Data Analysis

The data obtained through the questionnaire were transferred to the computer and editing process was performed for the errors. During the editing process, the errors occurred during the transfer of questionnaires to the computer were identified, the related questionnaire was found and the error was eliminated by re-entering the answers. After the editing, there was no wrong or missing value in any data set.

For the statistical analysis of data, Statistical Package for the Social Sciences (SPSS) 20.0 for Windows Evaluation version was used.

The frequency tables were used in order to identify the distribution of candidate teachers that are under the scope of research in terms of their gender, age group, class and departments.

Kolmogrov-Smirnov (K-S) test as one of the normality tests was applied for the determination of hypothesis tests to be used in the statistical analysis whether the data set shows normal distribution.

Upon the result of Kolmogrov-Sminov test, the total scores of scale was found to show normal distribution and the parametric hypothesis tests were used in the analysis. In case the independent variables are two then the Student t-test, one of the parametric hypothesis tests, was used for the comparison of independent and dependent variables, and when they are more than two, then Variance Analysis (Anova) was used.

The quantitative research methods were used and the scale has two dimensions. The first dimension is positive attitudes while the second is negative attitudes. The positive attitude under the first dimension has two sub-categories as eagerness to learn and interest to the lesson.

FINDINGS AND INTERPRETATION

This part aims to present the data generated through the data collection tools, findings from the analysis and views of participants.

Table 4 below gives the distribution of *candidate teachers under the scope of this study in accordance with the descriptive socio-demographical characteristics as gender, age group, class and departments,* and the views of participants were evaluated.

Table 4: Distribution of Candidate Teachers Based on Their Socio-Demographic Characteristics

	Number	Percentage
Gender		
Female	148	49,66
Male	150	50,34
Age Group		
Between 17-22	107	35,91
Between 23-28	163	54,70
Between 29-34	28	9,40
Class		
I.	40	13,42
II.	142	47,65
III.	116	38,93
Department		
PCG	141	47,32
Classroom Teaching	86	28,86
Pre-School Teaching	71	22,15

The candidate teacher participants of research are 49,66% female and 50,34% male. 35,91% are between 17-22, 54,70% 23-28 and 9,40% 29-34. In terms of the class years of candidate teachers; 13,42% of them are at I. year, 47,65% II. year and 38,93% III.year.47,32% are from the Department of Psychological Counselling and Guidance, 28,86% Classroom Teaching and 22,15% Pre-School Teaching.

Findings and Interpretation Regarding the First Sub Problem

The first sub-problem of the research was determined as "*what are the eagerness of candidate teachers to learn the computer technologies lesson and their views regarding the positive and negative attitudes towards the lesson?"* Table 5 assesses the views of students, who answered the questionnaire.

Table 5 is comprised of the average score out of the total score of candidate teachers from the general and sub-dimensions of attitude scale regarding the computer technologies lesson, standard deviation, statistics as minimum and maximum.

Table 5: Descriptive Statistics of Scores by the Candidate Teachers from the Attitude Scale Towards the Computer Technologies Lesson

Sub-Dimensions	N	$\overline{X}$	s	Min	Max
Eagerness to Learn (6 statements)	298	23,65	5,61	6	30
Negative Attitude (9 statements)	298	34,46	7,53	12	45
Interest to the Lesson (8 statements)	298	28,73	7,02	8	40
Scale Total (23 statements)	298	86,84	16,23	40	115

Pursuant to Table 5, the average of total scores from the sub-dimension of eagerness to learn under the scale for the attitudes of candidate teachers towards the computer technologies is 23,65±5,61'dir. The candidate teachers got minimum 6 points and maximum 30 points from this sub-dimension. The item average of candidate teachers for the sub-dimension of eagerness to learn is 3,94±0,93. The teachers were generally answers the statements given under this sub-dimension as agree, and gave positive view accordingly.

The average of total score for the candidate teachers from the sub-dimension of negative attitude is 34,46±7,53 and minimum 9 and maximum 45 points. The item average of negative attitude scale is 3,83±84. Generally the candidate teachers replied the statements under this sub-dimension as disagree. In other words, the candidate teachers do not agree with the negative statements given under this sub-dimension and in a way gave positive view related with the computer technologies lesson.

The average score of the sub-dimension of interest to the computer technologies lesson is 28,73±7,02. The candidate teachers got minimum and maximum 40 points from this sub-dimension. The item average of interest to the lesson sub-dimension is 3,59±0,88, and the candidate teachers gave positive view to the statements given under this sub-dimension.

The total score average out of the general scale for the attitudes of candidate teachers towards the computer technologies lesson is 86,84±16,23 and the minimum total score is 23 and maximum is 115. The item average to the 23 statements given under the scale is 3,78±0,70. In the general sense, the students answered the positive statements as agree and negative statements as disagree.

Findings and Interpretation Regarding Second Sub-Problem

The second sub-problem of the research is identified as "*Is there any significant difference among the candidate teachers between the eagerness to learn the computer technologies lesson in terms of their gender and positive and negative attitudes towards the lesson?"* Table 6 below evaluates the views of students.

The comparison of total scores for the candidate teachers in terms of the sub-dimensions that their eagerness to learn, negative attitude and interest to the lesson under the scale of attitudes towards the computer technologies on the basis of gender is given below.

Table 6: Score Comparison of Candidate Teachers Obtained from the Attitude Scale Towards the Computer Technologies Lesson

Sub-Dimensions	Gender	n	X	s	t	p
Eagerness to Learn	Female	148	23,65	5,98	0,00	1,00
	Male	150	23,64	5,23		
Negative Attitude	Female	148	34,14	7,80	-0,73	0,47
	Male	150	34,78	7,26		
Interest to the Lesson	Female	148	28,48	7,14	-0,61	0,54
	Male	150	28,98	6,91		
Scale Total	Female	148	86,27	16,36	-0,60	0,55
	Male	150	87,41	16,14		

Pursuant to the t-test results given in Table 6, the female candidate teachers under the scope of this research obtained an average of 23,65±5,98 points from the eagerness to learn sub-dimension whereas male candidate teachers obtained 23,64±5,23 points. There is no statistically significant difference between the total scores obtained by male and female candidate teachers from the eagerness to learn sub-dimension (p=1,00 >0,05). The gender factor has no influence on the statements given under the sub-dimension of eagerness to learn given under the scale of attitude towards the computer technologies lesson.

In accordance with the total scores obtained from the sub-dimension of negative attitudes of female and male candidate teachers, the average for the female teachers is 34,14±7,80 while male candidate teachers got an average of 34,78±7,26. There is no statistically significant difference between the total scores obtained by male and female candidate teachers from the negative attitudes sub-dimension (p=0,47 >0,05). The views of female and male candidate teachers regarding the statements under this sub-dimension are similar.

The female candidate teachers obtained and average of 28,48±7,14 points from the sub-dimension of interest to the computer technologies lesson, whereas male candidate teachers got 28,98±6,91 points. There is no statistically significant difference between the total scores obtained by male and female candidate teachers from the interest to the lesson sub-dimension (p=0,54>0,05).

The difference between the total scores obtained from the attitude scale in general towards the computer technologies lesson on the basis of gender is not statistically significant; and both female ($\bar{x} = 86,27$) and male ($\bar{x} = 87,41$) candidate teachers were found to have similar views regarding the scale in general.

Findings and Interpretation Regarding Third Sub-Problem

The third sub-problem of the research was given, as "*is there ant significant difference between the positive and negative attitudes of candidate teachers towards their eagerness to learn the computer technologies lesson and their interest to the lesson on the basis of their age".* Table 7 below evaluates the views of students.

The ANOVA results concerning the comparison of total scores for the candidate teachers in terms of the sub-dimensions that their eagerness to learn, negative attitude and interest to the lesson under the scale of attitudes towards the computer technologies on the basis of age group, and the scale in general are given below.

Table 7: Score Comparison of Candidate Teachers Obtained from the Attitude Scale Towards the Computer Technologies Lesson On the Basis of Their Age Groups

Sub-Dimensions	Gender	n	X	s	F	p
Eagerness to Learn	Between 17-22	107	24,13	5,06	1,28	0,28
	Between 23-28	163	23,57	5,86		
	Between 29-34	28	22,25	6,06		
Negative Attitude	Between 17-22	107	34,57	7,35	2,21	0,11
	Between 23-28	163	34,88	7,32		
	Between 29-34	28	31,61	8,96		
Interest to the Lesson	Between 17-22	107	28,90	6,78	0,14	0,87
	Between 23-28	163	28,72	6,97		
	Between 29-34	28	28,18	8,35		
Scale Total	Between 17-22	107	87,60	14,89	1,33	0,27
	Between 23-28	158	86,97	16,59		
	Between 29-34	28	82,04	19,63		

In accordance with the ANOVA results from the comparison of eagerness to learn sub-dimension among the candidate teachers on the basis of age group, there is no statistically significant difference between the total scores obtained by male and female candidate teachers accordingly (p=0,28>0,05). The average scores of candidate teachers for the eagerness to learn sub-dimension between the age group of 17-22 24,13±5,06 points, 23,7±5,86 between 23-28 and 22,25±6,06 between 29-34. Although the scores for the eagerness to learn scores of young candidate teachers are high, they are not statistically significant.

The candidate teachers under the scope of this research with the age group of 17-22 have obtained an average of 24,57±7,35 from the sub-dimension of negative attitude, the age group of 23-28 an average of 34,88±7,32 and the age group of 29-34, 31,61±8,96. The difference between the average scores taken from the sub-dimension of negative attitude on the basis of age group of the candidate teachers is not statistically significant (p=0,11>0,05). Although the total scores of candidate teachers from the age group of 29-34 are low compared with the candidate teachers from the other age groups, the difference is not statistically significant.

There is no statistically significant difference between the total scores of the candidate teachers of age groups 17-22 ($\bar{x} = 28{,}90$), 23-28 ($\bar{x} = 28{,}72$) and 29-34 ($\bar{x} = 28{,}18$) from the sub-dimension of eagerness to learn towards the computer technologies lesson (p=0,87>0,05).

In accordance with ANOVA results given in Table 7, there is not any statistically significant difference between the total scores of candidate teachers towards the computer technologies lesson obtained from the attitude scale on the basis of their age groups (p=0,27>0,05). Regardless the age groups, the students participated to the research got similar scores and answered to the positive statements as agree and disagree to the negative statements.

Findings and Interpretation Regarding Fourth Sub-Problem

The fourth sub-problem of the research was given, as "*is there ant significant difference between the positive and negative attitudes of candidate teachers towards their eagerness to learn the computer technologies lesson and their interest to the lesson on the basis of their class".* Table 8 below evaluates the views of students.

Table 8: Score Comparison of Candidate Teachers Obtained from the Attitude Scale Towards the Computer Technologies Lesson On the Basis of Their Class

Sub-Dimensions	Class	n	X	s	F	p
Eagerness to Learn	I	40	24,68	4,26	1,99	0,14
	II	142	23,00	6,04		
	III	116	24,09	5,40		
Negative Attitude	I	40	34,43	7,57	0,54	0,59
	II	142	34,91	7,42		
	III	116	33,93	7,67		
Interest to the Lesson	I	40	29,30	7,10	0,15	0,86
	II	142	28,65	6,70		
	III	116	28,63	7,42		
Scale Total	I	40	88,40	14,46	0,21	0,81
	II	142	86,56	16,92		
	III	116	86,65	16,04		

The ANOVA results regarding the comparison of total scores of candidate teachers obtained from the attitude scale in general and its sub-dimensions towards the computer technologies sub-dimensions on the basis of their class are given in Table 8.

The candidate teachers, who are on I. class got 24,68±4,26 from the sub-dimension of eagerness to learn, II. class 23,00±6,04 and III. class 24,09±5,40. The difference between the average scores taken from the sub-dimension of eagerness to learn on the basis of classes of the candidate teachers is not statistically significant (p=0,14>0,05).

The difference between the average scores taken from the sub-dimension of negative attitude on the basis of classes of the candidate teachers is not statistically significant (p=0,59>0,05). The candidate teachers from I. class got an average of 34,43±7,57 from the sub-dimension of negative attitude, II. class an average of 34,91±7,42 and III. Class 33,93±7,67. Regardless the classes of candidate teachers, they have given similar answers to the sub-dimension of negative attitude. In other words, the candidate teachers in general answered the statements under this sub-dimension as “disagree”.

The candidate teachers from I. class obtained an average of 29,30±7,10 from the sub-dimension of interest to the computer technologies lesson, II. Class 28,65±6,70 and III. Class 28,63±7,42. There is not any statistically significant difference between the total scores from the sub-dimension of interest to the lesson among the candidate teachers (p=0,86>0,05). The candidate teachers from first, second and third class answered the statements to the sub-dimension of interest to the computer technologies lesson as agree so there is a high interest towards the lesson.

There is not any statistically significant difference between the total scores obtained from the attitude scale based on the class years among the candidate teachers. Although the total score of I. year candidate teachers ($\bar{x} = 88,40$) is higher than II. ($\bar{x} = 86,56$) And III. Class candidate teachers ($\bar{x} = 86,65$), this difference is not significant.

Findings and Interpretation Regarding Fifth Sub-Problem

The fifth sub-problem of research was given as “*is there ant significant difference between the eagerness to learn the computer technologies lesson and positive and negative attitudes of candidate teachers towards the lesson on the basis of their departments?*” Table 9 below evaluates the views of students.

Table 9 shows the ANOVA results concerning the comparison of scores obtained by the candidate teachers in the departments of Psychological Counselling and Guidance, Classroom Teaching and Preschool Teaching from the sub-dimensions of attitude scale on computer technologies as the eagerness to learn, negative attitude and interest to the lesson, and the total scores throughout the scale.

Table 9: Score Comparison of Candidate Teachers Obtained from the Attitude Scale Towards the Computer Technologies Lesson On the Basis of Their Department

Sub-Dimension	Department	n	X	S	F	p
Eagerness to Learn	PCG	141	23,82	5,35	0,84	0,43
	Classroom Teaching	86	23,94	5,05		
	Pre-School Teaching	71	22,85	6,91		
Negative Attitude	PCG	141	34,76	7,44	0,53	0,59
	Classroom Teaching	86	34,53	7,92		
	Pre-School Teaching	71	33,61	7,46		
Interest to the Lesson	PCG	141	28,91	6,51	1,13	0,32
	Classroom Teaching	86	29,12	6,40		
	Pre-School Teaching	71	27,53	8,60		
Scale Total	PCG	141	87,48	15,52	1,20	0,30
	Classroom Teaching	86	87,59	15,17		
	Pre-School Teaching	71	83,98	19,18		

In accordance with the ANOVA results on the comparison of learning sub-dimension scores on the basis of departments of candidate teachers as given in Table 9, there is no statistically significant difference between the total scores obtained by the candidate teachers from the sub-dimension of eagerness to learn under the attitude scale towards the computer technologies lesson on the basis of their departments (p=0,43>0,05). Although the score for the eagerness to learn among the candidate teachers studying in Pre-School Teaching is higher than the candidate teachers from the PCG and Classroom Teaching Departments, the difference is not statistically significant.

The candidate teachers from the Department of PCG obtained an average of 34,76±7,44 score from the sub-dimension of negative attitude, while the candidate teachers from the Department of Classroom Teaching obtained an average of 34,53±7,92 and the candidate teachers from the Department of Pre-School as an average of 33,61±7,46. The difference for the average scores obtained by the candidate teachers under the sub-dimension of negative attitude on the basis of their departments is not significant (p=0,59>0,05).

The difference for the total scores obtained by the candidate teachers from the sub-dimension of interest to the lesson under the attitude scale towards the computer technologies lesson on the basis of their departments is not statistically significant (p=0,32>0,05). For this sub-dimension, the candidate teachers from the Department of PCG obtained an average of 28,91±6,51, candidate teachers from the Department of Classroom Teaching as 29,12 and candidate teachers from the Department of Pre-School Teaching obtained 27,53±8,60. The candidate teachers from the Department of Classroom Teaching obtained higher scores than the candidate teachers from the other departments, however this difference is not statistically significant.

The difference for the total scores obtained by the candidate teachers from the attitude scale towards the computer technologies lesson in general on the basis of their departments is not statistically significant (p=0,30>0,05). Although the candidate teachers from the Department of Pre-School Teaching obtained lower scores ($\bar{x} = 83,98$) than the candidate teachers from the other departments, this difference is not statistically significant.

CONCLUSION AND RECOMMENDATIONS

This part indicates the findings generated during the research process and presents the interpreted conclusions and associated recommendations.

In consideration with the attitudes of candidate teachers, who are within the scope of this research, towards the eagerness to learn *computer technologies* lesson, their negative attitudes for the lesson and their interest to the lesson, the candidate teachers replied the statements under *the sub-dimension of their eagerness to learn* as agree in general and provided positive comments. In other words, the candidate teachers do not agree with the negative statements given under this sub-dimension and in a way gave positive view related with the computer technologies lesson. The candidate teachers gave positive comments for the statements under *the sub-dimension of interest to the lesson.* Overall, the candidate teachers replied the positive statements in the scale as agree and negative statements as disagree. Additionally, in accordance with the studies, a significant difference was noted in the favour of students taking the computer lesson than the students taking no computer lesson (Namlu 1998; Sexton et.al. 1999). This study indicates that there is not any significant difference on the attitudes whether the candidate teachers take any course about computer.

The difference between the total scores obtained from the attitude scale in general regarding the computer technologies lesson on the basis of gender is not statistically significant. The candidate teachers observed as having similar views concerning the scale in general, and the views of female and male candidate teachers for the statements under this sub-dimension are similar. Considering the body of literature, the study of Çakır and Şenler (2007) on the attitudes of students towards the science lesson showed no significant difference on the basis of gender. Another study conducted by Özkal, Güngör and Çetingöz on the attitudes towards the Social Studies lesson indicated that due to the success of female students on the basis of their gender is high, they presented positive attitude. Our study conducted regarding the attitude towards the computer technologies lesson showed no significant difference among the gender of students.

There is no statistically significant difference between the total scores of candidate teachers obtained from the attitude scale towards the computer technologies lesson on the basis of their age groups. Regardless the age groups, the students participated to the research got similar scores and answered to the positive statements as agree and disagree to the negative statements.

It was concluded that the attitudes of candidate teachers towards the computer technologies lesson on the basis of their gender, age group, their classes and departments are similar. Moreover, this study indicates that the attitudes of candidate teachers towards the computer technologies lesson are similar on the basis of their class and department. Considering the gender, age, class, academic success, use of computer in family, type of graduated high-school, whether taking any computer courses, use of computers by teachers during the class, access to computer, frequency of using a computer, use of computer and experiences of candidate teachers, there is no significant difference in their attitudes. This causes to consider that the analysed variables have no impact on the attitude of candidate teachers towards the computer (Gerçek, 2006).

The difference of total scores obtained by the candidate teachers from the overall attitude scale towards the computer technologies lesson on the basis of their class years is not statistically significant.

The difference of total scores obtained by the candidate teachers from the sub-dimension of interest to the lesson under the attitude scale towards the computer technologies lesson on the basis of their departments is not statistically significant.the candidate teachers from the Departments of PCG, Classroom Teaching and Pre-School Teaching obtained higher scores than the other departments but this difference is not significant.

When analysed on the basis of a number of variables, the attitudes of candidate teachers towards the computer technologies lesson on the basis of gender, age group, class and departments are similar. Additionally, this study indicated that the attitudes of candidate teachers towards the computer technologies lesson are similar on the basis of their age groups, class and departments.

The introduction of computer lesson into the curricula of primary and secondary education in 1992 (Kuraler, & Güven, 2008) has started to establish the computer background of students until the university education. Since the teachers of all lessons in the primary and secondary education have improved in computer assisted teaching, the attitudes of students as candidate teachers towards the Computer Technologies have affected; and similarly for the primary and secondary education they have easy access to the researches that they look for their homework, studies and projects with the help of Computer Technologies as well as they obtain the skills to effectively present their works in writing through the Computer Technologies. Therefore, when they improve themselves with these opportunities, they would gain the qualifications, which will motivate their students as they become teachers themselves. This have a positive influence on their attitudes towards the Computer Technologies lesson. These views are also supported with the other researches. Today teachers, hence candidate teachers, must have knowledge about two more important domain in addition to subject area and pedagogical formation; one of which is the computer technologies as the inevitable result of technology teaching and the other one is information literacy. The information literacy skills is the corner stone of lifelong learning which arised by force of 21st century. The skill to use computer technologies is not only an elements supporting the teaching but also a preliminary condition of information literacy skills (Kurbanoğlu and Akkoyunlu, 2002a; 2002b).

REFERENCES

Alkan, C. (1998). Eğitim teknolojisi (Yenilenmiş 6. Baskı). Ankara: Anı Yayıncılık.

A. İşman - Sakarya Üniversitesi Eğitim Fakültesi Dergisi, 2001 dergipark.ulakbim.gov.tr

Antonak, R. F., & Larrivee, B. (1995). Psychometric analysis and revision of the opinions relative to mainstreaming scale. *Exceptional children*.

Atay, M. (1995). Özel gereksinimli çocukların normal yaşıtları ile birlikte eğitim aldıkları kaynaştırma programlarına karşı öğretmen tutumları üzerine bir inceleme. Yayınlanmamış doktora tezi, Hacettepe Üniversitesi, Ankara.

Arıkan, R. (2004). *Araştırma teknikleri ve rapor hazırlama*. Asil Yayın Dağıtım.

Baskan, G. A. (2001). Öğretmenlik Mesleği ve Öğretmen Yetiştirmede Yeniden Yapılanma. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 20,* 16–25.

Bodie, J. (1998). Teaching Technology Technque. Black Issues in Higher Education, 15(13), 48-49

Brown, K. S., Welsh, L. A., Hill, K. H., & Cipko, J. P. (2008). The efficacy of embedding special education instruction in teacher preparation programs in the United States. *Teaching and Teacher Education*, *24*(8), 2087-2094.

Batu, S., & Kırcaali-İftar, G., (2007). *Kaynaştırma.* Ankara: KÖK Yayıncılık.

DEMİR, S. B. (2010). Sosyal Bilgiler Dersine Yönelik Bir Tutum Ölçeğinin Geliştirilmesi: Geçerlik Ve Güvenirlik Çalışması, *e - international journal of educational research,1*(1), 26 – 40

DUATEPE, A., & ÇİLESİZ, Ş. (1999). Matematik tutum ölçeği geliştirilmesi.*Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *16*(16).

GERÇEK, C., KÖSEOĞLU, P., YILMAZ, M., & SORAN, H. (2006). Öğretmen adaylarının bilgisayar kullanımına yönelik tutumlarının çeşitli değişkenler açısından incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *30*(30).

Gerçel,E. (2016). Processes of the School Management, Usage of Information Technologies in Adolescents and Aggression Relation, Tojet.

Gerçel. E, Dağlı. G (2016) *" The Education Administrators Evaluation Of the Precautionary Measures Taken Against Technology Based Anger and Aggression in Students"* EURASIA Journal of Mathematics, Science and Technology Education.

Kurbanoğlu, S. ve Akkoyunlu, B. (2002b). Öğretmen aday-lar›na uygulanan bilgi okuryazarl›ğ› program›n›n etkililiği ve bilgi okuryazarl›ğ› becerileri ile bilgi-sayar öz-yeterlik alg›s› aras›ndaki ilişki. Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 22, 98-105.Karaca, E. (2006). Öğretimde planlama ve değerlendirme dersine yönelik bir tutum ölçeği geliştirme. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, *16*, 213-230.

KUTLUCA, T., & EKİCİ, G. (2010). Öğretmen adaylarının bilgisayar destekli eğitime ilişkin tutum ve öz-yeterlik algılarının incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *38*(38).

KURAL ER, F, & GÜVEN, B, (2008). İlköğretim 6, 7 ve 8. sınıf bilgisayar dersi programının içeriğine ilişkin öğretmen görüşleri. Çanakkale Onsekiz Mart Üniversitesi Eğitim Fakültesi Çanakkale Sosyal bilimler dergisi Sayı 19.

KUTLUCA, T., & EKİCİ, G. (2010). Öğretmen adaylarının bilgisayar destekli eğitime ilişkin tutum ve öz-yeterlik algılarının incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *38*(38).

Karasar, N. (2005). *Bilimsel Araştırma Yöntemi*.(14. Baskı). *Ankara: Nobel Yayın Dağıtım*.

KAPTAN, S. (1983). Bilimsel Araştırma Teknikleri ve İstatistik Yöntemleri, Ankara: Tekışık Matbaası.

Ozmenteş, G. (2006). Müzik dersine yönelik tutum ölçeğinin geliştirilmesi.*İlköğretim Online*, *5*(1).

Orel, A., Zerey, Z., & Töret, G. (2004). Sınıf öğretmeni adaylarının kaynaştırmaya yönelik tutumlarının incelenmesi. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi*, *5*(1), 23-33.

Özkal, N., Güngör, A., & Çetingöz, D. (2004). Sosyal bilgiler dersine ilişkin öğretmen görüşleri ve öğrencilerin bu derse yönelik tutumları. *Kuram ve Uygulamada Eğitim Yönetimi, 10*(4), 600-615.

ÖZTÜRK, H., & BALLIOĞLU, G. (2014). ÖĞRETMEN ADAYLARININ ÖZEL EĞİTİMDE KAYNAŞTIRMA UYGULAMALARINA YÖNELİK TUTUMLARININ İNCELENMESİ. *Muğla Sıtkı Koçman Üniversitesi Eğitim Fakültesi Dergisi*, (1).

Sucuoğlu, B., & Kargın, T., (2008). *İlköğretimde kaynaştırma uygulamaları yaklaşımlar, yöntemler, teknikler*. İstanbul: MorpaYayınları.

ŞENGÖREN, S. K., & KAVCAR, R. T. N. (2006). Optik dersine yönelik tutum ölçeği geliştirilmesi. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, *20*(20), 63-68.

TEMEL, Z. F. (2000). Okul öncesi eğitimcilerinin engellilerin kaynaştırılmasına ilişkin görüşleri. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *18*(18)

YÖK (1998a). Egitim fakülteleri ögretmen yetistirme programlarinin yeniden düzenlenmesi [Reorganization of teacher education programs in colleges of education]. Ankara: YÖK [Turkish Council of Higher Education]

YÖK (1999). Türkiye'de Öğretmen Eğitiminde Standartlar ve Akreditasyon. Ankara: YÖK⁄Dünya Bankası Milli Eğitimi Geliştirme Projesi Hizmet Öncesi Öğretmen Eğitimi, Öğretmen Eğitimi Dizisi.

Yuker, H. E., Block, J. R., & Young, J. H. (1970). The measurement of attitudes toward disabled persons. Albertson, NY: Human Resource Center.

YILDIRIM, C. (1966). Eğitimde Araştırma Metotları, Ankara, Akyıldız Matbası, 67.

BUSINESS INTELLIGENCE PROCESS MODEL AS A LEARNING METHOD

Jussi MYLLÄRNIEMI, Pasi HELLSTEN and Nina HELANDER
Department of Information Management and Logistics
Tampere University of Technology, Finland
jussi.myllarniemi@tut.fi

ABSTRACT
Contemporary organisations are struggling with data and information overflow and they need experts who understand rapidly changing business environment, have problem-solving and analytical skills, and, most importantly, know how to create value from data and information. In this paper it is argued that these kinds of modern environment's requirements could be faced by understanding and using business intelligence (BI) approach. BI can be seen as a process for systematically acquiring and analysing data and information from various sources to gain understanding about the business's environment to support decisions that are met for achieving organization's objectives. Based on an empirical case study from higher education setting, this paper proposes that BI process model can be used also as a learning method in higher education setting, leading to high level learning outcomes not only from the students and teachers point of view, but also from the viewpoint of the hiring organizations.

INTRODUCTION

Economist J. M. Keynes allegedly once said: "When my information changes, I change my mind. What do you do?" (Quote Investigator, 2011) In the fast changing business environment this is, indeed, a key question. But another, at least almost as important question is that how does this kind of changed information get to the decision maker in the first place? We know that organizations are struggling with data and information overflow. Information and communications technology, whilst helping the organizations in their tasks, is also creating vast amounts of data all the time. The amount of data is growing at exponential rate (IBM, 2016). The trouble is no longer whether one has the data and information for the decision making, but to distinguish what data is relevant, how to share it within the organisation, and how to use it in best possible way. In short, organisations necessitate know-how to derive knowledge and insight from data and information to support decision-making.

From the higher education perspective, university should be able to teach the students' skills that are valuable from the viewpoint of their future employers. Today's business environment requires experts who understand rapidly changing business and the environment where it happens, have problem-solving and also analytical skills, and, most importantly, know how to create value from data and information. Usually this needs a combination of technological and business-oriented skills from the expert. In higher-education settings we should be able to provide curriculums that support this kind of learning towards a multi-minded expert, but for traditional, function-based university tuition this sets a challenge. In this paper we argue that these kinds of modern environment's requirements could be faced by understanding and using business intelligence (BI) approach (cf. Hannula & Pirttimäki, 2005; Turban et al., 2008). BI can be seen as a process for systematically acquiring and analysing data and information from various sources to gain understanding about the business's environment to support decisions that are met for achieving organisation's objectives (Pirttimäki, 2007). For successful BI process both technological skills for using modern state-of-the-art analytical tools, and business-oriented mind is needed.

BI, and skills related to it, have been taught over 15 years at Tampere University of Technology (TUT) as a part of degree program in Information and Knowledge Management. The course called Business Intelligence Methods and Tools covers the topic of BI with themes such as knowledge needs, knowledge discovery, knowledge assessment and knowledge use. In this paper it is explored how BI process model can be used as a learning method and what kinds of learning outcomes can be achieved. Findings of the paper are valuable to develop contemporary university tuition, but also for business world that constantly sets pressure for graduates' know-how.

THEORY – BUSINESS INTELLIGENCE PROCESS FRAMEWORK

Students have grown up with web-technologies and as more or less digi-native feel comfortable with them. They use a variety of methods according to their own personal capabilities and preferences in order to complete their works and assignments (Kennedy et al. 2008). According to Edmunds et al. (2012) students tend to quickly, and readily, learn how to adopt newer technologies and tools for their work. Practically oriented hands-on tuition is not the most typical

teaching method in university education. However, there are positive aspects comprised to it. For example, the students' feel that this kind of approach presents a way to study in a new and refreshing manner – one that may not be common in academic circles but that is recommended (e.g. Tynjälä et al., 2003; Fiske & Taylor, 1984; Niiniluoto, 1984; Sarvimäki, 1988; Rauste-con Wright & von Wright, 2000). These kinds of statements encourage to try novel learning methods, like the BI process model, in order to support the learning of a theoretical framework by applying it step-by-step in a practical, real-life case assignment.

Literature defines BI as a systematic process for knowingly collecting and analysing data and information from all possible sources to produce insights of the competitive environment, business trends and daily operations. These insights aim to support decisions that further the organization's business goals. BI also includes assessing both the significance of the insights and the quality of the information sources (Hannula & Pirttimäki, 2005; Fleisher & Bensoussan, 2007; Brody, 2008). We suggest that this entity means for the organization to gain control over the information universe, both internal and external, manage it as best as they can to achieve the set business goals and exceed them if possible. In any case one of the centric things is to avoid so called nasty surprises and thus to be prepared for various eventualities as well as possible.

Theme of BI has been studied and used by researchers, for example in Gilad and Gilad (1985), to talk about process that produces information for strategic decision-making somewhat over thirty years. the phenomenon is not new, however, business intelligence as a term, and organized actions, became more popular in late 1990's (Chen et al., 2012). Defining the contents of BI has since caused considerable debate (Calof & Wright, 2008). It can be seen as an umbrella-like phrase or term under which one combines different tools, applications and methods (Turban et al., 2008). Moreover, BI has many similar or related concepts and terms such as competitive intelligence, competitor intelligence, marketing intelligence, business analytics, business intelligence and analytics and big data analytics. Terms differ because of different nature of information (external – internal), scope of information gathering (narrow – broad), the way information is managed (technological – conceptual), or even because of its geographical location. Common for all terms is to process data and information to more meaningful form and to more meaningful use.

Pirttimäki (2007) defines BI as a dualistic concept. It refers to refined information and knowledge, means information about organization's business environment, an organization itself, and its state in relation to its markets, customers, competitors, and economic issues. Also, it is regarded as a process that produces refined information and knowledge (information products) for the management and decision-makers. So, BI may be defined as a framework for refining information to knowledge and a framework for refining data masses to information products used in operations and decision making.

There are various different models and descriptions for BI. Understood in wider sense, business intelligence process is close to management of any information (cf. Choo 2002). Going more precisely into BI we will introduce a generic model adapted from Pirttimäki (2007). It is a combination of multiple sources and can be depicted in five distinct phases (see Figure 1). The framework takes into account the both views stated before: refining information to knowledge and refining data masses to information products. Pirttimäki (2007) nevertheless reminds that the order and existence of phases are highly dependent on the organization and the intelligence effort at hand. The goal of the process is to produce organization-specific intelligence solutions instead of producing general business information or knowledge (Pirttimäki, 2007).

Figure 1. Business intelligence process (adapted from Pirttimäki, 2007)

The process starts with specification of information needs. It requires a clear statement of the key intelligence topics and more specific questions concerning the current issues, problems, or trends (Pirttimäki, 2007). The specified information needs define the external and/or internal information sources that act as a foundation for gathering information or data. This means monitoring various sources and actually collecting the information. Based on scale and range of needed information organizations must decide how closely they want observe for example changes in markets or behavioural of customers and store the results to organization's depositories.

Processing phase includes analysing and evaluating the gathered information, and representing it in a compact form, i.e. information products. Collected information (mass) is assessed and connected to information that is already known, e.g. structured information of external environment is connected to the know-how of employees. This is where most BI tools come in handy. Yet, existence of information and information products is not enough. Dissemination phase is

about sharing the knowledge and insights. These must be formally or informally communicated to the decision-makers, at the right time and via most suitable tools. In the final phase of BI process, utilization, information is used in problem solving and decision making situations. By utilizing information and knowledge is formed new information and understanding, and by adjusting operation of organizations the BI cycle starts over. In next, this kind of BI process model is applied step-by-step in a case course as a learning method.

EMPIRICAL STUDY

1. The case course

Business Intelligence Methods and Tools is a course offered to the students of some prior knowledge; they should have carried out the basic course of Knowledge and Information Management as a prerequisite, as well as other ground laying courses in industrial engineering. In other words, before entering the course of Business Intelligence Methods and Tools, the students should know the basics of the area as well as some knowledge already in managing a business enterprise. The learning objectives for the course state that after the course a student understands the meaning of BI process and its phases. S/he also knows meaningful methods for analysing business information and understands how BI methods and tools could be applied in a business case. Noteworthy detail is however that the course entails mostly methods for analysing qualitative information leaving the quantitative side for in that particular area specialized courses.

The course setting is formed on three interrelated actors each with their own bilateral expectations: the students participating in the course and teaching, the university responsible for organising the course, and the selected industry partners, providing the real-life case problems for the educational needs. The enrolment is approximately 40 to 50 students in their 3rd and 4th year of studies. The course staff searched and recruited five companies from the outside businesses to present their question/business problem for the students to solve. The organisations were contacted well in advance and after having agreed to come along, they were prepped and sparred to set a problem or a question they had but for which they did not have the time or other resources to solve. This means in practise that the problem is real, but still not a question of life and death for the organization. University made the arrangements and facilitated the course.

Students had to solve the problem by doing an analysis through the phases of BI process model. They also reported their analysis as planned together with course staff and the case company. Solving the problem followed the phases of BI process model, thus the BI process model was used as a practical learning method in the course. By this the aim was to ensure that students really understand the essence of BI and learn how to apply BI process model in practice. First, students defined information needs and made plans to execute it. They collected data and information, analysed it after critical selection of analysing methods and shared results by presenting those to vendor and course staff. After completing the exercise course staff evaluated students' works together with the industry partners.

2. Learning in each phase of the BI process model

The degree program in Information and Knowledge Management has recently updated to meet today's business environment requirements. After passing the degree program in Information and Knowledge Management, students understand rapidly changing business environment, have problem-solving and analytical skills, and, most importantly, know how to create value from data and information. Also, students have to know how to utilise his/her knowledge resources and ICT in order to solve information and service society's challenges. In order to find out how our business intelligence tuition answers the requirements, feedback from students was gathered. In next sections the main learning outcomes are presented and analysed in relation to the different phases of the applied BI process model.

The first step in BI process model is to define information needs. This is crucial step which leads latter steps. Students defined information needs with the vendor. They set their own goals which is motivating and educational. The second phase of the BI process model, information gathering, required constant discussion between students and the industry partners. The students learnt different data gathering methods in practice and they learnt the importance of interaction with the stakeholders. The third phase of the BI process model, processing phase, included analysis and evaluation of the gathered information. Collected information was assessed and the different pieces of data from different sources were connected together. This was the phase where the students learnt to use different BI tools in practice, as this is the phase where there are lots of different BI tools and techniques available at the market. Dissemination phase is about sharing the knowledge and insights, representing it e.g. in the form of information products. In this phase the students presented their key findings to the industrial partner, and also gave the formal report. In this phase the students learnt

how important it is to provide the information in right time and in accurate form, so that the information receiver is able to catch it and understand it properly. In the final phase of BI process, utilization phase, information is used in problem solving and decision making situations. This was the hardest phase to carry out in the course, as the timetable for a single course is usually not long enough to make a follow-up study of how the provided information was actually put in use in the companies.

3. The course feedback

Based on the feedback of the students, the course was a success. For example, students said that cooperation with the companies was interesting and practical cases motivated to work.

> *"Good real life cases"*
>
> *"Cooperation with the companies gave good concrete setting to use the BI methods and techniques"*
>
> *"The practical and independent group work gave good knowledge about real business life and supported to learn the methods in practice"*
>
> *"It was nice that the assignments were done for real companies"*
>
> *"A real-life case supported my motivation"*
>
> *"BI course was very good. We got a flow when doing the assignment, which was for a real-life need – not an imaginary case"*

They also said that the preparations course staff and industrial partners did beforehand help them to begin work on the exercise. They did not need to spend time to search suitable cooperation companies and to motivate companies to their work. The students also appreciated the flexibility in course arrangements.

> *"Good course book, well prepared industry cooperation and case assignments gave a head start for the learning – they enabled to concentrate on learning the BI process, methods and techniques."*
>
> *"It was a good starting point that you were able to choose the persons with whom you did the assignments!"*

Students felt in overall that the course offered interesting and practical cases and provided deep understanding of practical problems and know-how to solve it by applying methods in practice.

> *"Teaching and supervision were professional"*
>
> *"More of these kinds of practical and real-life cases to our curriculum!"*
>
> *"Assignments for the case company were interesting and gave a lot. It was very nice to familiarize myself to a new industry sector"*
>
> *"A great way to learn BI in practice"*

CONCLUSIONS AND DISCUSSION

Based on the empirical case, the application of BI process model in a practical way was perceived as a success by the students. They were motivated and felt that they learnt lots of practically relevant skills.

From the university and teachers point of view this kind of learning method offers of course meaningful cooperation and a positive change in normal teaching routines. But most importantly, it motivates students and support them to achieve better learning outcomes. Following points are central when analyzing why use of BI process model as a learning method supports to achieve the learning outcomes:

- Co-design: Defining assignment together with the industry partners is easier through a specific model
- Defining information needs: Compulsory to contact industry partners and define the real information need.
- Constant dialogue between participants and open atmosphere e.g. through weekly discussions

Even though BI as a discipline, and various models in that area, are not very old, already during their lifespan the business environment has undergone changes and developments. This may cause the need for modern thinking in this branch as well. The environment, developed during recent years, has features that affect BI thinking such as even further networked businesses, newer and continuously changing technologies, Internet of Things, big and open data, and information overflow in general. For example, social media as part of BI can provide improvements but also bring up novel challenges (Vuori, 2011). Based on the experiences of the empirical case of this paper, it can be recommended to bravely choose a model/framework and to apply it in cooperation with industry partners even in a higher education context, when it comes to teaching new, challenging areas and themes to students. Innovativeness in higher education context is not an opposite thing to cooperation with industry, nor a theoretical framework opposite to practicality and real-life challenges.

REFERENCES

Brody, R. (2008). Issues in defining competitive intelligence: An exploration. *Journal of Competitive Intelligence and Management*, 4(3), pp. 3-16.

Calof, J. L., Wright, S. (2008). Competitive Intelligence. A practitioner, academic and inter-disciplinary perspective. *European Journal of Marketing*, 42(7/8), pp. 717-730.

Chen, H., Chiang, R., Storey, V. (2012). Business intelligence and analytics: from big data to big impact. *MIS Quarterly*, 36(4), pp. 1165-1188.

Choo, C. W. (2002). *Information management for the intelligent organization: The art of scanning the environment*. Information Today, Medford (NJ).

Edmunds, R., Thorpe, M. and Conole, G., (2012). Student attitudes towards and use of ICT in course study, work and social activity: A technology acceptance model approach. *British journal of educational technology*, 43(1), pp.71-84.

Fiske, S.T. and Taylor, S.E. (1984). Social Cognition. Addison-Wesley, Reading, PA.

Fleisher, C. S., Bensoussan, B. E. (2007). *Business and competitive analysis. Effective application of new and classic methods*, Pearson Education, New York.

Gilad, B., Gilad, T. (1985). *A systems approach to business intelligence*. Business Horizons, 28, pp. 65-70.

Hannula, M., Pirttimäki, V. (2005). A Cube of Business Information. *Journal of Competitive Intelligence and Management*, 3(1), pp. 34-40

IBM. 2016. What is big data? http://www-01.ibm.com/software/data/bigdata/what-is-big-data.html. Read 15.5.2016

Kennedy, G. E., Judd, T.S., Churchward, A., Gray, K. and Krause, K.L. (2008). First year students' experiences with technology: Are they really digital natives? *Australasian Journal of Educational Technology.* 24, 1, 108-122, DOI= http://www.ascilite.org.au/ajet/ajet24/kennedy.html

Niiniluoto, I. (1984). *Johdatus tieteenfilosofiaan: Käsitteen- ja teorian-muodostus*, Otava, Keuruu, In Finnish.

Pirttimäki, V. (2007). *Business intelligence as a managerial tool in large Finnish companies*. Tampere University of Technology. Publication 646, Tampere.

Quote Investicator. (2011). When the Facts Change, I Change My Mind. What Do You Do, Sir? http://quoteinvestigator.com/2011/07/22/keynes-change-mind/, Read 15.5.2016.

Rauste-von Wright, M. and von Wright, J. (2000). *Oppiminen ja koulutus*, WS Bookwell Oy Juva., Finland, In Finnish.

Sarvimäki, A. (1988). *Knowledge in Interactive Practice Disciplines: An Analysis of Knowledge in Education and Health Care*, Department of Education, University of Helsinki. Research Bulletin 68, Helsinki, Finland.

Turban, E., Aronson, J. E., Liang, T-P., Sharda, R. (2008). *Business intelligence: a managerial approach*. Pearson Prentice Hall, New Jersey.

Tynjälä, P., Välimaa, J. and Sarja, A. (2003). Pedagogical perspectives on the relationships between higher education and working life. *Higher Education*. 46, 2, 147-166.

COMPARISON OF LEISURE SATISFACTION LEVEL AND PHYSICAL ACTIVITYOF NOT-PRACTICING AND PRACTICING DIFFERENT PHYSICAL ACTIVITIES WITH REGULARLY PLAYING TENNIS

*Asuman Şahan, K.Alparslan Erman, LokmanTimurtaş, NeşeToktaş Torun

*Akdeniz University, School of Physical Education and Sports,

Dumlupinar Avenue, 07058, Antalya, Turkey

asusahan@akdeniz.edu.tr

ABSTRACT

The purpose of this study was to comparisonthe leisure satisfaction and the physical activity level in both regular recreational tennis players (RT)and practicing different physical activities with regularly recreational tennis (FART).

A total of 75 recreational tennis players who 28 women (age, 48.53±9.20years; height, 160.64±7.55cm; weight, 65.25±9.91kg), 47 men (age, 46.24±9.25years;height, 175.06±6.58cm; weight, 78.89±8.35kg), (age, 47.10±9.24years; height, 169.68±9.85cm; weight, 73.80±11.11kg) participated voluntarily in this study. The participants have indicated that they had been playing tennis for 9.13±5.14 years. Leisure satisfaction level was determined by Leisure Satisfaction Scale (LSS). Physical activity level was determined International Physical Activity questionnaire (IPAQ) short form was applied to all the participants.

As a result of the study, according to IPAQ Points (MET-min/week), it was determined that, FART group receive higher points in the parameters of Walking (n=34, 1128±1005) and Vigorous Physical Activity (VPA) (n=31; 4954.84±4536.59), than RTgroup (Walking: n=25; 603.90±558.83;VPA: n=18; 1655.55±1165.39) ($p<0.05$).

Furthermore, in the education sub dimension of the LSS (FART: n=39; 38.00±6.17; RT: n=36; 34.61±5.91), it was determined that there was a significant difference in favor of the FART group ($p<0.05$).

Keywords: Physical Activity, Exercise, Recreation, Tennis.

INTRODUCTION

Life satisfaction is explained as cognitive processes necessary for a person to evaluate his/her feelings with positive feelings without negative feelings. Life satisfaction is related to social activity, happiness, forgiveness, life standards, unemployment, job environment, thelevel of income, stress, working conditions, psychological exhaustion, job satisfaction, participation in leisure activities, leisure satisfaction (Ercan, 2004).
Leisure is “the period of time remaining from the works that a person has to do to sustain his/her life”. Leisure activities are “activities people choose with their free will in the remaining time from the time period they make for themselves to meet their biological needs such as working hours, eating and sleeping and activities that are not bound to certain rules” (Yerlisu and Ağyar, 2012). Positive satisfaction or feelings a person presents, obtains and reaches as a result of participating in these activities are called leisure satisfaction (LS). Participation in leisure activities is related with LS. Thus, while a certain activity causes a positive pleasure in an individual, it may not have the same effect on another individual. Therefore, leisure satisfaction depends on the taste and ability of an individual, theexistence of leisure and various sources (financial instruments and social interaction). Other factors such as gender, age, level of income and home environment of an individual may affect the LS level (Muzindutsi and Masango, 2015). The types of leisure activities performed during certain periods of life may have apositive or negative effect on life satisfaction. For example, in a study conducted in adolescences, it was determined that those playing more online games as leisure activity are less satisfied with their lives than those playing less (Wang, Chen, Lin and Wang, 2008).

Leisure activities significantly include sports activities (tennis, walking, swimming, cycling, football, dance, fitness, etc.) (Ercan, 2004). Diversity, variability and mobility characteristics of the sports may be the reasons they are widely preferred among the leisure activities (Arabacı and Çankaya, 2007). Physical Activities (PA) are entertaining and didactic recreative activities affecting the physical, cognitive and social development of a person (Ercan, 2004; Afyon and Karapınar, 2014). It is reported in the literature that PAs are the biggest factors reducing morbidity and mortality risk from ischemic heart diseases. PA is also among the factors affecting the

psychological well-being (mental stress, life dissatisfaction, etc.)(Schnohr et al., 2004). The effects of regular PA on health are related tothe duration and intensity of the exercise (Genç et al., 2011). In previous studies, it was stated that individuals performing physical activity at least 3 times a week at their leisure have a lower mortality rate (Moore et al., 2012).

In the study, the PA and LS levels of individuals playing tennis regularly and individuals participating in different physical activities along with playing tennis at their leisure were compared. The study was planned with the assumption that the level of leisure satisfaction would be higher in the individuals with the higher tennis-focused PA level and diversity than those with less. It is believed that the results of the study will provide benefits about what needs to be done to increase the LS levels of those performing physical activity at their leisure in our society.

The International Physical Activity Questionnaire (IPAQ), used to determine the level of PA in the study, is one of the valid and reliable methods that are easy to implement and do not cost (Topsaç and Bişğin, 2014). The Turkish adaptation version of the long version of the LS scale, developed by Beard and Ragheb (1980), was used to determine the level of leisure satisfaction (Karlı et al., 2008).

MATERIAL AND METHOD

Participants

A total of 75 individuals playing recreational tennis in Antalya province voluntarily participated in the study. While 39 (13 females, 26 males) of these individuals participated in different physical activities along with recreational tennis, 36 (15 females, 21 males) of them did not.

Data Collection Method

The data were obtained by applying the personal information version consisting of the questions including age, gender, years of playing tennis, LS scale, and IPA questionnaire to all participants. The participants were informed in detail about the study before they filled in the questionnaire.

Leisure Satisfaction Scale (LSS)

The LSS was firstly developed by Beard and Ragheb (1980). The original version comprises of 51 questions and 6 sub-dimensions. The Turkish adaptation and the valid and reliable version of the scale including 39 questions and 6 sub-dimensionswere used in the study. These 6 sub-dimensions were determined to be psychological, educational, social, relaxation, physiological and aesthetic dimensions. These questions are the Likert-type scale including points between 1 and 5 on the scale (1=Hardly ever applies to me, and 5=Almost always applies to me). In the study conducted by Karlı et al., the Cronbach's Alpha reliability coefficient α=0, 92 was calculated to be also 0,92 in our study (Karlı et al., 2008).

International Physical Activity Questionnaire (IPAQ)

To evaluate the leisure physical activity, a short version of the International Physical Activity Questionnaire (IPAQ) was used. The short version of the IPAQ comprises of 7 questions to determine the physical activity level of an individual. It is recommended to be applied to adults between the ages of 18-69 years. The questionnaire includes questions about PA performed for at least 10 minutes in the past 7 days. The MET method is used to determine the PA level. 1 MET=3,5 ml/kg/min. During relaxation, each individual consumes 3,5 ml oxygen per kilo in one minute. In the IPAQ, walking and the levels of moderate and vigorous PA are evaluated [Walking=3,3 MET, Moderate PA (MPA)=4 MET, Vigorous PA (VPA)=8 MET]. By determining for how many days and how much time each person performs Walking, MPA, and VPA, the total amount of MET-min/week spent in these three different physical activities is calculated. The validity of the IPAQ was determined in a few studies in Brazil. In a study conducted by Azevedo et al. (2007), it was stated that the IPAQ is a reliable and easily applicable instrument to measure physical activity.

RESULTS

Participants comprise of 28 females (age, 48.53±9.20 years; height, 160.64±7.55 cm; weight, 65.25±9.91 kg) and 47 males (age, 46.24±9.25 years; height, 175.06±6.58 cm; weight, 78.89±8.35 kg). It was determined that participants played tennis for 9.13±5.14 years on average.

Table 1: Physical Activity Levels of All Participants

n=75	**Walking** (AO±SD)	**MPA** (AO±SD)	**VPA** (AO±SD)
PART(MET-min/week) (n=39)	1128±1005	1507.06±1439.75	4954.84±4536.59
p=	0.02*	0.06	0.00*
RT(MET-min/week) (n=36)	603.90±558.83	920.00±393.96	1655.55±1165.39

As a result of the study, according to the IPAQ points (MET-min/week), it was determined that PART got higher points in Walking (n=34, 1128±1005) and VPA parameters (n=31; 4954.84±4536.59) than RT (Walking: n=25; 603.90±558.83; VPA: n=18; 1655.55±1165.39) ($p<0.05$).
In the MPA parameter, it was determined that there was a difference too close to $\alpha=0.05$ significance level between PART (n=34; 1507.06±1439.75) and RT (n=31; 920.00±393.96) ($p=0.06$).
It was observed that the total MET amount the PART group spent (6235,96± 6068,84) in a week was significantly higher compared to the RT group (2039.3750±1949.56) ($p=0.00$).

Table 2: Leisure Satisfaction Levels of the Participants

LSL n=75	**PART** (AO±SD) n=39	**p**	**RT** (AO±SD) n=36
Psychological	34.53±4.46	0.33	35.44±3.53
Educational	38.00±6.17	0.01*	34.61±5.91
Social	31.17±4.55	0.23	32.53±5.28
Relaxation	18.59±1.52	0.96	18.61±1.84
Physiological	24.76±3.53	0.85	24.92±2.99
Aesthetic	17.05±2.84	0.60	16.72±2.61
Total	166.38±17.76	0.14	160.56±16.39

A significant difference on behalf of PART (PART: n=39; 38.00±6.17; RT: n=36; 34.61±5.91) was determined in the education sub-dimension of the LS scale ($p<0.05$).

Any significant relation was not observed between the LSL points and PA points of all participants ($p<0.05$).

Table 3: Leisure Satisfaction Levels of All Participants by Gender

LSL n=75	**Female** (AO±SD) n=47	**p**	**Male** (AO±SD) n=28
Psychological	36.64±2.93	0.00*	34.02±4.25
Educational	39.03±4.54	0.00*	34.79±6.61
Social	33.50±4.69	0.03*	30.91±4.90
Relaxation	18.82±1.85	0.34	18.47±1.85
Physiological	25.75±2.25	0.04*	24.30±3.65
Aesthetic	17.53±2.62	0.11	16.51±2.73
Total	171.28±13.21	0.00*	159.00±17.85

It was determined that there is a significant difference in Psychological, Educational and Physiological sub-dimensions and the total dimension in the LSL of all participants by gender ($p<0.05$).

Table 4: Leisure Satisfaction Levels of the PART and RT Groups by Gender

	PARTn=39			**RT**n=36		
Sub Dimensions	**Female** (AO±SD)n=13	**p**	**Male** (AO±SD)n=26	**Female** (AO±SD)n=15	**p**	**Male** (AO±SD)n=21
Psychological	37.00±3.16	0.04*	34.65±3.51	36.33±2.79	0.02*	33.24±5.00
Educational	41.69±2.78	0.00*	36.15±6.59	36.73±4.57	0.05	33.09±6.39
Social	35.46±3.84	0.00*	31.08±5.35	31.80±4.81	0.49	30.71±4.41
Relaxation	18.38±1.50	0.56	18.69±1.54	19.20±1.01	0.07	18.19±2.18
Physiological	26.31±1.49	0.01*	24.00±4.00	25.27±2.71	0.55	24.67±3.21
Aesthetic	17.77±2.98	0.29	16.69±2.75	17.33±2.35	0.23	16.28±2.76
Total	176.61±1.66	0.00*	161.27±18.23	166.66±13.07	0.05	156.19±17.40

It was determined that females performing PART are significantly different from males in the Psychological, Educational, Social, Physiological and Total points ($p<0.05$).
It was determined that females playing RT are significantly different from males in the Psychological sub-dimension ($p<0.05$).

DISCUSSION

The study was conducted to examine the LS levels and PA levels of individuals playing tennis regularly and performing PAs along with it. In the study, it was determined that leisure PA varieties increase the PA level. In previous studies, the effect of the intensity of regularly performed physical activity on some psychological parameters was examined. The fact that those with higher numbers of regular weekly exercises have a lower stress level than those with lower numbers is found in the mentioned studies (Schnohr et al., 2004). It was reported by the World Health Organization that in adults at the age of 18-64 years, performing PAs by combining moderate PA for 150 mins in a week and PA for 75 mins in a week reduces depression risk (Kuwahara et al., 2015). However, no study on the effect of the PA diversity on the LS level was found in the literature. In this sense, it is believed that the results obtained from this study would be beneficial.

Upon examining the LS levels of all participants, the points of only the educational dimension of individuals who regularly perform more than one PA were observed to be higher when compared to those who do not. According to these results, it can be concluded that PA diversity performed at their leisure positively affects individuals' satisfaction levels related to education.

Upon examining the LS level points of all participants by gender, the points of females in the psychological, educational, social, physiological sub-dimensions and in total were observed to be higher than those of males. However, no significant difference inthe relaxation and aesthetic dimensions was observed. On the basis of these findings, in this study, in which 28 females(age, 48.53±9.20 years) and 47 males (age, 46.24±9.25 years) participated, the LS levels of females performing physical activity at their leisure were found to be higher than those of males. It was determined that the LS points of females performing more than one PA were higher than those of males in the psychological, educational, social, physiological sub-dimensions and in total.

In the literature, in the studies conducted in various age groups regardless of the leisure activities, the effects of gender on leisure activities were examined. In a study conducted on kids and teenagers, it was stated that no difference by gender was found in the participation of leisure activities (Muzindutsi and Masango, 2015). In a study on teenagers conducted in 804 university students in Turkey, it was stated that no difference was found by gender in both the leisure satisfaction level and in sub-dimensions (Ardahan, Lapa, 2010). In a study conducted in individuals over 65 years, no significant difference between the LS levels of females and males was found (Broughton and Beggs, 2007). However, in an older study, it was stated that the leisure satisfaction levels of males were more dominant than females', but females needed more leisure for social interaction (Kabanof, 1982). As for this study, differences in the leisure satisfaction levels between the individuals participating in a single physical activity at their leisure and individuals participating in various physical activities (tennis-focused) at their leisure were examined and it was determined that the LS points of females were higher than those of males. Furthermore, it was determined that females performing more than one physical activity had more LS levels than males. No significant relations between the LS scale points and the points obtained from the PA questionnaire were observed.

Consequently, it can be stated that Pa diversity is a factor increasing the PA amount. It was determined that satisfaction levels in the feelings (educational dimension) such as learning new abilities, trying, a better identification of the society and themselves of the individuals performing more than one PA in their leisure were higher. It was observed that females participating in leisure activities had higher LS levels than males and females participating in more than one PA had higher LS levels than males. According to these results, it was determined that gender has an effect on LS in the individuals performing leisure activity at their leisure; however, diversity, intensity, and frequency of the physical activity performed are not related to the LS level.

REFERENCES

Afyon, Y.A., Karapınar M.(2014). Lise Son Sınıf Öğrencilerinin Serbest Zaman Faaliyetlerine Katılım Biçimlerinin Değerlendirilmesi, Sosyal Bilimler Enstitüsü Dergisi,33, (pp.147-163).

Arabacı, R., Çankaya C.(2007). Beden Eğitimi Öğretmenlerinin Fiziksel Aktivite Düzeylerinin Araştırılması, Eğitim Fakültesi Dergisi, 20 (1), (pp.1-15).

Ardahan F., Yerlisu Lapa T**.(**2010**).** Üniversite Öğrencilerinin SerbestZaman Tatmin Düzeylerinin Cinsiyete ve Gelir Düzeyine Göre İncelenmesi, Hacettepe Spor Bilimleri Dergisi, 21, (pp.129-136).

Azevedo, M.R.,Araujo, C.L.P., Reichert, F.F., Siqueria, F.V., Silva, M.C., Hallal, P.C. (2007).Gender Differences in Leisure-Time Physical Activity, Int. Public Health, 52, (pp.8-15).

Broughton, K., Beggs, B.A.(2007). Leisure Satisfaction of Older Adults, Activities, Adaptation and Aging, 31(1), 1-18.

Ercan, P.(2016).An Analysis on The Level of Leisure Satisfaction And The Level of Satisfaction with Life Young People Who Attend Sport Education Camps in Nature, Educational Research and Reviews, 11, (pp. 834-841).

Genç A., Şener Ü, Karabacak H., Üçok K.(2011). Investigation of Physical Activity and Quality of Life Differences betweenMale and Female Young Adults, The Medical Journal of Kocatepe, 12, (pp.145-150).

Josefsson, K.W., Lindwall, M., Ivarsson, A.(2015). Need Satisfaction, Motivational Regulations and Exercise: Moderation and Mediation Effects, International Journal of Behavioral Nutrition and Physical Activity, 12, (pp.67).

Kabanof B.(1982).Occupational and Sex Difference in Leisure Needs and Leisure Satisfaction. Journal of Organizational Behavior, 3, (pp.233-245).

Karlı, Ü., Polat, E., Yılmaz, B., Koçak, S. (2008).Serbest Zaman Tatmin Ölçeğinin (SZTÖ-Uzun Versiyon) Geçerlilik ve Güvenirlilik Çalışması, Spor Bilimleri Dergisi, 19 (2), (pp.80-91).

Kuwahara, K., Honda, T., Nakagawa, T., Yamamoto, S., Akter, S. (2015). Association of Leisure-Time, Occupational, and Commuting Physical Activity Risk of Depressive Symptoms amongJapanese Workers, International Journal of Behavioral Nutrition and Physical Activity, 12, (pp.119).

Moore, S.C., Patel AV., Matthews C.E., Berrington, G.A., Park, Y., Katki, H.A., Linet, M.S., Weiderpass, E., Visvanathan, K., Helzlsouer, K.J., Thun, M., Gapstur, S.M., Hartge, P., Lee, I. (2012). Leisure Time Physical Activity of Moderate to Vigorous Intensity and Mortality,PLoS Med., 9(11):e1001335.

Muzindutsi, P.F., Masango Z. (2015). Determinants of Leisure Satisfaction Among Undergraduate Students at a South African University, International Journal of Business and Management Studies, 7 (1), (pp.1309-8047).

Schnohr, P., Kristensen, T.S., Prescott, E., Scharling H.(2004). Stress and Life Dissatisfaction are Inversely Associated with Jogging and Other Types of Physical Activity In Leisure Time- The Copenhagen city Heart Study, Scand J. Med. Sci. Sports, 15, (pp.107-112).

Topsaç, M.,Bişğin, H. (2014).Üniversitede Okuyan Engelli Öğrencilerin Fiziksel Aktivite Düzeylerinin İncelenmesi, Dumlupınar Üniversitesi Sosyal Bilimler Dergisi, 40, (pp.163-174).

Wang, E.S., Chen, L.S., Lin, J.Y., Wang, M.C. (2008). The Relationship between Leisure Satisfaction and Life Satisfaction of Adolescents Concerning Online Games, Spring, 43(169), (pp.177-84).

Yerlisu, L., Ağyar, E. (2012). Hacettepe Spor Bilimleri Dergisi, Üniversite Öğrencilerinin Serbest Zaman Katılımlarına Göre Algılanan Özgürlük, 23 (1), (pp.24-33).

Corpus Analysis of Support Verb Construction Use Through Native and Non-Native Academic and Argumentative Corpora

Ali Şükrü ÖZBAY
Faculty of Letters, Karadeniz Technical University, Trabzon, Turkey
ozbay@ktu.edu.tr

Büşra KABAKCI
Faculty of Letters, Karadeniz Technical University, Trabzon, Turkey
busrakabakci55@gmail.com

ABSTRACT
This corpus based contrastive analysis aims to explore the tertiary level EFL students' use of support verb constructions (SVCs) in comparison with the reference corpora. While doing so, it utilized several corpora of learner English. Two genres (argumentative and academic writing) were investigated with reference to the related corpora and the results showed that it is difficult to state whether the Turkish learners of English over- or underuse support verb constructions in their argumentative and academic essays. Significant underuses and overuses were noted between the reference corpora and the Turkish ones. A more striking difference was noted between the expository argumentation essay and the academic argumentations. Tertiary level Turkish learners tended to use fewer support verb constructions in general but at the same time they tended to use fewer but more specific SVCs. This was also the case in the academic argumentations and the also between the reference corpora. Last but not least, tertiary level Turkish EFL students displayed a fundamental difference from the British students regarding their overall frequencies of support verb constructions in spite of the fact that the gap between the expository and academic styles existed even greater in scope and extent.

INTRODUCTION
Corpus is defined as the collection of language samples that are stored and accessed on a computer. What a corpus linguist does is to analyse and describe language in its written and spoken forms. Thanks to the data that is gathered in a computer, a linguist can access to a huge amount of data that is naturally occurred; and in turn, helping linguists to lay their generalizations on authentic data rather than on intuition and generalization. There are seven types of corpus; these being specialized, general, comparable, parallel, learner, diachronic and monitor corpus. Since a corpus is designed for a specific purpose, the type of corpus depends on its purpose of being used. Learner corpora, for instance, makes it possible to observe the native and non-native language learners` progress in terms of lexical developments or their interlanguage developmental stages by analyzing the concordance lines carefully and observing possible patterns. Since this type of corpus has become a focus of attention recently especially with the inclusion of computers into the corpus search, the language related problems that EFL learners experience in their writings were tracked down easily and possible solutions offered rapidly. Learner corpus also makes it possible to investigate EFL learners` discourse competency, lexical and grammatical competency and development as well as understand their language acquisition processes by carefully observing their interlanguage patterns. While Ellis (1994, p. 6) stated that "SLA research can be categorized under three major categories; these being the "language use data, meta-lingual judgments and self-report data", Mark (1998), however, claimed that "a learner output perspective has to be integrated into this group since it is not rational to base the all instruction on a limited data set, ignoring the knowledge of learner language, which requires the use of a learner corpus" (p.77).

Support Verb Constructions
The fact that English language contains patterns or word combinations is an old consensus by now. One of these patterns are verb and noun combinations that are formed of a verb and a noun pattern, such as "make an arrangement", "make a statement", "give emphasis" etc. They are special combinations because, in these combinations nouns carry the core meaning of the combination and verbs have little or no meaning and they are used as conjunction. Support verb constructions have been studied for years under different names but the same content. According to Krenn (2000) and Danlos (1992) they are called "support verb constructions", to Algeo (1995) they are "expanded predicates", to Allerton (2002) "stretched verb constructions" and to Stein (1991) they are "phrasal verbs".

For Sinclair and Fox (1990), although the total number of support verbs is small, they include some of the most common words in the language and are used largely by native speakers. It is also the case that these verb + noun constructions seem to be very frequent but problematic even for advanced learners (Lewis, 2000). Carter (1987) stated that years of experience and exposure is needed and that learners are seldom faced with the word combinations sufficiently. The fact that in some teaching materials these support verb constructions are totally

neglected may lead us to assume intuitively that they are difficult for learners of English (Lewis, 2000). For these reasons, according to Sinclair and Renouf (1988) there is a need for giving them more attention and emphasis in foreign language teaching and especially in teaching materials.

A great number of these verb + noun patterns according to Sinclair and Fox (1990), start with typical verbs such as "*have, take, make* and *give"* and the criteria for calling these verb + noun combinations as support verb constructions are given below:

1. Combinations in which the noun is derivationally related to the verb (e. g. take a breath – breathe, make a decision – decide, offer an apology – apologize)
2. Combinations in which there is no indefinite article (e.g. take action)
3. Combinations in which the noun is a prepositional object (e.g. take something into consideration)
4. Combinations which contain verbs other than have, take, make and give (e. g. run a risk).
5. Combinations of a verb and a noun which do not have a roughly synonymous verb related to the noun (e.g. make an effort) (Labuhn, 2001).

METHODOLOGY

For this study, two native and two non-native corpora were used for SVC content investigation. BAWE (British Academic Written English), KTUCALE (Karadeniz Technical University Corpus of Academic Learner English), TICLE (Turkish International Corpus of Learner English) and LOCNESS (The Louvain Corpus of English Essays) are used.

	KTUCALE	**BAWE (Linguistics)**	**LOCNESS**	**TICLE**
Tokens	500,045	529,149	326,093	203,923
L1	Turkish	English	American English, British English	Turkish
Genre	Academic	Academic Argumentative	Expository argumentative	Expository Argumentative
Number of Topics	133	50	88	34
Number of texts	220	223	306	280

Table 1: Profiles of the four corpora used in the study

KTUCALE consists of academic argumentative essays written by the tertiary level EFL students at Karadeniz Technical University. All the essays are academic in character and the selected sample for the present comparative study is a total of 500.045 words. The reference and control corpus of similar writing was taken from the British Academic Written English (BAWE) database.

BAWE corpus was built at the Universities of Warwick, Reading and Oxford Brookes under the directorship of Hilary Nesi and Sheena Daer, Paul Thompson and Paul Wickens. BAWE was released in 2008. This corpus contains approximately 3000 pieces and approximately 6.5 million words of proficient student writing from British universities.

TICLE corpus contains approximately 200.000 words and 280 argumentative essays that are written by 3rd and 4th grade proficient university students of Çukurova University, Mersin University and Mustafa Kemal University.

LOCNESS contains 149,574 words of argumentative essays written by American university students, 18,826 words of literary-mixed essays written by American university students, 59,568 words of argumentative and literary essays written by British university students and 60,209 words of British A-level argumentative essays.

For the data analysis, SVCs were extracted from the all four corpora and specified through the following procedure. SVC is defined as "the noun in these expressions is derivationally related to a verb which is roughly synonymous with the whole combination" (Nesselhauf, 2004). However, concordances that are generated by AntConc software involved not only SVC but also verb + noun free combinations since many particles function as both SVC and free nouns. For example, *make (an) observation* is a support verb construction in *I make an observation about a recurring item in a newspaper...*, but it is a verb + noun free combination in *To make him happy, she gave all her effort to make a cake.* Thus, the second step was manual checking to sort out verb + free noun combinations. The third step involved checking all the results using Collins Cobuild Advanced Learner`s Dictionary (2014) to determine which meanings made them support verb constructions or verb + free noun combinations.

After these steps, the analysis was carried out to find answers to the following questions regarding Turkish EFL learners' use of support verb combinations:

1- To what extent do the academic non-native Turkish writers (KTUCALE) use SVCs when compared to their native academic counterparts (BAWE)?
2- To what extent do the non-native Turkish writers (TICLE) use SVCs when compared to their native writers (LOCNESS)?

For the first research question, the overall frequencies of support verb construction in the learner corpus were calculated in comparison with those in native novice corpora. For second research question, the highly frequent SVC in the BAWE, LOCNESS, TICLE and KTUCALE were investigated for possible similarities or variations.

RESULTS

The support verb constructions (SVCs) and their absolute and relative frequencies of the four corpora, which are used in the scope of the study, are listed below in Table 2. Two of these corpora were academic (BAWE and KTUCALE) and the others were native and non-native argumentative corpora (TICLE and LOCNESS).

Corpus	Corpus size	SVC types		SVC tokens	
		Abs.	Rel.	Abs.	Rel.
KTUCALE	500,045	5	10	472	944
BAWE Linguistics	529,149	5	10	466	881
TICLE	203,923	5	25	254	1246
LOCNESS	326,093	5	16	566	1736

**Abs. = absolute frequency. Rel. = relative frequency. The relative frequency is acquired by normalizing the absolute frequency to a million token basis.*

Table 2: The overall SVC frequencies across the four corpora

The analysis of the four corpora reveals that non-native academic writers` (KTUCALE) use of support verb constructions is very slightly more than the native corpus BAWE, but shows a considerable difference from the other Turkish non-native argumentative corpus (TICLE). Table 2 above shows the relative frequencies of SVC types measured in per million words (ppm) in the KTUCALE corpus (10 ppm) and the same frequency was also measured in BAWE Linguistics (10 ppm). The relative frequency of SVC types was measured as 25 ppm in TICLE corpus and 16 in native argumentative corpus (LOCNESS). Similarly, the relative frequencies of SVC tokens were measured 944 for KTUCALE, 881 for BAWE, 1246 for TICLE and 1736 for LOCNESS.

The relative frequency of SVC tokens in the non-native academic corpus is (944 ppm) is slightly higher than BAWE linguistic corpus (881 ppm) but much lower than both native and non-native argumentative corpora (TICLE: 1246 ppm and LOCNESS: 1736 ppm). Less frequent use of SVCs by the native and non-native academic corpora (KTUCALE and BAWE) may be given to the fact that academic writing has certain conventions and word restrictions in scope and length and, thus, may have been avoided by the native and non-native academic writers (Swales, 2004).

Another interesting finding lies between the two native reference corpora (BAWE and LOCNESS). The total number of SVCs in native argumentative corpus is more than twice in the native academic corpus. The relative frequency of SVC tokens in the LOCNESS corpus is 1736 ppm. This number, however, is only 881(ppm) in native academic corpus (BAWE). These findings support the fact that the two native corpora display a huge difference in terms of quantity.

The present study focuses on the use of support verb constructions by Turkish-speaking learners of English in a tertiary level. For this learner group, no study of support verb constructions was reported so far. For this study, support verb constructions starting with head words such as *have, take, make, do* and *give* were taken as the focus (Sinclair J. &., 1990).

Table 3 below shows the relative frequencies of the SVCs that begin with "take". Based on the table it is possible to conclude that the native argumentative corpus (LOCNESS) contain the highest number of SVC tokens (503 ppm). Interestingly, this is followed by non-native academic corpus KTUCALE with a relative frequency of 418

(ppm). TICLE corpus, a non-native argumentative corpus contained the third highest number of SVC with a relative frequency of 295 (ppm). Finally, BAWE Linguistics corpus contained 144 (ppm) SVC samples, which is the lowest. Based on these findings, it is possible to conclude that SVCs are used in argumentation more than they are used in academic English. The reason for the surprisingly high level SVC s in KTUCALE (418) may be due to the fact that non-native academic writers may not have been restricted with the strong conventions of academic writing unlike their native academic counterparts.

Corpora	**Corpus Size**	**Take**	
		Abs.	Rel.
KTUCALE	500,045	209	418
BAWE Linguistics	529,149	76	144
TICLE	203,923	60	295
LOCNESS	326,093	503	503

Table 3: The frequency of "take" in four corpora

Table 4 below shows the relative frequencies of the SVCs that begin with "make". Interestingly enough the relative frequency of SVCs that begin with "make" is higher in both argumentative corpora. The native argumentative corpus (LOCNESS) and the non-native argumentative corpus (TICLE) contain the highest number of SVC tokens (834 ppm) when compared to the academic corpora. The total number of SVCs that begin with "make" in both academic corpora (BAWE and KTUCALE) is 459 (ppm), slightly more than the half. Based on these relative frequencies it is possible to conclude that although SVCs that begin with "make" are relatively more than the previous SVC, their relative frequencies are still lower than those in native and non-native argumentative corpora. This, again, points to the fact that tendency to us SVCs in writing is very much the practice of expository argumentation writers rather than academic ones. Tertiary level Turkish academic EFL writers produced the lowest number of SVCs in their academic writings hen compared to the other corpora. Yet, relative frequency of SVC samples that begin with "make" is still more than 150 (ppm), which may show that they still employ support verb constructions in their essays, though limited in scope and variety.

Corpora	**Corpus Size**	**Make**	
		Abs.	Rel.
KTUCALE	500,045	83	166
BAWE Linguistics	529,149	155	293
TICLE	203,923	66	324
LOCNESS	326,093	166	510

Table 4: The frequency of "make" in four corpora

Table 5 below show the relative frequencies of the SVCs that begin with "have/has". The relative frequencies of SVCs that begin with "have/has" is the highest in LOCNESS (470 ppm) but relatively stable in the other three corpora (220/252/216 ppm). This stability may arise from the fact that the head word "have/has" provide use various combinations each with different meaning and the native and the non-native writers may have found it convenient for use in academic writing as well as in expository argumentative writing.

Corpora	**Corpus Size**	**Have/Has**	
		Abs.	Rel.
KTUCALE	500,045	110	220
BAWE Linguistics	529,149	133	252
TICLE	203,923	44	216
LOCNESS	326,093	153	470

Table 5: The frequency of "have/has" in four corpora

Table 6 below shows the relative frequencies of the SVCs that begin with "give". It is interesting that TICLE corpus contains the highest number of SVCs with a relative frequency of 403 (ppm). This is followed by another expository argumentative corpus LOCNESS with a frequency of 221 (ppm). The ample use of SVCs beginning with "give" indicates that the use of SVCs is a largely accepted phenomenon among the native and non- native writers. KTUCALE corpus, on the other hand, includes the lowest number of SVCs. BAWE corpus contains two

times more SVC s than its non-native counterpart, which is also interesting considering the restrictive nature of academic writing in terms of word choice.

Corpora	Corpus Size	Give	
		Abs.	Rel.
KTUCALE	500,045	43	86
BAWE Linguistics	529,149	94	178
TICLE	203,923	82	403
LOCNESS	326,093	72	221

Table 6. The frequency of "give" in four corpora

Table 7 below summarizes the relative frequencies of the four corpora in terms of SVCs that begin with "do/does". It is interesting that all four corpora present very low levels of relative frequency towards the use of the SVCs. One reason may be the limited number of support verb constructions that are formed through "do" or "does" headwords. The relative overuse of these SVCs usages in KTUCALE (54 ppm) corpora may be given to such factors as L1 transfer and interlanguage developments of non-native learners in their academic writing. However, it is important to note that TICLE writers who are also non-native display very low level of relative frequency (10 ppm) with these items.

Corpora	Corpus Size	Do / Does	
		Abs.	Rel.
KTUCALE	500,045	27	54
BAWE Linguistics	529,149	8	16
TICLE	203,923	2	10
LOCNESS	326,093	11	34

Table 7: The frequency of "do/does" in four corpora

To sum up, it is found that the two Turkish corpora used in the study (KTCALE and TICLE) showed different results in terms of SVC use. The total relative frequency of SVCs was 944 (ppm) in the KTUCALE corpus and 1246 in TICLE. The main reason for this difference in the both can be given to the fact that the former was an academic learner corpora and the latter was an argumentative learner corpus. In other words, it may be possible to conclude that the use of SVCs in argumentative writing was more of a preference compared with the Turkish academic writers who were limited with the certain academic conventions, including the word choice. This result can also be supported by the number of SVCs in BAWE corpus, whose total relative frequency (881ppm) is akin to that of KTUCALE (944 ppm). The strict conventions and the word choices in academic writing seem to have influenced the word choices of the academic writers in both KTUCALE and BAWE. It may also be the case that argumentative writers as evidenced from the TICLE and LOCNESS corpora seemed to have used relatively significant amount of SVCs when compared to their academic counterparts. The reason for doing so may be the relatively more freedom of word choices in expository style writing.

CONCLUSION

Based on the findings related to the non-native corpora of tertiary level Turkish EFL students and the native corpora of British and American students, it can be argued that there were variations in terms of similarities and differences between the native and non-native writers. For the first research question, it can be seen from Table 4 that Turkish learners use more support verb constructions when they write academic essays. In other words, SVC content of KTUCALE (944 ppm) corpus is more than that of BAWE (881 ppm). In spite of the fact that the difference between the two academic corpora is not very big, the SVC content of Turkish corpora deserves further notice and attention. The reason behind this picture may be that Turkish academic writers were not strongly adhered to the strict academic writing conventions unlike their native academic counterparts.

However, it is obvious that in expository writing, Turkish learners fall below their native counterparts by means of support verb construction tokens. The relative frequency of LOCNESS (1736 ppm) corpus is more than that of TICLE corpus (1246 ppm). Thus, it can be concluded that for expository writing Turkish learners use support verb construction units less frequently than their native counterparts. This relative underuse in the non-native expository argumentative corpus may be given to the fact that Turkish writers feel themselves free compared to the academic writers. Yet, they need to develop their abilities to use more combination of words in their attempts to reach proficiency in English.

REFERENCES

Collins Cobuild Advanced Learner's Dictionary (Eight Edition ed.). (2014). London: Harper Collins.

Algeo, J. (1995). Having a look at the expanded predicate. In B. &. Aarts, *The Verb in Contemporary English* (pp. 203-217). Cambridge: Cambridge University Press.

Allerton, D. J. (2002). *Stretched Verb Constructions in English.* London and New York: Routledge.

Carter, R. (1987). *Vocabulary: Applied Linguistics Perspectives.* London: Routledge.

Danlos, L. (1992). Support verb constructions. Linguistic properties, representation, translation. *Journal of French Linguistic Study, 2*, 1-32.

Ellis, R. (1994). *The Study of Second Language Acquisition.* Oxford: Oxford University Press.

Krenn, B. (2000). *The Usual Suspects: Data-oriented Models for Identification and Representation of Lexical Collocations.* Saarbrücken: German Research Center for Artificial Intelligence.

Labuhn, U. (2001). *Von Give a Laugh bis Have a Cry. Zu Aspektualität und Transitivität der V+N Konstruktionen im Englischen.* Frankfurt: Peter Lang.

Lewis, M. (2000). *Teaching Collocation. Further Developments in the Lexical Approach.* Hove: LTP.

Mark, K. L. (1998). The significance of learner corpus data in relation to the problems of language teaching. *Bulletin of General Education, 312*, 77-90.

Nesselhauf, N. (2004). *Collocations in a Learner Corpus.* Amsterdam: John Benjamins.

Sinclair, J. &. (1988). A lexical syllabus for language learning. In C. a. R., *Vocabulary and Language Teaching* (pp. 140-160). London and New York: Longman.

Sinclair, J. &. (1990). *Collins Cobuild English Grammar.* London: Harper Collins.

Stein, G. (1991). The phrasal verb type 'to have a look' in Modern English. *International Review of Applied Linguistics, 29*, 1-19.

Swales, J. M. (2004). *Academic writing for graduate students: essential tasks and skills.* Ann Arbor, Mich: University of Michigan Press.

DETERMINATION OF THE EMPATHIC TENDENCIES AND ATTITUDES OF THE STUDENTS WHO STUDY AT THE SPORT SCIENCES FACULTIES TOWARDS PERSONS WITH DISABILITIES

Elif TOP
Faculty of Sport Sciences
Usak University
Turkey
elif.top@usak.edu.tr

ABSTRACT

The aim of present study was to investigate empathic tendencies and attitudes of the students who study at the sport sciences faculties of university towards persons with disabilities according to different variables. A total of 366 students in the age range of 17 to 33 (Male= 238, Female= 128) were participated voluntarily. "Personal Information Form" prepared by the investigator, "Empathic Tendency Scale (ETS) (Dokmen, 1988)" and "Attitude Towards Persons with Disabilities Scale (ATPDS) (Dokmen, 2000)" were used to collect information of students. The study results showed that there were significant differences in empathic tendency (ET) and sympathic tendency (ST) parameters according to gender, although there were not found in ATPDS and egocentric tendency (ECT). In terms of sport branches parameter, while there was no statistically significant difference found in ET and ECT; a significant difference was found in ATPDS and ST. According to whether students who took lessons related with disabilities and department types, there was no statistically significant difference found in ET, ECT, and ST, while it was found a significant difference in ATPDS. According to whether they have persons with disabilities in their family or in the close vicinity, there was no statistically significant difference found in ECT, while there was a significant difference found in ATPDS, ET and ST. A positive correlation was found between ATPDS and ET, although a correlation was not determined between ATPDS, ECT and ST. Consequently, it was found that sport branches, whether students who took lessons related with disabilities and department types, whether they have persons with disabilities in their family or in the close vicinity, made a positive impact on students who study at the sport sciences faculties of university attitudes towards persons with disabilities and empathic tendency level.
Keywords: Empathy, Disabilities, Sport, Education

INTRODUCTION

Many definitions have been made on empathy by scientists so far (Davis, 1983; Hoffman, 1990; Eisenberg & Strayer, 1990). According to Dökmen (1997); empathy is defined as the ability to put oneself in another's place and to understand his/her feelings and thoughts correctly. Barrett-Lennard (1993) stated that; the process of empathy takes place in four stages. Firstly; to perceive and understanding the feelings of individuals, secondly; to communicate, thirdly; the individuals feel that listened and understood by others, as the fourth; stated as self-expression of the individual. It is essential to know what others feel at the every stage of life. There are some studies indicating that empathic responses are important for social relations as the low empathy is associated with decreased social functioning (Hühnel et al., 2014; Bailey, Henry, & von Hippel, 2008; Findlay, Girardi, & Coplan, 2006). Personality is a concept that encompasses all aspects of human behavior. Emotions, character and values, temperament, attitudes, social, physical and cognitive features constitute a part of the personality (Senemoğlu, 2013). Attitudes like many of our behavior are not acquired by birth, subsequently acquired through learning (Aydın, 1985). In many studies related to empathic tendencies different variables like gender (Aydın & Karkaç, 2015; Özakgül et al., 2014; Ercan et al., 2014; Özcan et al., 2012; Cunico et al., 2012), martial and team athletes (Akçakoyun et al., 2010), individual sports (Mutlu et al., 2014) level of doing sports (Yılmaz & Akyel, 2008), students studying in different faculties of the university (Pala, 2008; Duru, 2002), training of empathy (Cunico et al., 2012), whether to have person with disabilities in the their family or closed environment (Aydın & Karkaç, 2015; Aydın & Açar, 2013) and personality subscales (Page & Islam, 2015) were examined.

According to Özer (2005), the concept of disability is defined as, restricting or failure to fulfill expected roles of a person due to an impairment and disability depending on age, gender, social and cultural factors. Attitudes towards people with disabilities, it is an important factor for the society and education (Benomir et al., 2016). Attitudes are influenced by many factors as the experiences passed as individual or group, mental, physical, social and emotional. Positive attitudes leads to take some decisions like acceptance of people with disabilities for psychological and social aspects (Werner et al., 2015), to develop programs for people with disabilities in the areas such as; education (Tindall et al., 2015), social (Keith et al., 2015), health (Ryan & Scior, 2014) and in the professional fields (Uysal et al., 2014). The negative attitudes are reported to cause decision like nonacceptance (de Boer & Munde, 2014) and distinction (Keith et al., 2015). Empathy skills of individuals play an important role in attitudes towards people with disabilities. In the studies on attitudes towards people with disabilities,

different variables were investigated: gender factor (Çavuşoğlu et al., 2014; Sarı et al., 2010; McDougall et al., 2004), the type of school which he/she graduated (Sarı et al., 2010), whether received training (Şahin & Güldenoğlu, 2013; Bergman & Hanson, 2000; Alptekin & Batık, 2013), whether to have person with disabilities in the their family or closed environment (Sarı et al., 2010; Çavuşoğlu et al., 2014; Çolak & Metin, 2014).

In this research; it was aimed to investigate empathic tendencies and attitudes of students who study at the sport sciences faculties of university towards persons with disabilities according to different variables.

MATERIAL AND METHODS

The sample of the study was consisted a total of 366 students, who were studying in different departments at the Sport Science Faculty. Their ages range from 17 to 33. The study sample consists of 35% of female (n = 128) and 65% of male students (n = 238). Personal Information Form containing the students' socio-demographic characteristics which was prepared by the investigator, "Empathic Tendency Scale (ETS)" developed by Dökmen (1988) to evaluate empathic tendencies and "Attitude Towards Persons with Disabilities Scale (ATPDS)" developed by Dökmen (2000) to evaluate attitudes towards people with disabilities, were used to collect data. In the implementation phase of the study, the information was given to students about the scales and it was guaranteed that they did not influence each other. This study was conducted upon approval of the Scientific Researches and Publication Ethic Board of the Usak University dated with 09/06/2016-E17343.

Data Collection Tools

Empathic Tendency Scale (ETS)

Empathic Tendency Scale (ETS), was developed by Dökmen (1988) in order to assess their empathy potential in the daily lives of individuals. The scale is a likert type scale which consists of 20 items and every item gets a score from 1 to 5. However, substances of 3,6,7,8,11,12,13,15, are scored reversely. The lowest score a person can get from the scale is 20 while the highest score is 100. Total score expresses emphatic tendency scores of individuals. The higher score shows that the individual's empathic tendency is high while the lower score shows that the individual's empathic tendency is low. ETS by Dökmen (1988) was administered to a student group of 70 people with test-retest method, twice in three weeks apart. The reliability of the scale is 0.82 which was obtained from this application. Split-half reliability between the scores of the subjects from odd and even numbers was found to be 0.86. The scale reliability coefficient calculated by The Cronbach's alpha was 0.72 for the research group.

Attitude Towards Persons with Disabilities Scale (ATPDS)

Attitude Towards Persons with Disabilities Scale (ATPDS)" developed by Dökmen (2000) is a likert type scale which consists of 30 items and every item gets a score from "Strongly agree" 1, "Agree" 2, "Undecided" 3, "Disagree" 4, to "Strongly disagree" 5. However, substances of 2, 11, 12, 14, 15, 16, 17, 19, 22, 25, are scored reversely. The lowest score a person can get from the scale is 30 while the highest score is 150.

Statistical Analysis

Windows SPSS IBM statistical software is utilized in statistical analysis. For statistical analysis, results were displayed as average values and standard deviation. In comparisons, $\alpha = 0.05$ significance level is taken into consideration. In order to determine whether there is significant difference among groups in terms of attitudes towards persons with disabilities and empathic tendency, Independent Samples T-test and One-Way ANOVA were conducted. Tukey HSD has been used as a second level test in order to evaluate the differences between the groups. The relationship between empathic tendency and attitudes towards persons with disabilities was analyzed by Pearson correlation.

RESULTS

According to the findings, it was determined that the average of scores of individuals' ATPDS was $\bar{X}= 104.29\pm15.31$, ETS score was $\bar{X}= 68.86\pm7.23$.

Table 1. Results of ATPDS and ETS regarding to Gender

	Groups	*N*	*Mean*	*Sd*	*t*	*p*
ATPDS	*Female*	128	106.00	16.51	1.572	.117
	Male	238	103.37	14.59		
ET	*Female*	128	35.36	4.79	2.067	.039*
	Male	238	34.26	4.93		
ECT	*Female*	128	21.32	5.14	1.607	.109
	Male	238	20.48	4.48		
ST	*Female*	128	13.79	2.23	2.777	.006*
	Male	238	13.08	2.39		

**p< 0.05*

When the test results were evaluated, a statistical difference was found between empathic tendency (ET) and sympathic tendency (ST) points of groups (P<0.05), while there was no a statistical difference in ATPDS ve egocentric tendency (ECT) points (P>0.05) (Table 1).

Table 2. Results of ATPDS and ETS regarding to Sport Branches

	Groups	*N*	$\bar{X}$	*Sd*	*t*	*p*
ATPDS	*Individual Sports*	91	108.37	17.18	2.961	.003*
	Team Sports	275	102.94	14.42		
ET	*Individual Sports*	91	34.42	5.21	-.491	.624
	Team Sports	275	34.72	4.80		
ECT	*Individual Sports*	91	20.78	5.10	.004	.997
	Team Sports	275	20.77	4.61		
ST	*Individual Sports*	91	13.96	2.14	2.982	.003*
	Team Sports	275	13.12	2.39		

**p< 0.05*

In terms of sport branches; there was no significant difference between ET and ECT points of groups (P>0.05), while there was a statistical difference between ATPDS and ST points (P<0.05) (Table 2).

Table 3. Results of ATPDS and ETS regarding to Department Types

	Groups	*N*	$\bar{X}$	*Sd*	*F*	*p*
ATPDS	*Department of Physical Application and Sports Teaching*	225	108.14	17.31	20.550	.000*
	Department of SportsManagement	107	97.82	8.23		
	Department of Coach Training in Sports	34	99.17	8.85		
ET	*Department of Physical Application and Sports Teaching*	225	34.60	4.88	.059	.943
	Department of SportsManagement	107	34.77	5.16		
	Department of Coach Training in Sports	34	34.50	4.33		
ECT	*Department of Physical Application and Sports Teaching*	225	20.57	4.57	.588	.556
	Department of SportsManagement	107	21.01	5.15		
	Department of Coach Training in Sports	34	21.35	4.47		
ST	*Department of Physical Application and Sports Teaching*	225	13.39	2.33	.233	.792
	Department of SportsManagement	107	13.20	2.58		
	Department of Coach Training in Sports	34	13.32	1.77		

**p< 0.05*

The results of study showed that there was significant difference in ATPDS points (P<0.05), although there was no statistically significant difference in ET, ECT and ST points according to department types in which students study (P>0.05) (Table 3). ATPDS points of students who study at the Department of Physical Application and Sports Teaching were significantly higher than students of Department of Coach Training in Sports and Department of Sports Management, respectively.

Table 4. Results of ATPDS and ETS regarding to Whether Students Who Took Lessons Related with Disabilities

	Groups	*N*	$\bar{X}$	*Sd*	*t*	*p*
ATPDS	*Yes*	147	101.21	12.44	-3.195	.002*
	No	219	106.36	16.68		
ET	*Yes*	147	34.65	4.56	.018	.986
	No	219	34.64	5.13		
ECT	*Yes*	147	20.38	4.32	-1.317	.189
	No	219	21.04	4.98		
ST	*Yes*	147	13.16	2.35	-1.128	.260
	No	219	13.44	2.36		

**p< 0.05*

In term of whether students who took lessons related with disabilities, there was no statistically significant difference between ET, ECT and ST points of groups (P>0.05), while there was a statistical difference in ATPDS (P<0.05) (Table 4).

Table 5. Results of ATPDS and ETS regarding to Whether They have Persons with Disabilities in Their Family or in the Close Vicinity

	Groups	*N*	$\bar{X}$	*Sd*	*t*	*p*
ATPDS	*Yes*	39	109.41	18.31	2.218	.027*
	No	327	103.68	14.83		
ET	*Yes*	39	33.17	5.92	-1.984	.048*
	No	327	34.82	4.75		
ECT	*Yes*	39	21.12	4.81	.487	.627
	No	327	20.73	4.73		
ST	*Yes*	39	12.48	2.64	-2.380	.018*
	No	327	13.43	2.31		

**p< 0.05*

In term of whether they have persons with disabilities in their family or in the close vicinity, there was a significant difference between ATPDS, ET and ST points (P<0.05), although there was no a statistical difference in ECT points (P>0.05) (Table 5).

Table 6. The Relationship between ATPDS and Subscales of ETS

	ET	***ECT***	***ST***
ATPDS	.133*	-.093	.076

****** p<0.05*

A positive correlation was found between ATPDS and ET (r= .133, p<0.05), although a correlation was not determined between ATPDS and ECT (r= -.093, p>0.05), ATPDS and ST (r= .076, p>0.05) (Table 6).

DISCUSSION AND CONCLUSIONS

In this study, empathic tendencies and attitudes of the students who study at the different departments of the sport sciences faculty in university towards persons with disabilities were investigated according to different variables. According to the findings, it was determined that the average of scores of individuals' ATPDS were $\bar{X}$= 104.29±15.31, ETS score were $\bar{X}$= 68.86±7.23. It could be said that empathic tendencies and attitudes of the students in different departments of the sport science faculty in university towards persons with disabilities are above the average and their attitudes towards these individuals at a high level.

The scores of female ET and ST were found significantly higher than scores of male, while there was no statistical difference in between ATPDS and ECT points of female and male students. Although a statistically significant difference was not found between the groups in our study, the mean scores of female ATPDS were higher than the mean scores of male ATPDS. In some studies, it was reported that women exhibited more positive attitudes towards people with disabilities than man (Çavuşoğlu et al., 2014; Sarı et al., 2010; McDougall et al., 2004; Gash & Coffey, 1995; Lau & Cheung, 1999). As in our study, levels of female ET were significantly higher than the male in several studies (Aydın & Karkaç, 2015; Özakgül et al., 2014; Ercan et al., 2014; Özcan et al., 2012; Cunico et al., 2012). Our study results are consistent with findings in the literature.

The mean scores of ATPDS and ST of individual sports group were significantly higher than the mean scores of team sports group, while there was no significant difference in the mean scores of ET and ECT of team and individual sports (P>0.05). There are some studies that support our findings. Akçakoyun et al. (2010) compared the empathic tendencies of martial and team athletes; Yılmaz & Akyel (2008) investigated empathic tendencies of students according to level of doing sports, and Mutlu et al. (2014) compared the empathic tendencies of tenis players who study in Schools Physical Education and Sport and in other faculties of universities. In our study, individuals dealing with individual sports are seen to exhibit more positive attitudes towards people with disabilities.

The results of study showed that there was significant difference in ATPDS points, although there was no statistical difference in ET, ECT and ST points according to department types in which students study. ATPDS points of students who study at the Department of Physical Application and Sports Teaching were significantly higher than the students of Department of Coach Training in Sports and students of Department of Sports Management, respectively. In Pala's study (2008), scores of ET of students who study in Social Studies Degree Program were determined higher than the scores of students who study in different faculties. Similarly, Duru's (2002) study showed that tendency of helping of students who study in Faculty of Education and Social Sciences Degree Program observed higher than students in other faculties. The difference was not found between departments in our research, which may result from the implementation of similar curriculum and that these individuals are doing all sports, so that having the same characteristics. Sarı et al. (2010) stated that a statistically significant difference was observed in the mean scores of attitudes towards people with disabilities between the groups according to the school in which students receive education. These study results support the findings of our study. Şahin & Güldenoğlu (2013) indicated that there was no found difference between the groups regarding to the type of school which he/she graduated. Studying in School of Physical Education and Sport, taking the course in educational sciences and having more courses associated with special education based on the number of hours according to other departments, are expected to influence it.

In term of the whether students who took lessons related with disabilities, there was n found significant difference between ET, ECT and ST points of groups, the ATPDS scores of students who did not take lessons related with disabilities were significanly higher than the ATPDS scores of students who took lessons related with disabilities. Cunico et al. (2012) pointed out that empathy training was found to be effective on the development of students' skills of empathy. In many studies, there was no difference between the groups in attitudes towards persons with disabilities (Bergman & Hanson, 2000; Şahin & Güldenoğlu, 2013). Some studies indicated positive attitudes towards persons with disabilities (Alptekin & Batık, 2013; Çavuşoğlu et al., 2014). Having different results in the studies; these individuals are thought to have differences due to their knowledge and experiences about people with disabilities.

Significant difference was found between ATPDS, ET and ST points according to whether they have persons with disabilities in their family or in the close vicinity, although there was no statistical difference in ECT points. Students who have persons with disabilities in their family or in the close vicinity, had higher scores of ATPDS than students who have not. Students who have not persons with disabilities in their family or in the close vicinity, had higher scores of ET and ST than students who have. Some researches showed no difference between scores of the groups regarding to have persons with disabilities in their family or in the close vicinity (Sarı et al., 2010; Çavuşoğlu et al., 2014), while some studies indicated that it is important to being in contact with people with disabilities affects positively people's attitudes towards to these individuals (Çolak & Metin, 2014; Cameron & Rutland, 2006; Marom et al., 2007; Parasuram, 2006). In study of Aydın & Karkaç (2015), It could not detect a significant difference between in empathic tendencies of teachers who work in special education according to whether they have individuals with disabilities in their family or close vicinitiy. In a study by Aydın & Açar (2013), empathic tendencies of mothers who not have individuals with disabilities were significantly higher than mothers who have. It could be explained, to have lower empathy of the families who have individuals with disabilities, because of staleness level of this family.

A positive correlation was found between the scores of ATPDS and ET of students, although a correlation was not determined between ATPDS and ECT, ATPDS and ST. Page & Islam's (2015) study indicated that higher levels of personality dimensions such as openness and agreeableness have been found to be associated with attitudes towards people with intellectual disability.

Consequently, it was found that sport branches, whether students who took lessons related with disabilities and department types, whether they have persons with disabilities in their family or in the close vicinity, made a positive impact on students who study at the sport sciences faculties of university, their attitudes towards persons with disabilities and empathic tendency levels.

REFERENCES

Akçakoyun, F., Çalışkan, E., Karlı, H. (2010). Dövüş ve takım sporcularının empati düzeylerinin karşılaştırılması. Türkiye Kickboks Federasyonu Spor Bilimleri Dergisi, 3(2): 1309-1336.

Alptekin, S., Batık, M.V. (2013). Özel eğitim bölümü öğrencilerinin yetersizlikten etkilenmiş kişilere yönelik tutumlarına özel eğitim dersinin etkisi. e-International Journal of Educational Research, 4(4): 18-34.

Aydın, A., Açar, K. (2013). Normal ve zihin engelli ergenlerin empati becerileri ile annelerinin empati becerilerinin incelenmesi. Mersin University Journal of the Faculty of Education, 9(2): 301-314.

Aydın, A., Karkaç, N.N. (2015). Özel eğitim alanında çalışan öğretmenlerin empatik eğilim düzeylerinin çeşitli değişkenlere göre incelenmesi. Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi, 24: 43-65.

Aydın, O. (1985). Davranış Bilimine Giriş. Eskişehir: Anadolu Üniversitesi Açık Öğretim Fakültesi Yayınları.

Bailey, P.E., Henry, J.D., von Hippel, W. (2008). Empathy and social functioning in late adulthood. Aging & Mental Health, 12(4): 499-503.

Barrett-Lennard, G.T. (1993). The phases and focus of empathy. Br J Med Psychol, 66: 3-14.

Benomir, A.M., Nicolson, R.I., Beail, N. (2016). Attitudes towards people with intellectual disability in the UK and Libya: A cross-cultural comparison. Research in Developmental Disabilities, 51-52: 1-9.

Bergman, M.M., Hanson, C.S. (2000). The relationship between participation in a sports cAMP and students' attitudes towards persons with disabilities. Occup Ther Health Care, 12(4): 51-63.

Cameron, L., Rutland, A. (2006). Extended contact through story reading in school: Reducing students' prejudice toward the disabled. Journal of Social Issues, 62(3): 469-488.

Çavuşoğlu, G., Unver, S., Islamoglu, I., Makaracı, Y. (2014). A research of the attitudes of sports sciences students towards disabled people. Turkish Journal of Sport and Exercise, 16(3): 26-30.

Çolak, M., Çetin, C. (2014). Öğretmenlerin engelliliğe yönelik tutumları üzerine bir araştırma. Dokuz Eylül Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 29(1): 191-211.

Cunico, L., Sartori, R., Marognolli, O., Meneghini, A.M. (2012). Developing empathy in nursing students: A cohort longitudinal study. Journal of Clinical Nursing, 21: 2016-2025.

Davis, Hm. (1983). Individual differences in empathy: Evidence for a multidimensional approach. Journal of Personality and Social Psychology, 44(1): 113-126.

de Boer, A.A., Munde, V.S. (2014). Parental attitudes toward the inclusion of children with profound intellectual and multiple disabilities in general primary education in the Netherlands. Journal of Special Education, 1-9.

Dökmen, Ü. (1997). İletişim Çatışmaları ve Empati. İstanbul: Sistem Yayıncılık, 14. Baskı.

Dökmen, Ü. (1988). Empatinin yeni bir modele dayanılarak ölçülmesi ve psikodrama ile geliştirilmesi. A.Ü. Eğitim Bilimleri Fakültesi Dergisi, 21(2): 155-190.

Dökmen, Z.Y., (2000). Engellilere yönelik tutum ölçeği, geliştirilmesi, geçerliği ve güvenirliği (bildiri). XI. Ulusal Psikoloji Kongresi, 20-22 Eylül, Ege Üniversitesi, İzmir.

Duru, E. (2002). Öğretmen adaylarının empati-yardım etme eğilimleri ilişkisi ve yardım etme eğiliminin bazı değişkenler açısından incelenmesi. Pamukkale Üniversitesi Eğitim Fakültesi Dergisi, 12: 21-36.

Erbaydar, N.P., Caman, O.K., Cilingiroglu, N. (2013). How do municipality employees in Ankara approach persons with disabilities? Disability and Health Journal, 6: 391-398.

Ercan, Z.G., Ahmetoğlu, E., Ergin, D.Y. (2014). Analyzing the emphatic tendency of pre-service preschool teachers. World Applied Sciences Journal, 32(2): 253-258.

Esinberg, N., Straye, J. (1990). Critical Issues in the Study of Empathy. Esinberg N., Strayer, J.(Editors), Empathy and Its Development. New York: Cambridge University Press, 3-13.

Findlay, L.C., Girardi, A., Coplan, R.J. (2006). Links between empathy, social behavior, and social understanding in early childhood. Early Childhood Research Quarterly, 21(3): 347-359.

Gash, H., Coffey, D. (1995). Influences on attitudes towards children with mental handicap. European Journal Special Needs Education, 10: 1-16.

Hoffman, M.L. (1990). The Contribution of Empathy to Justice and Moral Judgment. In: Esinberg N., Strayer, J. (Editors), Empathy and Its Development. New York: Cambridge University Press, 47-80.

Hühnel, I., Fölster, M., Werheid, K., Hess, U. (2014). Empathic reactions of younger and older adults: No age related decline in affective responding. Journal of Experimental Social Psychology, 50: 136-143.

Keith, J.M., Bennetto, L., Rogge, R.D. (2015). The relationship between contact and attitudes: Reducing prejudice toward individuals with intellectual and developmental disabilities. Research in Developmental Disabilities, 47: 14-26.

Kocak, C., Onen, A.S. (2013). Emphatic Tendency Scale for Student Teachers: Validity and Reliability Studies. Educational Sciences: Theory & Practice - 13(2) Spring, 958-964.

Lau, J.T., Cheung, C.K. (1999). Discriminatory attitudes to people with intellectual disabilities or mental health difficulty. International Social Work, 42: 431-444.

Marom, M., Cohen, D., Naon, D. (2007). Changing disability-related attitudes and self-efficacy of ısraeli children via the partners to ınclusion programme. International Journal of Disability, Development and Education, 54(1): 113-127.

McDougall, J., DeWit, D., King, G., Miller, L., Killip, S. (2004). High school-aged youths' attitudes toward their peers with disabilities: The role of school and student interpersonal factors. International Journal of Disability Development and Education, 51: 287-313.

Mutlu, T.O., Şentürk, H.E., Zorba, E. (2014). Empathic tendency of university students in tennis and communication skills. International Journal of Science Culture and Sport (IntJSCS), (1). Doi : 10.14486/IJSCS85.

Özakgül, A.A., Şendir, M., Atav, A.S., Kızıltan, B. (2014). Attitudes towards HIV/AIDS patients and empathic tendencies: A study of Turkish undergraduate nursing students. Nurse Education Today, 34: 929-933.

Özcan, C.T., Oflaz, F., Bakır, B. (2012). The effect of a structured empathy course on the students of a medical and a nursing school. Int. Nurs. Rev., 59: 532-538.

Özer, D.S. (2005). Engelliler için Beden Eğitimi ve Spor. Ankara: Nobel Yayın Dağıtım, p.2.

Page, S.L., Islam, M.R. (2015). The role of personality variables in predicting attitudes toward people with intellectual disability: An Australian perspective. J Intellect Disabil Res, 59(8): 741-5.

Pala, A. (2008). Öğretmen adaylarının empati kurma düzeyleri üzerine bir araştırma. Pamukkale Üniversitesi Eğitim Fakültesi Dergisi, 23(1): 13-23.

Parasuram, K. (2006). Variables that effect teachers' attitudes toward disability and inclusive education in Mumbai, India. Disability and Society, 21(3): 232-242.

Ryan, T.A., Scior, K. (2014). Medical students' attitudes towards people with intellectual disabilities: A literature review. Research in Developmental Disabilities, 35(10): 2316-2328.

Şahin, F., Güldenoğlu, B. (2013). Engelliler konusunda verilen eğitim programının engellilere yönelik tutumlar üzerindeki etkisi. Amasya Üniversitesi Eğitim Fakültesi Dergisi, 2(1): 214-239.

Sarı, H.Y., Bektaş, M., Altıparmak, S. (2010). Hemşirelik öğrencilerinin engelillere yönelik tutumlarının belirlenmesi. Yeni Tıp Dergisi, 27: 80-83.

Senemoğlu, N. (2013). Gelişim, öğrenme ve öğretim. Ankara: Yargı Yayınevi. s.78.

Tindall, D., MacDonald, W., Carroll, E., Moody, B. (2015). Pre-service teachers' attitudes towards children with disabilities: An Irish perspective. European Physical Education Review, 21(2): 206-221.

Uysal, A., Albayrak, B., Koçulu, B., Kan, F., Aydin, T. (2014). Attitudes of nursing students toward people with disabilities. Nurse Education Today, 34(5): 878-884.

Werner, S., Peretz, H., Roth, D. (2015). Israeli children's attitudes toward children with and without disabilities. Early Childhood Research Quarterly, 33: 98-107.

Yılmaz, İ., Akyel, Y. (2008). Beden eğitimi öğretmen adaylarının empatik eğilim düzeylerinin çeşitli değişkenler açısından incelenmesi. Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi (KEFAD), 9(3): 27-33.

DEVELOPING A SCALE TO EVALUATE TEACHING AND LEARNING SITUATIONS IN SECONDARY SCHOOL CURRICULA

Assoc. Prof. Dr. İjlal OCAK
Afyon Kocatepe University, Faculty of Education, Turkey
iocak@aku.edu.tr

Assoc. Prof. Dr. Gürbüz OCAK
Afyon Kocatepe University, Faculty of Education, Turkey.
gurbuzocak@gmail.com

Lecturer Serkan BOYRAZ
Afyon Kocatepe University, Faculty of Education, Turkey
serkan.boyraz@gmail.com

ABSTRACT
As the needs of the individuals have gone under big changes parallel to the continuous and extensive improvements in information technologies, curricula have also been changed in order to be able to adapt and respond them. In the new curricula, terms such as student-centeredness and flexibility which are difficult to define and apply are emphasized in the teaching and learning situations which are directly about the students. More research is needed to reveal the effectiveness, weak and strong parts of the new curricula and teachers are one of and probably the most important source of information in this term as they are who put the new curricula in practice and see the firsthand results. Following it, this study aims to develop a scale to evaluate teaching and learning situations of curricula put in practice in 2013 in secondary schools (grade 9-12) by teachers and reveal their strength and weakness, deficiencies and halting points. First, scale items will be written depending on literature review findings and results of interviews with field teachers. Later, prior study of likert type items will be carried out with 10-15 teachers and required corrections will be done on items. Then, pilot stud will be done with the required number of sample depending on item number. Data acquired from pilot study will be analyzed for reliability and validity and factor analysis will be done. The scale for evaluating the teaching and learning situations in secondary school curricula will be ready to apply after required analysis.

Keywords: secondary school curricula, curriculum evaluation, teaching and learning situation, scale development

INTRODUCTION

Notwithstanding the influence of factors such as socio-economic status, home, and community, student learning is strongly influenced by what and how teachers teach (Timperley, 2008). Maintaining a positive and organized classroom setting free from disruption is critical to providing an instructional environment conducive to teaching and learning (Skiba, Ormiston, Martinez, & Cummings, 2016). According to Department of Education and Early Childhood Development (2016) a student-centered approach which actively engages the young person in the learning process is critical if skills which result in healthy behaviors are to be fostered and developed. Some of the learning strategies that could be incorporated in a comprehensive approach include self-directed learning, co-operative learning, role playing, behavioral rehearsal, peer education and parent involvement. Consideration should be given to allowing students to plan some learning experiences. They could be provided with opportunities to identify topics or areas for further study, contribute information relevant to an issue for study and/or make suggestions for follow-up activities.

Prawat (1992) stated that the education system in the USA was in the midst of a major paradigm shift which was argued as "a revolution" by Goldman (1989) and according to him it represents "one of those rare periods in history when large numbers of people are receptive to major changes in education." This inference is supported by results from Gallup poll in education sponsored by Phi Delta Kappa. For the first time in its 20-year history then, the poll showed the public favored drastic overhaul of the educational system-including the adoption of a national curriculum and national educational standards (Elan and Gallup 1989). This “revolution” was more than two decades ago when the technology wasn’t as effective as today. The 21st century is about the management of all the knowledge and information, we have generated and the value addition we bring to it. But we should continue with lifelong learning (Sharma, 2016). In the light of all these 21st century educational theories, all the curricula in all classes have been continuously changing in Turkey since 2005 when a reform movement to follow constructivism started. These changes aim to create a teaching and learning situation in class that results with more active students, individualized education and supporting students’ holistic development. It will help students to have a deep understanding if students experience the followings in the teaching and learning process (MEB, 2011):

explore, wonder and question, do experiments and observations, reach the concepts, relate new information with the old, practice and solve problems in different ways.

Problem

Although it is common to evaluate curricula through teacher opinions, these studies are generally carried out through qualitative data coming from interviews and this results in difficulty of comparing studies of curriculum evaluation. Focusing on the teaching and learning situations in the curricula, the question is: "How can we collect teacher opinions on curricula in a more comparable way?"

Aim

The aim of the study is to develop a "Teaching and learning situations evaluation scale" which will give the opportunity to make direct comparisons among similar studies of curriculum evaluation and let researchers who aim to evaluate teaching and learning situations use it in all courses.

METHOD

This study was carried out to do reliability and validity analyses of the teaching and learning situations evaluation scale, so the study employs survey method which aims to gather people's perceptions, opinions, attitudes, and beliefs about a current issue in education (Lodico, Spaulding, & Voegtle, 2010).

Sample

The universe is secondary teachers of all courses who work in Afyon. After required permission was given by the Provincial Directorate of National Education, the teachers were asked to fill the scale which was formed online and distributed through a link or handed personally by the teachers. It was seen that 380 teachers filled the scale but only 357 were appropriate for data analyses.

Data Analysis

Exploratory factor analysis, item-total correlation and 27% bottom-top group comparisons were made for validity and Cronbach alpha value was calculated for reliability.

Data Collection Tool

In the process of scale development, the national and international literature (for example, Çakmak and Gürbüz, 2014; Öksüz, 2015; Ocak and Ataseven, 2015; Hung, Liu, Lin, & Lee, 2016; Baker, Brown, Wilcox, Overstreet, & Arora, 2016) was reviewed and 57 items were written for the pilot study. The items were controlled for language and structure validity by the experts and then piloted on 20 teachers. The final form of the scale was then formed through the feedback from experts and the pilot study.

FINDINGS

Kaiser–Meyer–Olkin measure of sampling adequacy (KMO) and *Bartlett's test* which is a test that examines whether the population correlation matrix resembles an identity matrix values were examined before starting the exploratory factor analyses in order to check the appropriateness of the data to factor analysis (Field, 2009).

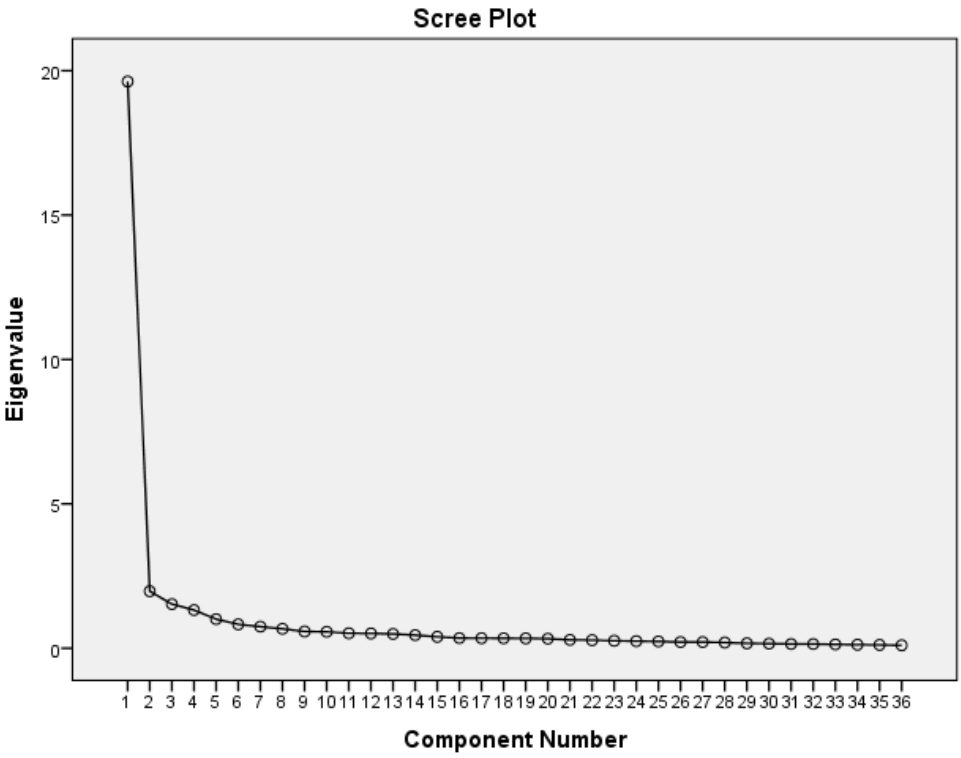


Figure-1 Scree Plot

KMO value is .970 and Barlett's test is .000. As the results indicate that data set is appropriate for factor analysis because KMO is higher than 0.50 and .970 is superb and Barlett's test is significant ($p<.05$), factor analysis was carried out. According to the results, the scale consists of a single factor (Figure-1). It was seen that 21 items had factor loadings lower than .40 and they were excluded from further analyses.

Table-1 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.627	54.519	54.519	19.627	54.519	54.519
2	1.976	5.488	60.007			
3	1.530	4.249	64.256			
4	1.322	3.672	67.928			
5	1.008	2.800	70.728			
6	.827	2.297	73.025			
7	.748	2.078	75.103			
8	.672	1.867	76.969			
9	.580	1.612	78.582			
10	.569	1.581	80.163			
11	.520	1.443	81.606			
12	.514	1.427	83.033			
13	.495	1.374	84.407			
14	.453	1.258	85.665			
15	.396	1.101	86.766			
16	.352	.977	87.743			
17	.349	.969	88.712			
18	.346	.962	89.674			
19	.342	.951	90.625			
20	.333	.926	91.551			
21	.292	.811	92.362			
22	.280	.777	93.139			
23	.260	.723	93.862			
24	.246	.682	94.544			
25	.237	.658	95.202			
26	.217	.602	95.804			
27	.215	.596	96.400			
28	.198	.550	96.950			
29	.172	.477	97.427			
30	.158	.440	97.867			
31	.148	.411	98.278			
32	.146	.405	98.683			
33	.134	.371	99.054			
34	.124	.344	99.399			
35	.115	.320	99.718			
36	.101	.282	100.000			

Extraction Method: Principal Component Analysis.

After 21 items were excluded from further analysis, the remaining 36 items explain 54.519% of the total variance.

Another way of examining the validity in item analysis is to compare 27% bottom-top groups' means (Can, 2014). Accordingly, the highest and lowest scores of 96 participants were compared through independent samples t-test.

Table-2 Bottom-top Group Comparisons

Items	t	Sig. (2-tailed)
1- Sample activities are student-centered.	10.059	.000
2- Sample activities are teacher-centered.	.058	.954
3- Activities are applicable.	10.414	.000
4- Teaching and learning experiences are consistent with the objectives.	12.499	.000
5- Teaching and learning approaches are appropriate to the field of study.	15.222	.000
6- Resulting activities such as discussion, trip, observation, experiment, summarizing, production in the end of learning experiences are directive for the teacher.	17.152	.000
7- Activities support learning by doing and experiencing.	18.187	.000
8- Activities are organized by keeping student interests, needs and demands in mind.	19.860	.000
9- Teaching and learning process develops critical thinking ability.	25.244	.000
10- Teaching and learning process develops creative thinking ability.	22.162	.000
11- Teaching and learning process develops research, questioning and deciding abilities.	24.813	.000
12- Teaching and learning process develops problem solving ability.	24.193	.000
13- Teaching and learning process develops communication ability.	23.444	.000
14- Teaching and learning process develops correct, effective and good use of Turkish ability.	22.892	.000
15- Teaching and learning process develops entrepreneurship ability.	20.210	.000
16- Teaching and learning process develops information technology using ability.	22.793	.000
17- Teaching and learning process supports 5E instructional model.	16.933	.000
18- Teaching and learning process directs towards discussion methods like debate, panel, open forum etc.	18.391	.000
19- Teaching and learning activities direct towards group work.	20.904	.000
20- Teaching and learning process directs towards teacher-centered methods such as direct method, question and answer, etc.	4.674	.000
21- Teaching and learning activities direct towards group work.	19.976	.000
22- Methods and techniques are consistent with objectives.	21.687	.000
23- Methods and techniques are consistent with content.	22.316	.000
24- Activities can be done both in and out of the school.	19.981	.000
25- The teacher is a guide who leads the students and improves him/herself in the process.	16.249	.000
26- Curriculum offers materials to be used in the activities.	19.001	.000
27. The materials used in teaching and learning process can easily be reached in all regions.	17.239	.000
28. Sample activities are appropriate to students' level.	18.654	.000
29. A learning experience is in interaction with the others.	24.019	.000
30. Activities can be done both in and out of the school.	18.988	.000
31. Learning experiences support the upper class attainments.	17.568	.000
32. There are examples of how to use EBA in the teaching and learning process.	9.535	.000
33. The teaching and learning process directs teachers to use digital materials.	9.218	.000
34. The teaching and learning process directs students to use digital materials.	10.276	.000
35. A classroom seating plan is provided appropriate to the activities in the curriculum.	13.308	.000
36. There are explanations in the curriculum about classroom management.	14.602	.000

According to the results shown in Table-2, there is a significant difference between the bottom and top groups in all items ($p<.05$) except number 2 ($p=.954$; $p>.05$). As a result, this item should be excluded from further analysis.

Kaiser–Meyer–Olkin measure of sampling adequacy (KMO) and Bartlett's test were repeated after excluding 22 items due to insufficient factor loading or insignificant difference in bottom-top groups. The next KMO value is .971 and Barlett test is significant ($p=.00$; $p<.05$). Then the exploratory factor analysis was repeated and it was seen that factor loading of the item 20 is lower than .40, so it was excluded from further analysis. Then, analyses were repeated with a total of 34 items. Finally, KMO value is .971 and Barlett test is significant ($p=.00$; $p<.05$) for the remaining 34 items.

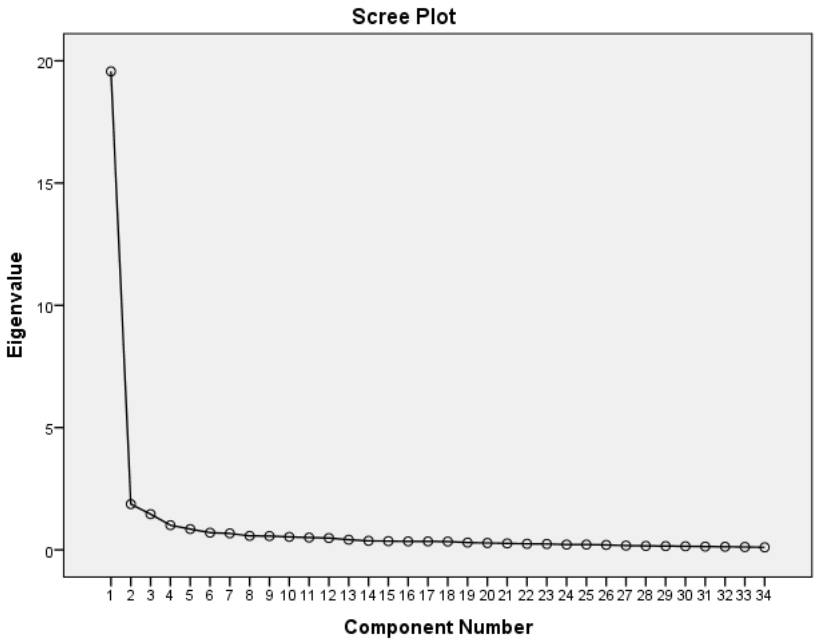


Figure-2 Scree Plot for 34 Items

According to factor analysis, 34 items in the scale again goes under one single factor (Figure-2). After excluding a total of 23 items in the analyses, the remaining 34 items explain 57.545 of the total variance (Table-3). The Cronbach alpha reliability value is .976.

Table-3 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.565	57.545	57.545	19.565	57.545	57.545
2	1.871	5.503	63.047			
3	1.457	4.286	67.333			
4	1.007	2.960	70.294			
5	.850	2.500	72.794			
6	.703	2.066	74.860			
7	.671	1.974	76.834			
8	.570	1.676	78.510			
9	.562	1.653	80.163			
10	.531	1.560	81.724			
11	.502	1.477	83.200			
12	.482	1.418	84.619			
13	.412	1.213	85.832			
14	.370	1.088	86.920			
15	.355	1.044	87.963			
16	.347	1.020	88.983			
17	.344	1.013	89.996			
18	.338	.994	90.990			
19	.297	.873	91.863			
20	.281	.826	92.689			
21	.261	.768	93.457			

22	.247	.726	94.183
23	.239	.702	94.885
24	.217	.637	95.522
25	.215	.633	96.156
26	.201	.591	96.746
27	.173	.508	97.255
28	.159	.467	97.721
29	.152	.446	98.168
30	.147	.431	98.599
31	.134	.394	98.992
32	.125	.368	99.360
33	.116	.342	99.702
34	.101	.298	100.000

Extraction Method: Principal Component Analysis.

Another way to check the reliability of a scale is to calculate item-total correlation as in a reliable scale all items should correlate with the total, not less than .30 (Field, 2009). Findings about item-total correlation is given in Table-4.

Table-4 Findings about Item Reliability

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1- Sample activities are student-centered.	113.894	708.017	.568	.976
2- Activities are consistent with the content.	113.922	708.286	.564	.976
3- Activities are applicable.	114.171	704.080	.623	.976
4- Teaching and learning experiences are consistent with the objectives.	114.143	703.634	.694	.976
5- Teaching and learning approaches are appropriate to the field of study.	114.045	702.470	.734	.976
6- Resulting activities such as discussion, trip, observation, experiment, summarizing, production in the end of learning experiences are directive for the teacher.	114.305	694.870	.775	.975
7- Activities support learning by doing and experiencing.	114.300	693.351	.772	.975
8- Activities are organized by keeping student interests, needs and demands in mind.	114.580	688.340	.836	.975
9- Teaching and learning process develops critical thinking ability.	114.451	691.333	.831	.975
10- Teaching and learning process develops creative thinking ability.	114.487	690.295	.833	.975
11- Teaching and learning process develops research, questioning and deciding abilities.	114.457	690.468	.852	.975
12- Teaching and learning process develops problem solving ability.	114.490	689.251	.852	.975
13- Teaching and learning process develops communication ability.	114.303	692.953	.828	.975
14- Teaching and learning process develops correct, effective and good use of Turkish ability.	114.384	693.175	.770	.975
15- Teaching and learning process develops entrepreneurship ability.	114.499	690.880	.808	.975
16- Teaching and learning process develops information technology using ability.	114.280	697.146	.711	.976

17- Teaching and learning process supports 5E instructional model.	114.434	697.055	.786	.975
18- Teaching and learning process directs towards discussion methods like debate, panel, open forum etc.	114.507	695.492	.754	.975
19- Teaching and learning activities direct towards group work.	114.328	697.963	.791	.975
20- Methods and techniques are consistent with objectives.	114.238	695.440	.832	.975
21- Methods and techniques are consistent with content.	114.185	697.522	.833	.975
22- Activities can be done both in and out of the school.	114.499	693.318	.780	.975
23- The teacher is a guide who leads the students and improves him/herself in the process.	114.134	696.735	.738	.975
24- Curriculum offers materials to be used in the activities.	114.339	696.612	.772	.975
25- The materials used in teaching and learning process can easily be reached in all regions.	114.605	697.717	.696	.976
26- Sample activities are appropriate to students' level.	114.381	697.214	.749	.975
27- A learning experience is in interaction with the others.	114.328	696.620	.820	.975
28- Activities can be done both in and out of the school.	114.412	694.760	.774	.975
29- Learning experiences support the upper class attainments.	114.305	697.999	.756	.975
30- There are examples of how to use EBA in the teaching and learning process.	114.824	706.713	.468	.977
31- The teaching and learning process directs teachers to use digital materials.	114.168	709.489	.524	.976
32- The teaching and learning process directs students to use digital materials.	114.280	707.118	.557	.976
33- A classroom seating plan is provided appropriate to the activities in the curriculum.	114.874	695.936	.634	.976
34- There are explanations about the classroom management in the curriculum.	114.720	697.713	.654	.976

As seen in Table-4, item-total correlation of all 34 items are above .30 which means it is not necessary to exclude any other item. The values of item-total correlation change between .469 and .852

RESULTS

This study aims to develop a teaching and learning situations evaluation scale in order to help curriculum developers and teachers find strengths and weaknesses in the theory or practice of the teaching and learning situations in the curriculum as new theories and practices in education emerge continuously. The draft of the scale included 57 items after it was checked by experts and piloted with a group of 20 teachers. The draft form of the scale was given to 380 secondary school teachers in Afyon but 357 scales were returned and appropriate for data analyses. An explanatory factor analysis was carried out on the data as KMO and Barlett values indicated convenience for factor analysis. Of 57 items in the draft, 21 items were excluded because of insufficient factor loading score; 1 item because of no significant difference between 27% bottom-top group comparison and 1 because of insufficient item-total correlation value. The final form of the scale includes 34 items under a single factor and total variance explained is 57.545%. The Cronbach alpha value that indicates the reliability of the scale is .976 which is much above the minimum required value. All these results show that the developed teaching and learning situations evaluation scale can be used by researchers to collect data from the teachers about what to keep and change in the curriculum. Such a scale giving the opportunity to collect quantitative data which makes comparisons among similar researches easier will save time and effort.

REFERENCES

Baker, C. N., Brown, S. M., Wilcox, P. D., Overstreet, S., & Arora, P. (2016). Development and Psychometric Evaluation of the Attitudes Related to Trauma-Informed Care (ARTIC) Scale. *School Mental Health, 8*(1), 61-76.

Çakmak, M., & Gürbüz, H. (2014). Biyoloji dersi ortaöğretim programinin eğitim durumlari öğesine ilişkin öğretmen görüşleri. *Eğitim ve Öğretim Araştırmaları Dergisi, 3*(1), 299-312.

Can, A. (2014). *SPSS ile bilimsel araştırma sürecinde veri analizi* (2. b.). Ankara: Pegem.

Choi, M., Law, R., & Heo, C. Y. (2016). Shopping destinations and trust – Tourist attitudes: Scale development and validation. *Tourism Management*(54), 490-501.

Department of Education and Early Childhood Development. (2016, January 15). *Curriculum Guides: Towards A Comprehensive School Health Program.* July 29, 2016 tarihinde Department of Education and Early Childhood Development: http://www.ed.gov.nl.ca/edu/k12/curriculum/guides/health/elementary/process.pdf adresinden alındı

Field, A. (2009). *Discovering Statistics Using SPSS* (3. b.). London: SAGE Publications Ltd.

Hung, C.-C., Liu, H.-C., Lin, C.-C., & Lee, B.-O. (2016). Development and validation of the simulation-based learning evaluation scale. *Nurse Education Today, 40*, 72-77.

Lodico, M. G., Spauldıng, D. T., & Voegtle, K. H. (2010). *Methods in Educational Research.* San Francisco: Jossey-Bass.

MEB. (2011). *Ortaöğretim Kurumları Matematik Dersi Öğretim Programı.* Ankara: Milli Eğitim Bakanlığı Talim ve Terbiye Kurulu Başkanlığı.

Ocak, G., & Ataseven, N. (2015). Evaluation (need, objectives and content) of Primary 5th-8th Grade Physical Education Curriculums. *II. International Dynamic, Explorative and Active Learning (IDEAL) Conference.* Amasya: Amasya Üniversitesi.

Öksüz, C. (2015). İlkokul Matematik Programını Değerlendirme Ölçeği. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*(37), 21-33.

Prawat, R. S. (1992). Teachers' Beliefs about Teaching and Learning: A Constructivist Perspective. *American Journal of Education, 100*(3), 354-395.

Sharma, A. (2016). Professional development of teachers and teacher educators. *INDIAN JOURNAL OF APPLIED RESEARCH, 6*(4), 466-469.

Skiba, R., Ormiston, H., Martinez, S., & Cummings, J. (2016). Teaching the Social Curriculum: Classroom Management as Behavioral Instruction. *Theory Into Practice, 55*(2), 120-128. doi:10.1080/00405841.2016.1148990

Timperley, H. (2008). *Teacher professional learning and development.* Brussels: The International Academy of Education.

Effect of Internal and External Feedback on Serve Performance in Tennis

K.Alparslan ERMAN, Asuman ŞAHAN, Diğdem ÜÇÖZ,
School of Physical Education and Sports of Akdeniz University, Antalya, Turkey
ermana@akdeniz.edu.tr

ABSTRACT
The purpose of this study was to compare the differences between service performances changes of participants who get training focused on internal and external focuses in the education of tennis service. Twelve volunteer, who have never played tennis before, participated in this study (23.37±1,89 years,height:179.18±6,84 cm,weight:75.73±12, 01 Kg). Preliminary education was given to participants in order to get used to the services technique during the first week. After preliminary education, Tennis Service Test (TST) was applied to determine of subject's service targeting performance as pretest. Subjects were randomly separated into two groups. External-Focus Training group (ExtF) was focused on their attention to the external environment controlled racquet and ball toss during education (n=6). Besides, Internal-Focus Training group (IntF) was focused on their attention to the internal environment (n=6). They were struggled to adjust of muscles and joint angles to accurate and precise service stroke movement. After 4 week education (2 days per week, 2 hours per day; totally 16 hours) posttest was performed to determine the improvement in tennis service targeting performance. According to the results of Wilcoxon, a significant improvement (%12.66) was found (Pretest: 32.25±6.86%, Posttest: 44.91±11.27%, Z=-1.99,P=0.04) at IntF group. Conversely a significant difference (%8.79) was not found (Pretest:28.86±13.60%, Post test:37.65±10.79%,Z=-1.21,P=0.22) at ExtF group. In terms of Mann-Whitney U, a significant difference was not found both pre (Z-0.24,P=0.81) and posttest (Z=-1.12,P=0.26) between two groups. Consequently, IntF education seems to more effective on TST than ExtF training.
Key words: Internal Focus, External Focus, Tennis, Service

INTRODUCTION

There are some difficulties which trainers, players, and instructors face while teaching a specific technique to both young and youth beginner players and elite players or while correcting important mistakes made in the technique. The most important difficulty is how technical competence and equipment of players are transmitted to the performance or competition. Usually, this transmission can be provided with the suitable environment arrangements without being noticed. However, when and on which a player should focus his/her attention is one of the issues in which the relationship of the level of being considered important and its importance is at the lowest level. The subjects of skill acquisition, skill qualifications, attention and attentional focusing directions and potentials should be known well to understand the importance of this issue. It is beneficial to examine the reviews and studies conducted on the characteristics of attentional focusing directions and their effects on performance. Moreover, the effects of arrangements to be conducted on the attentional focusing potentials in training on the performance are inarguable. It is considered that the effects and benefits of the adaptation of these improvements to training on the performance improvement will be more than expected.

The skill was defined in many ways including concepts and sub-cores such as ability, certainty, sensitivity, energy consumption level, physical/mental capacity, productivity, consciousness, coordination, sensory capacity (Davis, Kimmet, & Auty, 1995). When the skill is explained in general, it is defined as the "acquired motion or duty to succeed in a specific objective". Moreover, the skill was conceptualized as the "determinant of performance quality" (Magill, 1993). Learning can become meaningful with the expression of "skill acquisition" and can be defined as "less or more permanent behavioral change reflecting changes in performance" (Davis, Kimmet, & Auty, 1995).

Study fields of the skill can be characterized as cognitive, perceptual and motor skills. This is the qualification of the similar characteristics of the skill. Cognitive skills are important and fundamental structures consisted of conceptual cognition and comprehension. Cognitive skills require knowing concepts such as reading, writing, solving mathematical problems, having information about sports injuries, competition rules, technical and tactical requirements. Perceptual skills are the skills related to recognizing sensory stimulations and sensing information arising from the environment. This is the characteristic which ensures that the individual makes a decision on how to react to a stimulation. For instance, the fact that the player, who is trying to perceive the behaviors of the ball coming from across, to strike the ball in baseball, analyzes the stimulation correctly enough and he/she is ready and on the alert. There is a motion in motor skills and they operate with cognitive and perceptual skills. Motor skills are related to the quality of the motion and they have the primary and great

importance affecting the success of quality. For instance, they include all skills involving serving in tennis, striking the ball, dancing. Motor skills should operate with cognitive and perceptual skills and their components to succeed in a target task (Edwards, 2011). To put it another way, the skill is a multilateral and integrative concept. Learning appears as the stimulations of the skill or information acquisition.

It is beneficial to classify motor skills to make their implementation in the field easily comprehensible. Thus, the skills can be classified as discrete, continuous and serial in terms of (1) the way of motion. Discrete skills have describable starting and ending points (For instance; kicking a ball, punching, striking a ball with the hand or equipment or jumping). Discrete motion is fast, it starts and ends immediately. The motion continues until it is stopped voluntarily in continuous skills (For instance; swimming, running). Continuous skills are outlasting when compared to discrete skills. They are rhythmic and consist of consecutive repetitions. Serial skills indicate all skills other than discrete and continuous skills. They consist of discrete skills connected to each other by the implementer in time and they are used to state the whole motion (For instance; gymnastics). At the beginning of the learning of serial skills, a person has to focus his/her attention on each sub-part of the motion. Another skill qualification is (2) the qualification according to environmental determinants. There are two categories as open and closed in this qualification. Stimulations arising from the environment are the main determinants in this qualification. Stimulations in open skills change a lot and frequently that they cannot be predicted in advance. In this case, the implementer cannot plan the motion in advance. When a person adapts to the environment, the stimulations arising from the environment change and the person has to adapt to the environment again. In closed skills, the stimulations arising from the environment can be predicted in advance and do not change a lot, they are fixed (For instance; archery, bowling) (Schmidt & Lee, 1999; Schmidt & Wrisberg, 2008). The predictable environment in sports fields cannot be the same always. In other words, the stimulations arising from the environment can be less or more predictable in terms of the characteristics of sports branches. Moreover, the fact that the stimulations arising from the environment are less or more predictable can be related to the experience or training level of player. For instance, while an environment is perceived as less predictable for an inexperienced player, it can be perceived as more predictable for an experienced player. To put it another way, the fact that the skill is perceived as open or closed can vary in terms of the type of the motion or the experience level of a person.

When it is considered that all these skill learning and acquisition subjects defined and tried to be explained theoretically operate together in sports fields, it is clear that there is a need for a coordinating and organizing system during the implementation of that much concepts. This structure appears as attention or the systematic organization of attention.

In this sense, attention can be stated as “a system defining data processing limitations” (Schmidt & Lee, 1999). Some theoretical models were suggested to explain attention. The bottleneck model which is commonly used is a model which filters many stimulations arising from the environment and explains the fact that a person focuses on what he/she does. In this model, it is intended to emphasize that the individual tries to increase individual performance and success with the condition of separating significant stimulations from insignificant ones. It is emphasized in other contemporary models that attention has a capacity. In this regard, attention capacity is divided as much as the duty which the attention desires to focus. Division rates change in terms of the significance level of tasks. However, the whole focused attention cannot exceed the potential of the attention of the individual, in other words, it is limited. If the significance level and order of the duties that the attention should be focused on in the implementation change, the individual identifies the duty that the attention should focus on more with a new arrangement and the attention is reorganized. The more the tasks that should be paid attention to are, the more the attention potential assigned for each task decreases or some duties are ignored (Coker, 2004).

There is a close relationship between skill acquisition and attentional focusing potentials. The individual observes and tries to perceive environmental and internal changes in all skill acquisition processes. They always ask the question of “What should I do to be more successful?”. The objective is to increase the performance. The answer to this question appears in different forms at different motor skill learning stages. Accordingly, motor skill learning occurs in 3 stages. The first stage is the cognitive stage. At this stage, motions are slow, inconsistent and unproductive and there is a great need for cognitive repetitions. In this period, demand for attention tries to control big parts of the motion consciously. The second stage is the associative stage. In this period, motions are more fluent, reliable and effective. Less cognitive activities are required. Certain parts of the motion are tried to be controlled consciously in terms of the demand for attention. Some parts control themselves. At the last stage which is the autonomous stage, the motion is correct, without mistakes, continuous, consistent and effective. There is either too little or none cognitive activity in performing a motion. The motion is extensively performed by controlling itself in terms of the attention potential (Wulf, 2007).

The attention focusing potentials of players have attracted the interest of the implementer and researcher for a long time. Attentional focusing can be evaluated from different perspectives. The first of these is associative attention to perceive the body or disassociative attention for physical activity. On the other hand, the perspective trying to explain attention with its width (broad versus narrow) is used in some fields. Finally, the direction of attention characterized with the internal focus and external focus of attention is also used as perspective. Performances with high-level skill acquisition are not only fluent and economic but also they require goal-oriented accuracy, precision, sensitivity, effectiveness, productivity, and reliability. Moreover, they require the least physical and mental effort. Many studies indicated that the external focus of attention accelerates the learning process, thus, the high skill level characterized by effectiveness and an increase in efficiency becomes achieved (Wulf, 2013).

When the player has the external focus of attention, he/she tries to perceive the effectiveness of motions; when he/she has the internal focus of attention, he/she tries to perceive his/her own motions (Southard, 2011). In other words, in the internal focus of attention, the player tries to recognize his/her body motions. In the external focus of attention, the player tries to understand the environmental effects of the motion (Wulf, HöB, & Prinz, 1998). In conclusion, the player tries to recognize his/her own motions in the internal focus of attention and tries to perceive the effectiveness of motions in the external focus of attention (Wulf, Gartner, McConnel, & Schwarz, 2002).

The backhand, which is among the ground strokes that are the main strokes of tennis, is a discrete and open skill for which big and small muscle groups are used (Schmidt & Wrisberg, 2008).

However, there is an environment which is predictable by the player in the serve (this is because the player throws the ball to the intended place and knows the place to which he/she will throw the ball in advance). Therefore, it is assumed in this study that the serve in tennis is a motion requiring a closed skill. Because of these reasons, it is considered that during the repetitions of serves which require a closed skill, internal focused attention studies improve targeting performance more when compared to external focused attention studies.

Accordingly, the aim of this study is to examine the effect of internal and external focused serve training in tennis on the targeting performance. In the study, only serve performances of the participants were evaluated.

MATERIAL AND METHODS

Participants

12 active individuals, between the ages of 21-27 years, who have not exercised at least for 2 years and did not have tennis training before, voluntarily participated in the study.

Table: Ages, heights, and weights of the participants

n=12	Mean±S.D.
Age(year)	23,37±1,89
Height(cm)	179,18±6,84
Weight(kg)	75,73±12,01

Training Method

The participants were randomly separated into two groups before starting the study. The first group took internal focused training during the serve. The players were asked to move by paying attention to the extremities and body parts (wrist, elbow, hip, etc.) during the serve in internal focused training. Moreover, the participants focused their attention on the body parts during the serve performance tests. The participants were asked to make repetitions by paying attention to the factors mentioned below in the internal focused serve training and qualitative characteristics of the technique were tried to be made concrete.

Internal Focused Serve Training

- Throw the ball over your right shoulder and up.
- Strike by covering the ball with your wrist
- After you throw the ball, bring front or turn your right shoulder and hip

- Follow the stroke with your body.

The participants in the second group were asked to focus their attention on the external focused factors during serve. They were asked to make repetitions by paying attention to the objects such as a ball, racket, and target as the external focused factors. During these motions, they were asked to repeat the factors mentioned below to make the points, on which attention should be focused, concrete.

External Focused Serve Training

- Bounce the ball 6-8 times before the serve and do not rush
- Throw the ball straight into the air and strike the ball up
- Accelerate the head of the racket while striking the ball
- Follow the target line with the head of the racket

The external knowledge of resuls was not provided to the participants during the training of both groups.

Ball and racket sense training were conducted for one week before starting the study and thus, it was provided that the participants adapted to tennis equipment and training environment. Individuals who participated in the study (n=12) took totally 16 hours of training during 4 weeks being two days a week and two hours each day. The participants trained their ground stroke in 50% of the study, trained serves in 40% of the study and trained volley strokes in 10% of the study during the tennis training (for 2 hours). The participants in both groups made repetitions by striking 75 balls in a period for one hour during the serve part of the tennis training. They stroke approximately 150 balls in two-hour training. Since the individuals train 2 times a week, their weekly total serve number was identified to be 300 balls/week. In conclusion, the participants stroke the ball approximately 1200 times during their 4-week training.

Measurement Method

The serve precision test was applied to the participants before preparatory studies and 4 weeks later. The serve precision performances of the participants were measured by the serve test battery.

The players were asked to make 12 serves in total to 4 areas divided vertically according to the net in the opposite serve area. The participants made 3 serves to each area. The serve falling to the correct area was evaluated as 4 points and the serve falling to the area next to it was evaluated as 2 points. Moreover, when the ball fell out or stuck in the net, the participant repeated that serve (as in the competition). When the first serve was incorrect and the second serve fell to the intended area, the participant obtained 2 points; and when the serve fell to the area next to it, the participant obtained 1 point. Moreover, for each ball that the participants served to the correct area, 1 extra point called the "continuity point" was added to the total point. For instance, if the participant served correctly to the first area, he/she got 4 points, if he/she served to the area next to it, he/she got 2 points. Furthermore, when the first serve was incorrect (the fact that it fell out or stuck in the net), the participant repeated the serve without losing the right. However, in this case, if the ball fell in the first area, the participant got 2 points, if the ball fell in the area next to it, the participant got 1 point. According to this instruction, the participants could get 48 points at most for their precisions in the serve test. When 12 continuity points are added to the precision point, it is possible for the participants to get 60 points at most. The points obtained by the participants were converted into the standard percentage point before the statistical analysis (points obtained/48*100).

Statistical Method

After the fact that the number of the participants who participated in the study was low and normal distribution identification tests conducted before the statistical analysis, it was determined that the group pretest measurements did not indicate the normal distribution. Thus, the Wilcoxon statistical method was used to compare the pretest-posttest data and the Mann-Whitney U statistical methods were used to compare the difference between the groups.

FINDINGS

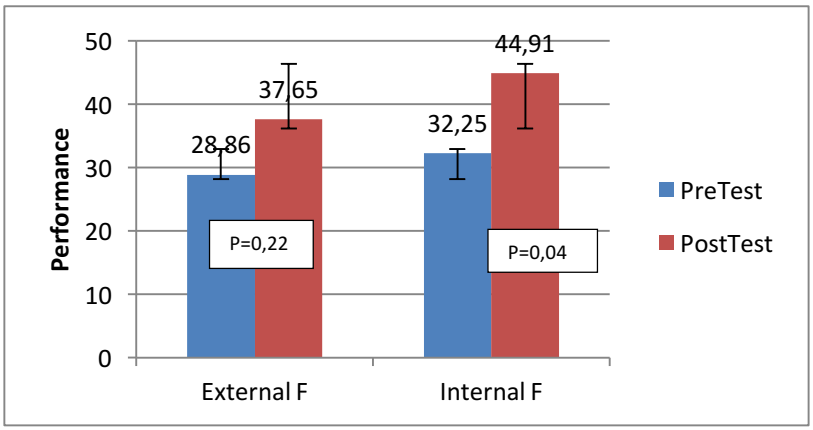
According to the results obtained from the studies, it was identified that 8,79% ($P>0,05$) of the group which took the external focused serve training and 12,66% ($p<0,05$) of the group which took the internal focused serve training made progress.

Table: Pretest-posttest differences in the groups obtaining the external and internal feedback

	External Focused (n=6)		Internal Focused (n=6)
Pretest (point%)	28,86±13,60	Z=-0,24 P=0,81	32,25±6,86
	Z=-1,21 P=0,22		Z=-1,99 P=0,04
Posttest (point%)	37,65±10,79	Z=-1,12 P=0,26	44,91±11,27

Moreover, it was identified that there was no difference between the groups in terms of the serve precision test results conducted before the study (pretest; P>0.05) and 4 weeks after the training period (posttest; P>0.05).

Because of the fact that the participants have not played tennis before and they are beginners and they are newly learning technical concepts related to tennis, the participants can be regarded as they are at the "beginner level".



DISCUSSION AND CONCLUSION

It was identified in this study in which the effect of taking the internal and external serve training in tennis on the serve targeting performance was examined that the targeting performance of the group who took the internal attention focused training improved more the serve precision points when compared to the group who took the external attention focused serve training (4 weeks, 8 trainings, approximately 1200 repetitions).

Sturmberg et al. conducted a study in which the effects of feedbacks and instructions on attentional focusing were examined and the studies were collected systematically. According to the data acquired from the external and internal attention focused studies conducted on individuals suffering from musculoskeletal dysfunction, it was identified that there was a significant development in the motor performances of groups training only external attention focused (Sturmberg, Marquez, Heneghan, Snodgrass, & Vliet, 2013).

In a study in which the motion complicating hypothesis was tested and the effect of the external focused attention on motion autonomization was tried to be identified, it was stated that the external focused attention assisted atomization of the motions more when compared to the internal focused attention (Kal, Kamp, & Houdijk, 2013).

In another study conducted on external attentional focusings of experienced or beginner golf players, it was stated that external attentional focusing instructions would cause more effective performance in terms of the fact that they activate high-level control systems and thus, more effective performances could be achieved (Wulf & Su, 2007).

In a study conducted on the preference and advantages of the external focused attention, the balance test was applied to the participants consecutively. It was stated that many participants chose the external focused attention at the end of the study; however, they used the internal focused attention more for retention tests. However, it was emphasized as a result of the study that the external focused attention was more effective on performance and learning (Wulf, Shea, & Park, 2001).

In another study in which attentional focusing in complex motor skills was examined, the balance characteristics of the participants were tested. In conclusion, it was identified that external attentional focusing increases balance performance and the average power frequency during balance, however, it decreases the demand for attention (Wulf, McNevin, & Shea, 2001).

Lohse et al. examined the effects of long-term dart training on skill acquisition and test performance in their study. As a result of the study, they stated that the external focused attention affects accuracy and sensitivity more during the skill acquisition. Moreover, it was emphasized in the study that internal focused attention implementations could be effective in correcting bad and undesired mistakes made both at the beginning and at the advanced level (Lohse, Sherwood, & Healy, 2014).

In a study in which the effects of attentional focusing studies in complex motions on skill developments were examined, internal and external focused attention trainings were provided to experienced golf players. At the end of the study, it was emphasized that the group training the external focused attention made more accurate and consistent strokes (Land, Frank, & Schack, 2014).

As it can be understood from the results of the studies conducted that almost in all studies, internal focused attention studies were more improving in skill acquisition, performance, motion accuracy, consistency, precision, and timing. In this study conducted, internal focused attention trainings supported the serve targeting performances of the participants more. The results obtained from the study conflict with the literature information. The reason for this finding and result can be stated as the fact that the duration of training was short (4 weeks), there was a limited number of the participants participating in the study (n=12) and in addition to internal and external focused implementations, the external feedback was not provided.

It can be suggested to researchers who will conduct studies on similar subjects later that they should (1) carry out more and various target-oriented attentional focusing studies with the participants in internal attentional focusing trainings and (2) plan research mechanisms to find the differences between external and internal focused studies in techniques requiring open and closed skill in tennis.

REFERENCES

Coker, C. A. (2004). *Motor Learning and Control for Practioners.* USA: Mc Graw Hill. pp:34-36

Davis, D., Kimmet, T., & Auty, M. (1995). *Physical Education: Theory and Practice.* Australia: MACMILLAN. pp:269-270

Edwards, H. E. (2011). *An Introduction to Motor Learning and Motor Control.* USA: WADSWORTH CENGAGE Learning. pp:33-34

Kal, E. C., Kamp, J. V., & Houdijk, H. (2013). External attentional focus enhances movement automatization: A comprehensive test of the constrained action hypothesis. *Human Movement Science*(32), 527-539.

Land, W. M., Frank, C., & Schack, T. (2014). The influence of attentional focus on the development of skill representation in a complex action. *Psychology of Sport and Exercise*(15), 30-38.

Lohse, K. R., Sherwood, D. E., & Healy, A. F. (2014). On the advantage of an external focus of attention: A benefit to learning or performance? *Human Movement Science*(33), 120-134.

Magill, R. A. (1993). *Motor Learning Concepts and Application.* USA: Brown & Benchmark. pp: 442

Schmidt, R. A., & Lee, T. D. (1999). *Motor Control and Learning, A Behavioral Emphasis.* USA: Human Kinetics. pp:16-18, 411

Schmidt, R. A., & Wrisberg, C. A. (2008). *Motor Learning and Performance A Situation-Based Learning Approach.* USA: Human Kinetics. pp: 6-8

Southard, D. (2011). Attentional Focus and Control Parameter. *Research Quarterly for Exercise and Sport, 82*(4), 652-666.

Sturmberg, C., Marquez, J., Heneghan, N., Snodgrass, S., & Vliet, P. V. (2013). Attentional focus of feedback and instructions in the treatment of musculoskeletal dysfunction: A systematic review. *Manual Therapy*(18), 458-467.

Wulf, G. (2007). *Attention and Motor Skill Learning.* USA: Human Kinetics. pp:3

Wulf, G. (2013). Attentional Focus and Motor Learning: A Review of 15 Years. *International Review of Sport and Exercise Psychology, 6*(1), 77-104.

Wulf, G., & Su, J. (2007). An External Focus of Attention Enhances Golf Shot Accuracy in Beginners and Experts. *Research Quarterly for Exercise and Sport, 78*(4), 384-389.

Wulf, G., Gartner, M., McConnel, N., & Schwarz, A. (2002). Enhancing the Learning of Sport Skills Through External-Focus Feedback. *Journal of Motor Behavior, 34*(2), 171-182.

Wulf, G., HöB, M., & Prinz, W. (1998). Instructions for Motor Learning: Differential Effects of Internal Versus External Focus of Attention. *Journal of Motor Behavior, 30*(2), 169-179.

Wulf, G., McNevin, N., & Shea, C. H. (2001). The automaticity of complex motor skill learning as a function of attentional focus. *The Quarterly Journal of Experimental Psychology, 54A*(4), 1143-1154.

Wulf, G., Shea, C., & Park, J. H. (2001). Attention and Motor Performance: Preferences for and Advantages of an External Focus. *Research Quarterly for Exercise and Sport, 72*(4), 335-344.

EĞİTİMDE KIZLAR VE ERKEKLER ARASINDAKİ MESAFELER: OKULLAR KARMA MI TEK CİNSİYETLİ Mİ OLMALI?

Mediha SARI
Çukurova Üniversitesi Eğitim Fakültesi
msari@cu.edu.tr

Ece YOLCU
Çukurova Üniversitesi Eğitim Fakültesi
eduser@cu.edu.tr

ABSTRACT
Karma eğitim, 1739 sayılı Milli Eğitim Temel Kanununda belirtilen milli eğitimin temel ilkelerinden biri olarak kabul edilmiştir. Bununla birlikte günümüzde karma eğitimle ilgili tartışmaların alevlendiği görülmektedir. Karma eğitim taraftarları ile karşıtları, kendilerince çeşitli argümanlar geliştirmekte, Türkiye'de ve diğer ülkelerde yapılan çalışmalardan görüşlerini destekleyen kanıtlar toplamaya çalışmaktadırlar. Ancak bilimsel araştırmalara dayalı olmaktan uzak olan ve çoğunlukla siyasi düzeyde kalan bu tartışmalarda, konuyla ilgili en isabetli görüş belirtebilecek kesimin öğretmenler olduğu göz ardı edilmektedir. Oysa öğrencilerin bilişsel, sosyal, psikolojik, fiziksel her türlü gelişim aşaması ve özellikleri hakkında yakın bilgi sahibi olan öğretmenlerdir. Bu bağlamda araştırmanın temel amacı öğretmenlerin karma eğitime ilişkin görüşlerinin incelenmesidir.

Tarama modelinde betimsel bir çalışma olan bu araştırmaya Adana merkez ilçelerindeki üç ilkokul ve üç ortaokulda görev yapan 226 (137 kadın; 75 erkek) öğretmen katılmıştır. Verilerin toplanmasında araştırmacı tarafından geliştirilen Karma Eğitime Yönelik Görüşler Ölçeği (KEYGÖ) kullanılmıştır. Beşli Likert tipinde olan bu ölçek 22 madde ve üç alt boyuttan oluşmaktadır (Alan ve Meslek Seçimi, Başarı, Kişisel ve Sosyal Gelişim). Ölçeğin uygulanması sonucunda tüm boyutların toplamına ilişkin Cronbach Alpha .98 iken, ölçeğin tüm boyutları varyansın %88.46 'sını açıklamaktadır. Verilerin analizinde, aritmetik ortalama ve standart sapma dağılımları incelenmiş, bunun yanı sıra ikili karşılaştırmalarda bağımsız gruplar t-testi; çoklu karşılaştırmalarda tek yönlü varyans analizleri kullanılmıştır.. Cinsiyete göre yapılan karşılaştırma her üç boyut için kadın öğretmenler lehine anlamlı farklılık olduğu görülmüştür. Branş değişkenine göre yapılan karşılaştırmada ise Din Kültürü ve Ahlak Bilgisi hem alt ölçeklerde hem de toplam puanlarda en düşük ortalamalara sahip oldukları görülmektedir. Öğretmenlerin kıdemi ve mezun oldukları okul türüne göre karşılaştırma yapıldığında ise gruplar arasında alt ölçekler ya da toplam puanlar açısından herhangi bir anlamlı farklılık görülmemiştir. Bu analizler sonucunda genel olarak öğretmenlerin büyük ölçüde karma eğitimden yana oldukları ve tek cinsiyetli eğitimi benimsemedikleri görülmüştür.

Anahtar Sözcükler: Karma eğitim, Demokrasi eğitimi, Öğretmen eğitimi

ENTREPRENEURSHIP AND INNOVATION POTENTİAL OF THE UNIVERSITIES IN TURKEY

Burhan AKPUNAR
Fırat Üniversitesi

Serdar SAFALI
Ağrı İbrahim Çeçen Üniversitesi
serdar_safali@hotmail.com

Ender ÖZEREN
Dicle Üniversitesi

As corresponding to the rapid change of today described as İnformation Age, a rapid change on some dimensions of universities such as goal, structure, operation, training policy has been observed. This change can be summarized as the effort of universities to ground their education policy much more on entrepreneurial and innovative basis. Purpose of this study is to determine the innovative and entrepreneurial potential of the existing curriculum of Turkish universities based on students' opinions. The study was carried out with the participation of senior students at the Fırat University, Harran University and Ağrı İbrahim Çeçen University during 2015-2016 academic year. This study was conducted by using screening model and data were collected through questionnaire. Descriptive statistical techniques such as percentage, frequency, and chi-square tests were used to analyze the data. As the result of this study, it was determined that Turkish universities didn't have the expected innovate potential in terms of their aims, programs, teaching processes, and laboratory-project implementations. According to students, universities predominantly engage with "available circumtances" instead of "investigation of newness". Education policy of universities is mainly based on "science for science". Education programs are far away from meeting the needs of the present in terms of their content. Consequently, universities being the foundation of Turkish Higher Education System have reflected the features of Industrial Age instead of Information Age.

Keywords: *Entrepreneurship, innovation, education policy, the Information Age and the Industrial Age.*

TÜRK ÜNİVERSİTELERİNİN GİRİŞİMCİLİK VE İNOVASYON POTANSİYELİ

Burhan AKPUNAR
Fırat Üniversitesi

Serdar SAFALI
Ağrı İbrahim Çeçen Üniversitesi
serdar_safali@hotmail.com

Ender ÖZEREN
Dicle Üniversitesi

Bilgi Çağı olarak nitelenen günümüzdeki hızlı değişime koşut olarak, üniversitelerde de amaç, yapı, işleyiş ve öğretim politikası gibi boyutlar itibarıyla hızlı bir değişim gözlenmektedir. Bu değişim, üniversitelerin öğretim politikalarını daha fazla girişimci ve inovatif bir zemine oturtma çabası şeklinde özetlenebilir. Bu çalışmanın amacı, Türk Üniversitelerinin mevcut öğretim programlarının inovatif girişimcilik potansiyelini, öğrenci görüşlerine dayalı olarak belirlemektir. Çalışma 2015-2016 Öğretim Yılında Fırat, Harran, Ağrı İbrahim Çeçen Üniversitelerinde öğrenim gören son sınıf öğrencileri üzerinde yürütülmüştür. Tarama modelinde yürütülen çalışmada veriler, anket formuyla toplanmıştır. Verilerin analizinde betimsel istatistiki tekniklerden yüze ve frekans alma ile ki-kare testi kullanılmıştır. Analiz sonucunda örnekleme dahil üniversitelerin amaç, programlar, öğretim süreci ve laboratuvar-proje uygulamaları boyutları itibarıyla beklenen inovatif potansiyele sahip olmadıkları belirlenmiştir. Öğrencilere göre üniversiteler, büyük oranda "yeniyi aramak" yerine, "mevcuda ulaşmak" ile meşguldürler. Üniversitelerin öğretim politikası, ağırlıklı olarak "bilim için bilim" anlayışına dayalıdır. Öğretim programları içerik olarak günümüz ihtiyaçlarını karşılamaktan uzaktır. Sonuç olarak Türk Yükseköğretim Sisteminin temelini oluşturan üniversiteler, amaç, yapı ve işleyiş olarak, Bilgi Çağı'ndan ziyade Sanayi Çağı özelliklerini yansıtmaktadır.

Anahtar kelimeler *Girişimcilik, innovasyon, öğretim politikaları, Bilgi Çağı ve Sanayi Çağı*

EVALUATION OF TEACHING AND LEARNING SITUATIONS IN BIOLOGY CURRCICULUM ACCORDING TO TEACHER OPINIONS

Assoc. Prof. Dr. İjlal OCAK
Afyon Kocatepe University, Faculty of Education, Turkey
iocak@aku.edu.tr

Assoc. Prof. Dr. Gürbüz OCAK
Afyon Kocatepe University, Faculty of Education, Turkey.
gurbuzocak@gmail.com

Lecturer Serkan BOYRAZ
Afyon Kocatepe University, Faculty of Education, Turkey
serkan.boyraz@gmail.com

ABSTRACT
The curricula in Turkey has been continuously renewed since 2005 in order to comply with the developments in teaching and learning situations and technology. This change is a result of dynamic structure of curriculum development process. As known, curriculum development is not a process that starts and stops but always goes on, so more research on the stakeholders of the education such as students, teachers, parents etc. is needed in order to put forward the quality, effectiveness, problems and strengths of renewed curricula. Biology curriculum of secondary schools has been changed in 2013-2014 starting at 9th grade. The evaluation of teaching and learning situations by teachers who are the only practitioners of the new biology curriculum which aims not only to teach basic concepts and information but also make students understand the nature of scientific information and have 21st century skills such as technology literacy. Many questions such as if teachers use methods and techniques proposed by the curriculum, whether teaching and learning situations are student-centered as prescribed in the curriculum and applied in that way, if effective teaching is reached await to be answered. This study which employs survey method aims to evaluate the teaching and learning situations in biology curriculum according to teacher opinions. Data will be collected by teaching and learning situations evaluation scale which is developed by the researchers and findings such as frequencies, per cent, mean and some other statistical functions will be given in tables. In addition, it will be investigated if there is any statistically significant difference among teacher opinions in terms of some variables such as years of experience, graduation, in service training, etc.
Keywords: biology curriculum, curriculum evaluation, teaching and learning situations, teacher opinions

INTRODUCTION

In the last century, there has been a shift from behaviorism to cognitivism in education just like in psychology and final dominant approach in education is constructivism. It has changed the education in many ways. For example, the teacher supposed to act not like the "leading role" but the "supporting" one. As a natural result of this change in the teacher's role, students are expected to act as the "leading role." Believing that new information is acquired by connecting it to the previous knowledge, constructivism requires designing the teaching-learning process accordingly (Applefield, Huber, & Mahnaz, 2000). The curricula in Turkey have been continuously changing in order to follow this current and common approach and keep up-to-date. Especially Science, Technology, Engineering and Mathematics (STEM) education requires much faster updating due to continuous and big improvements in these fields, so curricula reforms in STEM happen faster than the social sciences. The biology curricula for the high schools (9th-12th grades) was changed in order to update it appropriate to the constructivism and keep pace with the incredible pace of information age. Basic skills that are aimed to be given to students in biology course is explained as (MEB, 2013): understanding and applying the scientific information; scientific process skills, the relations among the science-technology and society, attitude towards the science, attitudes and morals, understanding the nature of scientific information, 21st century skills. The teaching and learning process that will lead through the gaining of the given skills by the students is explained as a process: that is social, individual centered and includes active participation of them; in which previous knowledge plays an important role in learning and diversified education, research and questioning are the basics. Although everything about teaching and learning process looks perfect on the paper, in other words in theory, it is important to learn the real reflections and results of them in the classroom. When studies on biology curricula in Turkey are examined, it is seen that Gerçek and Soran (2005) state teachers should develop curricula appropriate to the region. Altunoğlu and Atav (2005) report that teachers think experiments were not applicable and more experiments for every subject had to be integrated into previous biology curricula. Besides, teachers think the curricula limited use of different teaching methods because of intensity and time. In their study investigating high school physics, chemistry and biology curricula in terms of scientific literacy, Erdoğan and Köseoğlu (2012) state that biology curriculum is insufficient in developing the understanding of the nature of science which is an important element in the development of scientific literacy. İrez and Yavuz (2009) explain that biology teachers find biology curricula

insufficient in terms of assessment and evaluation because of inadequate content and context, limited weekly time, inappropriate distribution of the topics towards the years, unsuitable class seating and crowded classes. There are other studies in the literature on the evaluation of biology curricula in many different aspects such as evaluation of genetics subjects in biology curricula and determining students' interest in genetics by Uzun and Sağlam (2003); environment education in secondary education and teacher opinions on environment education by Uzun & Sağlam (2007); teaching methods used by biology teachers and opinions on the effect of these methods on student success by Temelli & Kurt (2011); evaluation of secondary school biology curriculum in terms of wild life components by Arıkan & Turan (2015); the comparison of Turkey and South Korea biology curricula by Güneş & Aksan (2015). In international literature, there are studies such as Primary literature as a basis for a high-school biology curriculum by Yarden, Brill & Falk (2001); Investigating teacher learning supports in high school biology curricular programs to inform the design of educative curriculum materials by Beyer, Delgado, Davis & Krajcik (2009); Problem-based learning in the biology curriculum by Kendler & Grove (2004); Biomind—a new biology curriculum that enables authentic inquiry learning by Zion, et al. (2004).

Problem:
What is the biology teachers' evaluation of teaching and learning situations in the current Biology course curricula for the high schools (9^{th}-12^{th} classes)? Is there a statistically significant difference in their evaluation in terms of some demographic variables?
Sub-problems

1. What is the distribution of teacher views on teaching and learning situations in 2013 Biology curricula?
2. Is there a statistically significant difference in teacher views on teaching and learning situations in terms of their experience?
3. Is there a statistically significant difference in teacher views on teaching and learning situations in terms of their level of academic degree?
4. Is there a statistically significant difference in teacher views on teaching and learning situations in terms of their participating in an in-service training on the new curricula?

Aim of the Study
The aim of the study is to evaluate the teaching and learning situations in Biology curricula for the high schools (9^{th}-12^{th} grades) through the teacher views. The results might indicate weaknesses and strengths of the new curricula.

METHOD
As the aim is to evaluate the Biology curricula by the teachers' views, survey method that is generally used to measure or evaluate the general characteristics of a topic, universe or program (Cohen, Manion, & Morrison, 2007) is employed in this study. The statistics used in this study include: frequencies and percentages to represent teacher views; normal distribution tests to check the normality; t-test to compare two groups on a variable; ANOVA test to compare three or more groups on a variable. The normal distribution of the data is analyzed independently for each group (Can, 2014), through the normality test and when the groups in all comparisons include less than 50 participants Shapiro-Wilks, and when it is above 50 Kolmogorov-Smirnov test is taken into account. According to normality test results, data is normally distributed and parametric tests were used.

The validity and reliability of the data collection tool is done by Ocak, Ocak & Boyraz (2016) and was presented in "INTE 2016 International Conference on New Horizons in Education." Statistical findings about the validity and reliability of the scale in the development study and this study can be seen in Table-1. There are 34 items in the scale under one dimension.

Table-1 Descriptive Information about Data Collection Tool

	Scale Development Study	**Current Study**
Sample	High school teachers	Biology teachers
Number of Sample	357	99
KMO	,971	,834
Barlett	,000	,000
Cronbach alpha	,976	,948

The Universe and Sample
The study was carried out in Afyonkarahisar. All Biology teachers in the city were given the scale after getting required formal permissions from Provincial National Education Directorate. 99 scales were collected back and all were appropriate for the data analysis.

Table-2 Demographic Information about the Sample

Type of High School	**N**	**%**	**Experience (year)**	**N**	**%**
Basic Sciences	2	2.0	1-4	19	19.2
Anatolian	39	39.4	5-9	24	24.2
Science	10	10.1	10-14	14	14.1
Vocational and Technical	33	33.3	15 and above	42	42.4
Anatolian Health Vocational	2	2.0	**Total**	99	100.0
Religious	9	9.1	**Level of Academic Degree**		
Multi-program	2	2.0	Graduate	67	67.7
Others	2	2.0	Post-graduate	32	32.3
Total	99	100.0	**Total**	99	100.0
Level of Curriculum Focus			**Training on Curriculum**		
Rarely	7	7.1	Yes	57	57.6
Sometimes	15	15.2	No	42	42.4
Often	38	38.4	**Total**	99	100.0
Always	39	39.4			
Total	99	100.0			

FINDINGS

Sub-problem 1: How appropriate are the teaching and learning situations in high school Biology curricula to the teaching and learning situations scale?

Table-3 Findings about Teachers' Evaluations

		DA	**A**	**SA**		**DsA**	**Result**	
1- Sample activities are student-centered.	**f**	0	3	34	44	18	3,78	Agree
	%	0	3,0	34,3	44,4	18,2		
2- Activities are consistent with the content.	**f**	1	4	23	59	12	3,78	Agree
	%	1,0	4,0	23,2	59,6	12,1		
3- Activities are applicable.	**f**	1	13	37	41	7	3,40	Slightly Agree
	%	1,0	13,1	37,4	41,4	7,1		
4- Teaching and learning experiences are consistent with the objectives.	**f**	0	10	22	63	4	3,62	Agree
	%	0	10,1	22,2	63,4	4,0		
5- Teaching and learning approaches are appropriate to the field of study.	**f**	0	4	28	56	11	3,75	Agree
	%	0	4,0	28,3	56,4	11,1		
6- Resulting activities such as discussion, trip, observation, experiment, summarizing, production in the end of learning experiences are directive for the teacher.	**f**	7	9	38	35	10	3,32	Slightly Agree
	%	7,1	9,1	38,4	35,4	10,1		

The participant teachers agree that the activities offered in the curricula are student-centered (X=3,78); consistent with the content (X=3,78) and objectives (X=3,62); teaching and learning approaches are appropriate to the field of study (3,75). Teachers slightly agree that activities are applicable (X=3,40) and final activities are directive (X=3,32).

Table-4 Findings about Teachers' Evaluations

		DA	**A**	**SA**		**DsA**	**Result**	
7- Activities support learning by doing and experiencing.	**f**	5	12	42	28	12	3,30	Slightly Agree
	%	5,1	12,1	42,4	28,3	12,1		
8- Activities are organized by keeping student interests, needs and demands in mind.	**f**	7	11	40	34	7	3,23	Slightly Agree
	%	7,1	11,1	40,4	34,3	7,1		
9- Teaching and learning process develops critical thinking ability.	**f**	4	9	32	45	9	3,46	Agree
	%	4,0	9,1	32,3	45,5	9,1		
10- Teaching and learning process develops creative thinking ability.	**f**	5	11	41	34	8	3,29	Slightly Agree
	%	5,1	11,1	41,4	34,3	8,1		
11- Teaching and learning process develops research, questioning and deciding abilities.	**f**	2	13	38	39	7	3,36	Slightly Agree
	%	2,0	13,1	38,4	39,4	7,1		
12- Teaching and learning process develops problem solving ability.	**f**	4	10	47	30	8	3,28	Slightly Agree
	%	4,0	11,0	47,5	30,3	8,1		

Teachers agree that the teaching and learning process develops critical thinking ability (X=3,46). On the other hand, they slightly agree that activities support learning by doing and experiencing (3,30) and are organized

according to students' interests, needs and demands (X=3,23). They slightly agree that teaching and learning process in the Biology curricula develops research, questioning and deciding abilities (X=3,36) and problem solving ability (X=3,28).

Table-5 Findings about Teachers' Evaluations

		DA	A	SA		DsA	Result	
13- Teaching and learning process develops communication ability.	**f**	4	10	40	36	9	3,36	Slightly Agree
	%	4,0	10,1	40,4	36,4	9,1		
14- Teaching and learning process develops correct, effective and good use of Turkish ability.	**f**	11	10	34	35	9	3,21	Slightly Agree
	%	11,1	10,1	40,4	36,4	9,1		
15- Teaching and learning process develops entrepreneurship ability.	**f**	7	16	34	34	8	3,20	Slightly Agree
	%	7,1	16,2	34,3	34,3	8,1		
16- Teaching and learning process develops information technology using ability.	**f**	5	12	30	43	9	3,39	Slightly Agree
	%	5,1	12,1	30,3	43,4	9,1		
17- Teaching and learning process supports 5E instructional model.	**f**	0	13	40	32	14	3,47	Agree
	%	0	13,1	40,4	32,3	14,1		
18- Teaching and learning process directs towards discussion methods like debate, panel, open forum etc.	**f**	6	21	44	22	6	3,01	Slightly Agree
	%	6,1	21,2	44,4	22,2	6,1		

Participant teachers agree that teaching and learning process supports 5E instructional model (3,47). They slightly agree that teaching and learning process develops communication ability (X=3,36); correct, effective and good use of Turkish ability (X=3,21); entrepreneurship ability (X=3,20); information technology using ability (X=3,39) and directs towards discussion methods like debate, panel, open forum etc. (X=3,01).

Table-6 Findings about Teachers' Evaluations

		DA	A	SA		DsA	Result	
19- Teaching and learning activities direct towards group work.	**f**	2	9	44	39	5	3,36	Slightly Agree
	%	2,0	9,1	44,4	39,4	5,1		
20- Methods and techniques are consistent with objectives.	**f**	1	5	40	45	8	3,55	Agree
	%	1,0	5,1	40,4	45,5	8,1		
21- Methods and techniques are consistent with content.	**f**	1	6	31	56	5	3,59	Agree
	%	1,0	6,1	31,3	26,6	5,1		
22- Activities can be done both in and out of the school.	**f**	6	15	39	35	4	3,16	Slightly Agree
	%	6,1	15,2	39,4	35,4	4,0		
23- The teacher is a guide who leads the students and improves him/herself in the process.	**f**	4	10	34	44	7	3,40	Slightly Agree
	%	4,0	10,1	34,3	44,4	7,1		
24- Curriculum offers materials to be used in the activities.	**f**	5	10	36	43	5	3,33	Slightly Agree
	%	5,1	10,1	36,4	43,4	5,1		

The participant teachers agree that the methods and techniques are consistent with objectives (X=3,55), content (X=3,59). They slightly agree that teaching and learning activities direct towards group work (X=3,36); activities can be done both in and out of the school (X=3,16); the teacher is a guide who leads the students and improves him/herself in the process (X=3,40) and curriculum offers materials to be used in the activities (X=3,33).

Table-7 Findings about Teachers' Evaluations

		DA	A	SA		DsA	Result	
25- The materials used in teaching and learning process can easily be reached in all regions.	**f**	14	15	40	26	4	2,91	Slightly Agree
	%	14,1	15,2	40,4	26,3	4,0		
26- Sample activities are appropriate to students' level.	**f**	9	20	32	29	9	3,09	Slightly Agree
	%	9,1	20,2	32,3	29,3	9,1		
27- A learning experience is in interaction with the others.	**f**	1	14	35	41	8	3,41	Agree
	%	1,0	14,1	35,4	41,4	8,1		
28- Activities can be done both in and out of the school.	**f**	7	19	35	36	2	3,07	Slightly Agree
	%	7,1	19,2	35,4	36,4	2,0		
29- Learning experiences support the upper class attainments.	**f**	3	14	36	37	9	3,35	Slightly Agree
	%	3,0	14,1	36,4	37,4	9,1		
30- There are examples of how to use EBA in the teaching and learning process.	**f**	10	19	14	39	17	3,34	Slightly Agree
	%	10,1	19,2	14,1	39,4	17,2		

While the teachers agree that a learning experience is in interaction with the others (3,41) they slightly agree that the materials used in teaching and learning process can easily be reached in all regions (X=2,91); sample activities are appropriate to students' level (X=3,09); Activities can be done both in and out of the school (X=3,07); learning experiences support the upper class attainments (X=3,35); there are examples of how to use EBA in the teaching and learning process (X=3,34).

Table-8 Findings about Teachers' Evaluations

		DA	A	SA		DsA	Result	
31- The teaching and learning process directs teachers to use digital materials.	F	3	10	28	36	22	3,65	Agree
	%	3,0	10,1	28,3	36,4	22,2		
32- The teaching and learning process directs students to use digital materials.	F	4	12	31	34	18	3,51	Agree
	%	4,0	12,1	31,3	34,3	18,2		
33- A classroom seating plan is provided appropriate to the activities in the curriculum.	F	16	33	24	17	9	2,70	Slightly Agree
	%	16,2	33,3	24,2	17,2	9,1		
34- There are explanations about the classroom management in the curriculum.	F	9	28	28	28	6	2,94	Slightly Agree
	%	9,1	28,3	28,3	28,3	6,0		

The two questions on digital materials use by both teachers and students as a result of curriculum requirements are agreed by the participant teachers (X=3,65-3,51). However, teachers slightly agree that the curriculum provides a classroom seating plan appropriate to the activities (X=2,70) and explanations about the classroom management (X=2,94).

Sub-problem 2: Is there a statistically significant difference in teacher views on teaching and learning situations in terms of their experience?

Table-9 One-way ANOVA Results on the Evaluation in terms of Years of Experience

Experience (Year)	N	Sum of Squares Within Groups	Sum of Squares Between Groups	df	F	p
1-4	19	196,897	37702,739	3	,165	,943
5-9	24					
10-14	14					
15 and above	42					

As seen in Table-9, the teachers are divided into four groups depending on their years of experience. The number of teachers with an experience of 15 or more years is 42 and this is the most crowded group. Following it comes 5-9 years of experienced teachers with a number of 24. There are 19 teachers with 1-4 years of experience and 14 with 10-14 years. The ANOVA test results indicate no statistically significant difference among them in their evaluation on teaching and learning situations in the Biology curricula in terms of their experience (p=,934; p>,05).

Sub-problem 3: Is there a statistically significant difference in teacher views on teaching and learning situations in terms of their level of academic degree?

Table-10 T-test Results on the Evaluation in terms of Level of Academic Degree

Graduation	N	X	SS	df	t	p
Undergraduate	67	113,28	18,77	97	-,235	,815
Graduate	32	114,28	21,71			

The teachers are divided into two groups in terms of their level of academic degree: 67 undergraduates and 32 graduates. According to t-test results, there is not a statistically significant difference between the two in their evaluation on teaching and learning situations in the Biology curricula (p=,815; p>,05).

Sub-problem 4: Is there a statistically significant difference in teacher views on teaching and learning situations in terms of their participating in an in-service training on the new curricula?

Table-11 T-test Results on the Evaluation in terms of In-service Training

In-service Training	N	X	SS	df	t	p
Yes	57	115,84	21,59	97	1,323	,189
No	42	110,57	16,46			

One of the variables according to which teachers' evaluations are compared is either participating an in-service training on the new curricula or not and while 57 teachers got such a training the rest 42 did not. However, according to t-test results, there is not a statistically significant difference between the two groups (p=,189; p>,05).

RESULTS AND DISCUSSION

The Biology teachers in Afyon were given a scale consisting of 34 items to evaluate the teaching and learning situations in the new 2013 curricula. According to means, teachers slightly agree with 21 items while they agree with 13 items. This means the teachers think that the teaching and learning situations in the renewed high school Biology curricula is not as effective as it was meant to be and the renewed curricula needs to be revised for example in terms of classroom management, reachability of materials in all the regions etc. In a similar study by Çakmak and Gürbüz (2014), the evaluations of teachers on teaching and learning situations in Biology curriculum is similar and the answers are "agree", "partially agree" and "don't agree". The highest means in teachers' evaluations are about the items related to activities' being student centered and consistent with the content and teaching and learning situations' being appropriate to the field of study. These points seem to be formed in the curriculum better than other parts and they are the positive sides of the curriculum. On the other hand, İrez & Yavuz (2009) state that the majority of the participant teachers do not adopt the new biology curricula and find it insufficient in terms of assessment and evaluation in their study named biology teachers' opinions on evaluation approaches in the new curricula and their implementations. They add that teachers lack information on constructivist theory which takes students in the center of education and its application. The items with lowest means are about the reachability of the materials in all the regions, classroom seating plan and management. It can be concluded that teachers look for more support in the classroom management and materials development in the curricula. One of the important elements of constructivism is that the teaching and learning situations are organized by keeping student interests, needs and demands in mind. Participant teachers "slightly" agree that the renewed Biology curricula for the high schools fulfill this need. Similarly, Çevik and Atıcı (2015) state that biology teachers think the teaching and learning situations in the curricula don't help them to be aware of students' interests, needs and demands. Nearly half of the teachers participating in this study and evaluating the renewed curricula have been working as a teacher 15 or more years so they are very experienced. However, there is not a statistically significant difference in terms of the year of experience in teachers' evaluations on the curricula. It is interesting to find out that nearly one third of the teachers have a graduate degree but again there is not a significant difference between teachers with undergraduate or graduate degree. Curriculum reforms are generally followed by in-service trainings to the teachers and this is thought to be an important factor in curriculum evaluation. More than half of the participants got an in-service training on renewed Biology curricula but there is not a statistically significant difference between the two groups getting a training or not. Altunoğlu & Atav (2005) find no statistically significant difference among participant teachers in terms of gender, experience, the school they graduated, type of high school they work and where they live in terms of these variables.

REFERENCES

Altunoğlu, B. D., & Atav, E. (2005). Daha Etkili Bir Biyoloji Öğretimi İçin Öğretmen Beklentileri. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *28*(28).

Applefield, J., Huber, R., & Mahnaz, M. (2000). Constructivism in theory and practice: toward a better understanding. *High School Journal, 84*(2), 35-59.

Arıkan, K., & Turan, S. L. Ortaöğretim Biyoloji Öğretimi Programının Yaban Hayatı Bileşenleri Açısından Değerlendirilmesi The Evaluation Of Secondary School Biology Curriculum İn Terms Of Wildlife Components.

Beyer, C. J., Delgado, C., Davis, E. A., & Krajcik, J. (2009). Investigating Teacher Learning Supports İn High School Biology Curricular Programs To İnform The Design Of Educative Curriculum Materials. *Journal Of Research İn Science Teaching*, *46*(9), 977-998.

Can, A. (2014). *SPSS ile bilimsel araştırma sürecinde veri analizi* (2. b.). Ankara: Pegem.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research Methods in Education* (6. b.). London: Routledge.

Çakmak, M., & Gürbüz, H. (2014). Biyoloji dersi ortaöğretim programinin eğitim durumlari öğesine ilişkin öğretmen görüşleri. *Eğitim ve Öğretim Araştırmaları Dergisi, 3*(1), 299-312.

Çevik, M., & Atıcı, T. (2015). Mevcut biyoloji dersi öğretim programinin mesleki ve teknik liselerde görevli öğretmen ve öğrenci görüşlerine göre değerlendirilmesi ve yeni bir taslak program önerisi: fotosentez konusu örneği. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi, 35*(3), 423-441.

Demir, S., & Demir, A. (2012). Türkiye\'De Yeni Lise Öğretim Programları: Sorunlar Beklentiler Ve Öneriler. *İlköğretim Online*, *11*(1).

Erdoğan, M. N., & Köseoğlu, F. (2012). Ortaöğretim Fizik, Kimya Ve Biyoloji Dersi Öğretim Programlarının Bilimsel Okuryazarlık Temaları Yönünden Analizi. *Kuram Ve Uygulamada Eğitim Bilimleri, 12 (4)*, 2889-2904.

Gerçek, C., & Soran, H. (2005). Öğretmenlerin Biyoloji Öğretiminde Deneysel Yöntem Kullanma Durumlarının Belirlenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *29*(29).

Güneş, M. H., & Aksan, Z. (2015). Türkiye Ve Güney Kore Biyoloji Öğretim Programlarının Karşılaştırılması. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi*, *1*(33), 20-41.

İrez, S., & Yavuz, G. (2009). Biyoloji Öğretmenlerinin Yeni Öğretim Programlarının Getirdiği Değerlendirme Yaklaşımları Hakkındaki Görüş Ve Uygulamaları.

Kendler, B. S., & Grove, P. A. (2004). Problem-Based Learning İn The Biology Curriculum. *The American Biology Teacher*, *66*(5), 348-354.

MEB. (2013). *Ortaöğretim Biyoloji Dersi (9-12. sınıflar) Öğretim Programı.* Ankara: MEB.

Ocak, İ., Ocak, G., & Boyraz, S. (2016). Ortaöğretim öğretim programlarında eğitim durumlarının değerlendirilmesine yönelik ölçek geliştirme: geçerlik ve güvenirlik çalışması. *INTE International Conference on New Horizons in Education.* Viyana: INTE.

Temelli, A. & Kurt, M. (2011). Biyoloji Öğretmenlerinin Kullandıkları Öğretim Yöntemleri Ve Bu Yöntemlerin Öğrenci Başarısına Etkileri Hakkındaki Görüşleri. *E-International Journal Of Educational Research*, 2(2), 65-76.

Uzun, N. & Sağlam, N. (2003). Ortaöğretim Biyoloji Programında Genetik Konularının Değerlendirilmesi Ve Öğrencilerin Genetiğe Karşı İlgisinin Saptanması. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *24*(24).

Uzun, N. & Sağlam, N. (2007). Ortaöğretimde Çevre Eğitimi Ve Öğretmenlerin Çevre Eğitimi Programları Hakkındaki Görüşleri. *Eğitim Araştırmaları Dergisi*, *26*, 176-187

Yarden, A., Brill, G., & Falk, H. (2001). Primary Literature As A Basis For A High-School Biology Curriculum. *Journal Of Biological Education*, *35*(4), 190-195.

Zion, M., Shapira, D., Slezak, M., Link, E., Bashan, N., Brumer, M., & Mendelovici, R. (2004). Biomind—A New Biology Curriculum That Enables Authentic İnquiry Learning. *Journal Of Biological Education*, *38*(2), 59-67.

EVALUATION OF THE NEW MATH CURRICULUM IMPLEMENTED in HIGH SCHOOLS BY VIEWS OF TEACHERS AND STUDENTS in SECONDARY EDUCATION[1]

Mustafa ÇEVİK
Karamanoglu Mehmetbey University, Faculty of Education, Department of Primary Education, Turkey
mustafacevik@kmu.edu.tr

Cihat ABİDOĞLU
Karamanoglu Mehmetbey University, Faculty of Education, Department of Primary Education,Turkey
cabdioglu@kmu.edu.tr

ABSTRACT
This study aimed to examine the new math curriculum, which have been implemented since 2013 in our country, in accordance with views of teachers in secondary schools and students studying in these institutions. The survey model was employed, which uses quantitative data instruments, in this research in order to identify directly opinions of teachers and students for the new high school math curriculum. The study population consisted of high schools associated the Ministry of Education. The easily accessible sampling method from purposive sampling methods was adopted in the study. The sample consisted of 64 math teachers from 20 high schools and 2000 students studying in these schools in the center of Karaman city. The data obtained in this study were analyzed using appropriate parametric or non-parametric statistical analysis techniques. At the end of the study, teachers indicated that the curriculum should be associated with the everyday life with regard to educational attainment, content, teaching-learning and assessment processes and there is the lack of observing and creative activities. Students stated that the content of the curriculum is partially appropriate for their levels and there is the need to provide concrete examples and more activities.

Keywords: New high school math curriculum, teachers views, students views,

INTRODUCTION

Education is an essential part of human life and a vital factor to establish a reliable bridge between past and future. Human beings can improve the community where they live with economic, social, cultural and scientific respects by the educational level they have. The education system has a dynamic structure and should be developed with the requirements of the age. The curriculum is one of the most important components of the education system. It is inevitable to carry on evaluation and development studies on the curriculum in the developing and changing world. In this context, math curriculums were affected by developments in all school levels from primary to higher education together with developments in science, technology and education and changes were anticipated in the curriculum (Baykul, 2012).

The curriculum is the life mechanism that covers all events about a course instruction planned to acquire individuals at school or outside the school (Demirel, 2009). The curriculum is rather important since teachers take as their main source of the guidance in education. Therefore it should be meaningful for teachers when forming these programs. Otherwise, there is a risk of discouraging teachers into the program. It is beneficial to receive opinions of teachers when implementing the curriculum change due to this risk (Merter and Şan, 2012). Today information resources continually increase and rapid change and development take place in technology. These and similar developments are likely to affect education. Different approach methods in math teaching are emerging, which make necessary and compulsory to update math curriculums. Countries revise and update their math curriculums time to time considering designated general objectives (Baki, 2008). The goal of these updates is undoubtedly to make education more qualified.

The first math curriculum in Turkey was prepared in 1924 and revised in 1934. The course hours of the programs of 1935 and 1939 are identical with the programs of 1924 and 1934 years, but main objectives and some suggestions were placed in these new curriculums. Given the fundamental goals of the math education curriculum, it can be seen that these objectives are calculation, mathematical knowledge for other disciplines, reasoning, systematic memory exercises and focusing on math for people who are willing to specialize after high school. When the curriculum in 1956 was examined, some small changes such as only using “Astronomy” instead of the “Cosmography” term is seen. Any clues about teaching techniques, assessment and targets were not given in this program. The program issued in 1970 was the revised version of the curriculum in 1956 and divided into two

[1] The research was supported by Karamanoglu Mehmetbey University, The Scientific Research Projects Commission within the scope of the project whose number is 19-M-15.

braches as in tenth and eleventh grade. The modern (new) math curriculum was taken place in all secondary schools in 1976 and this has led to a debate about the opinions of math for different generations. The program issued in 1987 was worked through. Eleventh grade was divided into three branches as math, natural science and literature. Weekly course hours vary according to the branch. Although the program was in detail, the main objectives were given to teachers in the form of listed recommendations (Argün et al., 2010). The new secondary education math curriculum issued in 2005 were prepared based on national and international research done in math education, math programs of developed countries, experiences in math education in our country. The vision of the program was "Every student learns math" (MEB, 2005). The latest updated version of the secondary education math curriculum was in 2013 and currently being implemented.

Curriculum evaluation is the data collection on the effectiveness of the curriculums with various observation and measurement tools, interpretation of obtained data comparing with criteria that are pointers of the effectiveness of the program and decision-making process about the effectiveness of the program (Erden, 1998). Program evaluation is the final and supplementary circle of the curriculum development process. Due to curriculums require the quality control, determining whether the educational activities serve its purposes, or lead to undesirable results and waste of energy during activities is possible with continuous assessment. Assessment is an indispensable process allowing the program and education to be restorative (Ertürk, 1998).

Teachers who are practitioners of the curriculum have a very active role in the program development, evaluation and implementation process. Knuth (2002) highlighted that views and beliefs of teachers play an important role while reforming the curriculum of the courses such as math. According to Handal and Herrington (2003), the curriculum developed taking the opinions and beliefs of teachers into account are more successful. As the teachers are the practitioners of the program, their opinions are of great importance to implement the program smoothly and effectively and to perform objectives of the program. The study of Koca (199) also confirms this by indicating that teachers' needs and opinions should be taken while developing the program. When examining the literature many studies for evaluation can be seen. Taşçı (2004), Bolat-Soycan (2006), Batdal (2006), Halat (2007), Akça (2007), Aksu (2008), Bal (2008), Yıldırım (2009), Duru and Korkmaz (2010), Çelen (2011), Budak and Okur (2012), Bal and Dinç-Artut (2013), Özdal and Karataş (2015), some of which aimed to evaluate programs at primary education level, can be given from these studies. Following studies about the curriculum implemented in high schools draw the attention.

İnan (2006) investigated whether there is a significant difference between opinions of teachers about the ninth grade math curriculum issued in 2005 in terms of seniority, educational level, and type of schools they work. The study was carried out with 95 math teachers in the survey model in the province of Istanbul. In the study, no significant difference was observed between opinions of teachers for the ninth grade math curriculum issued in 2005 by school types and seniorities of teachers, but there were significant differences in some sub-dimensions by education levels and this difference is in favor of teachers who received master's degrees. Yurday (2006) carried out a study to investigate the effect of teachers' beliefs on perceptions of the new math curriculum. The study was conducted with four math teachers in a high school in the province of Trabzon. According to the research results, teachers have traditional beliefs about the nature of math and teaching and learning math and they perceive foresights in the new curriculum different with the influence of these beliefs. According to research results related to assessment and evaluation, teachers perceive assessment and evaluation proposed by the new curriculum in the form of evaluating given assignments and projects as scores, unlike to former. Bulut (2006) investigated whether math teachers of competences differ by seniority, school types, and educational level for traditional and alternative assessment placed in assessment dimension of the ninth grade math course curriculum in 2005. The study was conducted with 2668 math teachers in secondary schools in 21 districts within the European side of the province of İstanbul. According to research results, while competencies of teachers for the traditional assessment remain unchanged by school types, significant differences were observed in competencies for alternative assessment by school types.

When examining the related literature, a great number of studies related to curriculums can be seen apart from the above studies. It can be seen that many of these studies are related to updated programs in 2005 or 2008 (Cansız-Aktaş 2008; Kutluca and Aydın 2010; Konur and Atlıhan 2012; Merter and Şan 2012; Cansız-Aktaş and Baki 2012; Batdı 2014). Limited studies are available for the updated program in 2013.

Çiftçi and Tatar (2015) conducted a study to determine opinions of secondary education math teachers for the math curriculum. The study was carried out with 9 teachers working in different cities. Research results indicated that teachers are positive for the new program that decreases the intensity of the subjects and regulate the gains but they criticized removal of some subjects and adoption of readiness levels of students. Dikbayır and Bümen (2016) studied commitment to the curriculum in ninth grade math course with three teachers from three different types of

high schools in terms of compliance and participant reactions. The study concluded that features of students, curriculums, teachers and institutions along with the centralized education system are determinative in commitment of teachers to the curriculum in which teacher-centered education is carried out.

The new math curriculum put into practice with 2013-2014 education term has been implemented gradually in our country. The curriculum will complete the final phase by applying into the twelfth grade in the 2016-2017-education term. As the program is new, studies on this topic in the literature are limited with the two studies above and there is a gap here in this case. In addition, it can be seen that the program has not been evaluated in terms of its overall framework and scope in the aforementioned studies. This study aimed to contribute filling this niche in the literature.

In the study, it was aimed to evaluate gains, teaching and learning, the content and assessment items of the new secondary education math curriculum in detail in accordance with opinions of math teachers in high schools and students taking this course. The study is original in terms of discussing all aspects of the curriculum in-depth. Besides, no studies in which the program was evaluated based on views of students who are direct payers of the program were come across in the literature. This study differs from other studies in this respect.

Purpose of the Study

It was aimed to evaluate views of math teachers and students for the new secondary education math curriculum issued since 2013. The following questions were asked in this regard:

1. What are the views of math teachers in high schools for the new secondary education math course curriculum?
2. What are the views of high school students for the new secondary education math course curriculum?
3. Is there a significant difference between views of high school math teachers for the new secondary education math course curriculum and different variables?
4. Is there a significant difference between views of high school students for the new secondary education math course curriculum and different variables?

METHODOLOGY

The study was structured in the survey model based on the quantitative research design. Survey models are research approaches aiming to describe past or current situations as they are. Events, individuals or objects subject to the research are tried to be described in their own terms and as they are (Karasar, 2005). The study population consisted of high schools associated by the Ministry of Education.

Study Group

The easily accessible sampling method from purposive sampling methods was adopted in forming the study group of this research. The sample consisted of 64 math teachers from 20 high schools and 2000 students studying in these schools in the center of Karaman city.

Demographic information of math teachers participating in the study is given Table 1.

Table 1. Demographic features of math teachers participating in the study.

Independent Variables	Groups	f (frequency)	% (percentage)
Gender	Female	30	46.9
	Male	34	53.1
Terms of Office	1-5	15	23.4
	6-10	10	15.6
	11-15	8	12.5
	15-20	18	28.1
	21 and over	13	20.3
Classes	9^{th} Grade	17	26.6
	10^{th} Grade	32	50
	11^{th} Grade	10	15.6
	12^{th} Grade	5	7.8
Receiving In-Service Training	Yes	14	21.9
	No	50	78.1
Graduated Faculty	Science	35	54.7
	Education	29	45.3
Total		**64**	**100**

It is seen in the Table 1 that 30 (46.9%) participants are female and 34 (53.1%) participants are male. When participants' terms of office were examined, it is observed that participants fall intensely in the range of 15-20 years (28.1%). While 17 (26.6%) participants teach in 9th grade, 32 (50%) participants teach in 10th grade, 10 of them (15.6%) teach in 11th grade and 5 (7.8%) participants teach in 12th grade. While 14 (21.9%) participants received in-service training, 50 (78.1%) participants did not. 35 (54.7%) participants graduated from Science Faculty and 29 (45.3%) participants graduated from Education Faculty.

Demographic information of students participating in the study is given Table 2.

Table 2. Demographic Features of Students Participating in the Study

Independent Variables	Groups	f (frequency)	% (percentage)
Gender	Female	988	49.4
	Male	1012	50.6
School Type	Science	179	9,0
	Anatolian.	973	48,7
	Social Science	128	6,4
	Vocational	720	36,0
Grades	9th Grade	555	27,8
	10th Grade	630	31,5
	11th Grade	539	27,0
	12th Grade	276	13,8
Enthusiasm for Math	Yes	1217	60.9
	No	783	39.2
Total		**2000**	**100**

It is seen in Table 2 that 988 (49.4%) students are female and 1012 (50.6%) students are male. While 179 (9%) students study in Science high school, 973 (48.7%) students study in Anatolian high school, 128 (6.4%) students study in Social Science high school and 630 (31.5%) students study in Vocational high school. While 555 (27.8%) students in 9th grade, 630 (31.5%) students in 10th grade, 539 (27%) students in 11th grade and 276 (13.8%) students in 12th grade. While 1217 (60.9%) students indicated enthusiasm for math, 783 (39.2%) did not.

Development and Implementation of the Data Collection Instrument

Development of Teacher Surveys

The survey entitled " Views of High School Math Teachers for the New Math Curriculum", which is one of the quantitative data collection tools of the research, consists of 5 sections. The survey questions were developed by the researchers and finalized with the opinions of 2 expert academics in the measurement field and 2 math teachers. Validity and Reliability of the study was conducted with the pilot study. The draft scale was applied to 50 participants in the pilot study and "exploratory factor analysis" was applied for the structure validity in accordance with the obtained data.

Table 3. KMO and Barlett's Test Results of Survey Items

Kaiser-Mayer-Olkin (KMO) Measure of Sampling Adequacy		.63
Bartlett's Test	Chi-Square	1148,967
	Sd	120
	Sig.	.000

p<0.01

Minimum .60 KMO value is sufficient to perform the factor analysis on data (Pallant, 2007). Items' loading values are considered to be at least .30 in determining items of the scale in the explanatory factor analysis (Büyüköztürk, 2009). Besides 25 degrees "varimax" axis rotation was made in the construct validity. The reliability of the scale was examined by the internal consistency coefficient. According to analysis results, items that ensured the construct validity were included in the final scale. The scale consists of 5 sections. The first section includes personal information. The second section includes questions about the program gains and the Cronbach alpha reliability coefficient was calculated as .84. Gains section formed of 2 sub-dimensions and while 1,2,6,13,15,16th questions are measuring "relevancy of gains to the program objectives", 3,5,7,11,12,14th questions measure "relevancy of gains to students' levels". Item factor sub-score was limited to .50 and 4,8,9, and 10th questions were

removed in this case. The third section includes questions for the program content and the Cronbach alpha reliability coefficient was calculated as .77. The content section formed of 2 sub-dimensions and while 1,2,3,9,11,15,16,17,18,19th questions are measuring "relevancy of the content to students' levels", 5,6,8,12,13,20,21,23rd questions measure "relevancy of the content to the program objectives". Item factor sub-score was limited to .50 and 10, 14,22 and 24th questions were removed in this case. The fourth section includes questions for the teaching and learning processes and the Cronbach alpha reliability coefficient was calculated as .82. The teaching-learning section formed of a single dimension. This 14-item section was limited with Item factor sub-score of .50 and 4, 5,6,7, and 12th questions were removed. The fifth section includes questions for the assessment process of the program and the Cronbach alpha reliability coefficient was calculated as .78. The evaluation section formed of a single dimension. This 11-item section was limited with Item factor sub-score of .50 and 6,8, and 9th questions were removed for this reason. The Cronbach alpha internal consistency coefficient of the scale was above .70, which suggests that the scale is reliable (Field, 2005).

Table 4. Factor Distributions and Loadings with Varimax Rotation of Items in the Teacher Scale

Section	Qs	Load. Val.	Section	Qs	Load Val.	Section	Qs	Load. Val.	Section	Qs	Load. Val.
Gains	Q1	80	Content	Q1	.46	Teaching-Learning	Q1	.58	Evaluation	Q1	.71
	Q2	.74		Q2	.71		Q2	.77		Q2	.63
	Q3	.77		Q3	.61.		Q3	.50		Q3	.60
	Q5	.58		Q5	.54		Q8	.71		Q4	.68
	Q6	.63		Q6	.56		Q9	.77		Q5	.60
	Q7	.78		Q8	.66		Q10	.68		Q7	.61
	Q12	.50		Q9	.61		Q11	.55		Q10	.71
	Q13	.73		Q11	.54		Q13	.66		Q11	.63
	Q14	.65		Q12	.50		Q14	.70			
	Q15	.72		Q13	.58						
	Q11	.50		Q15	.62						
	Q16	.67		Q16	.78						
				Q17	.80						
				Q18	.56						
				Q19	.58						

Factor loading distribution of items ranged from .50 to .80. It was suggested that the factor loading value needs to be above .30 and the difference between two high loading values needs to be at least .10 (Çokluk et al., 2010).

Development of Students' Surveys

Another quantitative data instrument of the research is the survey entitled "Opinions of High School Students for the New Math Curriculum". The survey developed by the researchers consists of 2 sections. The survey was finalized with the opinions of 2 expert academics in the measurement field and 2 math teachers. Reliability and Validity of the scale was conducted with the pilot study. The draft scale was applied to 250 participants and "explanatory factor analysis" was applied for the construct validity in accordance with obtained data. First, KMO and Bartlett's Test values were examined in order to perform the factor analysis.

Table 5. KMO and Barlett's Test Results of Survey Items

Kaiser-Mayer-Olkin (KMO) Measure of Sampling Adequacy		.84
Bartlett's Test	Chi-Square	2358.692
	Sd	28
	Sig.	.000

p<0.01

KMO value of the survey is .82 and the value of Barlett's test is .00, which means that factor analyses of survey items can be performed (Büyüköztürk, 2009). The second section of the survey includes opinions of students for the new math curriculum. The Cronbach alpha reliability coefficient of this section was calculated as .70. Items below .40 were removed from the survey and reduced to 8 questions in the factor analysis done for the validity.

Table 6. Factor Distributions and Loadings with Varimax Rotations of Items in the Student Survey

Questions	Load. Values	Questions	Load. Values
Q1	.65	Q8	.46
Q3	.65	Q10	.40
Q4	.49	Q12	.63
Q6	.41	Q13	.63

As seen in Table 6, factor loading distributions of items ranged from .40 to .80.

Data Analysis

Data obtained in this study were analysed with SPSS 16.0 packet programme. First the normality test was performed to determine whether the date is normally distributed. When examining differences in the scores of scales between groups, it is necessary to determine whether scale scores are normally distributed in each group separately. While results of Kolmogorov-Smirnov test (a) were considered in the variables with sample greater than 50, results of Shapiro-Wilk test were considered in the variables with sample smaller than 50. In this regard, Kalmogorov-Smirnov (a) test results were considered (Büyüköztürk, 2009).

Table 7. Normality Test Results for Dimension and Sub-Dimensions of Opinions of Teachers and Students for the New Math Curriculum Scale

	Kolmogorov-Smirnov Statistics	**sd**	**p**
Teacher Survey			
Relevancy of Gains to Program Objectives Sub Dimension	.266	64	.00
Relevancy of Gains to Levels of Students Sub Dimension	.169	64	.00
Relevancy of the Content to Program Objectives Sub Dimension	.142	64	.00
Relevancy of the Content to Levels of Students Sub Dimensions	.109	64	.04
Teaching and Learning Dimension	.077	64	.20*
Assessment Dimension	.124	64	.01
Student Survey			
Evaluation of the Curriculum	.088	2000	.00

*p>.05, sd: Number of Participants, p: Significance value

When Table 7 was examined, it is seen that normality test results of two sub dimension scores of gain section of the teacher scale were not normally distributed by groups (p<.05). In the case of P<.05, it is indicated that the related variable did not come from the normal distribution (Can, 2016). Similarly, dimension and sub dimensions of the content and evaluation sections were not normally distributed (p<.05). Teaching-learning dimension of the scale is normally distributed (p>.05). To apply a parametric test to a variable, the variable examined for normality should be normally distributed in each group. Analyses were performed with the Mann Witney U test from non-parametric tests for gains, the content and assessment dimensions and sub-dimensions of the scale. T-test and one way ANOVA from parametric tests were performed for the teaching-learning dimension. It is also seen that normality test results of the program evaluation dimension scores were not normally distributed in the student survey (p<.05). In determining mean, the range of 1.00 - 1.64 indicates, “disagree”, 1.65 – 2.29 indicates “not sure” and 2.30 – 3.00 indicates, “agree”. The significance level was taken as .01.

FINDINGS

In this section, the findings obtained for the purposes of the study and their interpretations were given. In this context; while opinions of teachers for the new math curriculum were being evaluated, whether dimension and sub-dimensions of four components of the curriculum differ in terms of variables such as gender, classes, graduated school of teachers were examined.

In addition, views of the students were evaluated and whether these views differ in terms of variables such as gender, school type and enthusiasm for math.

Table 8. Descriptive Data for Dimensions of the Views of Teachers and Students for the Math Curriculum Survey

	N	$\bar{X}$	ss
Teacher Survey			
Relevancy of Gains to Program Objectives Sub-Dimension	64	**2.43**	3.71
Relevancy of Gains to Students' Level Sub-Dimension	64	**1.17**	2.68
Relevancy of the Content to Program Objectives Sub-Dimension	64	1.67	5.58
Relevancy of the Content to Students' Level Sub-Dimension	64	2.01	4.17
Teaching Learning Dimension	64	1.90	5.41
Assessment Dimension	64	1.97	4.57
Student Survey			
Relevancy of the Curriculum to Program Objectives	1871	1.96	3.19

As seen in Table 8, it was emerged from the opinions of teachers that gains were relevant to program objectives, but gains were not relevant to students' level. In addition, teachers were not sure about the content of the program, teaching-learning and assessment dimensions. Students participated in the study were also not sure about the evaluation of the curriculum.

Opinions of Teachers participated in the Study for the New Math Curriculum

Table 9. Items that Have Highest Means in the Gain Dimension of the Math Curriculum

Items for Gains	**Agree**		**Not Sure**		**Disagree**		**Mean**
	(f)	**(%)**	**(f)**	**(%)**	**(f)**	**(%)**	**($\bar{X}$)**
1.Targeted gains are clear and understandable.	48	75	6	9.4	10	15.6	2.59
13.Gains are consistent.	45	70.3	8	12.5	11	17.2	2.53
14. Gains are in accordance with students' level.	26	40.6	4	6.3	34	53.1	1.87
16. Gains were formed in accordance with the general objectives of the program.	40	62.5	9	14.1	15	23.4	2.39

As seen in Table 9, 48 (75%) of 64 math teachers indicated that gains are clear and understandable, 44 (68.8%) math teachers indicated that gains are in accordance with students' level, 45 (70.3%) math teachers indicated that gains are coherent and 40 (62.5%) teachers indicated that gains are relevant for the general objectives of the program for gains.

Table 10. Items that Have Highest Means in the Content Dimension of the Math Curriculum

Items for the Content	**Agree**		**Not Sure**		**Disagree**		**Mean**
	(f)	**(%)**	**(f)**	**(%)**	**(f)**	**(%)**	**($\bar{X}$)**
2.Concrete examples are given in the curriculum.	26	40.6	9	14.1	29	45.3	1.95
5.Gains in the curriculum are consistent with the content.	44	68.8	7	10.9	13	20.3	2.48
8. The program content is understandable by teachers and students.	31	48.4	9	14.1	24	37.5	1.89
18. The content enables students to develop alternative solution methods for the problems.	34	53.1	8	12.5	22	34.4	1.81

As seen in Table 10, 29 (45.3%) teachers of 64 math teachers participated in the study indicated that concrete examples were not given in the program content, 44 (68.8%) teachers indicated that the content is consistent with gains, 31 (48.4%) teachers indicated that the program content is understandable by teachers and students and 34 (53.1%) teachers indicated that the program content allows students to develop alternative solutions for the problems for the content.

Table 11. Items that Have Highest Means Teaching – Learning Dimension of the New Math Curriculum

Items for Teaching – Learning	Agree		Not Sure		Disagree		Mean
	(f)	(%)	(f)	(%)	(f)	(%)	($\bar{X}$)
1. The program aimed students to participate actively in the courses.	27	42.2	7	10.9	30	46.9	1.95
2. Teaching – Learning activities in the Program are clear and understandable.	33	51.6	7	10.9	24	37.5	2.14
9. Teaching – Learning process in the program is leading for teachers in teaching the course.	32	50	5	7.8	27	42.2	2.07
10. Teaching – Learning process in the program is consistent with targeted gains.	31	48.4	14	21.9	19	29.7	2.18

As seen in Table 11, 30 (46.9%) teachers of 64 math teachers indicated that the program did not aim students to participate actively in the class, 33 (51.6%) teachers indicated that teaching – learning activities in the program is clear and understandable, 32 (50%) teachers indicated that teaching – learning process in the program is leading for teachers for teaching the class and 31 (48.4%) teachers indicated that teaching – learning process in the program is consistent with the targeted gains for the teaching – learning dimension.

Table 12. Items that Have Highest Means in the Evaluation Dimension of the New Math Curriculum

Items for Assessment	Agree		Not Sure		Disagree		Mean
	(f)	(%)	(f)	(%)	(f)	(%)	($\bar{X}$)
1. The Assessment is guiding teachers on how to follow a path after the assessment and evaluation process.	32	50	11	17.2	21	32.8	2.17
5. A Variety of assessment and evaluation techniques are available in the program.	33	51.6	9	14.1	22	34.4	2.17
7. Teachers are capable of preparing different assessment techniques.	35	54.2	11	17.2	18	28.1	2.26
10. The Proposed assessment processes are understandable and clearly expressed.	35	54.2	11	17.2	18	28.1	2.26

As seen in Table 12, 32 (50%) teachers of 64 math teachers participated in the study indicated that the assessment is guiding teachers on how to follow a path after the assessment and evaluation process, 33 (51.6%) teachers indicated that various assessment and evaluation techniques are available in the program, 35 (54.2%) teachers indicated that teachers are capable of preparing different assessment and evaluation techniques and 35 (54.2%) teachers indicated that the proposed assessment and evaluation techniques are clear and understandable for the assessment dimension of the curriculum.

Opinions of Students Participated in the Study for the New Math Curriculum

Items that have highest means in the student survey are given in Table 13.

Table 13. Items that Have Highest Means in the Dimension of the Relevancy of the New Math Curriculum to Program

Items	Agrees		Not Sure		Disagree		Mean
	(f)	(%)	(f)	(%)	(f)	(%)	($\bar{X}$)
12. Assessment techniques applied by our teacher are appropriate to assess students.	482	24.1	836	41.8	671	33.6	2.09
6.Topics we learned are detached from everyday life.	629	31.5	789	39.5	573	28.7	1.97
8.We are just listening to when teachers explaining the topics.	528	26.4	639	32	820	41	2.14
13. I am having difficulty in learning math, as there are not enough activities.	515	25.8	855	42.8	579	29	2.03

As seen in Table 13, 629 (31.5%) students of 2000 students participated in the study indicated that topics in the program are detached from the everyday life, 789 (39.5%) students are not sure. 820 (41%) students indicated that they are not listening to their teachers. While 826 (41.8%) indicated that they are not sure about the relevancy of assessment and evaluation techniques of the program teachers applied to assess themselves, 671 (33.6%) stated they are appropriate. In addition, 855 (42.8%) students indicated that they are not sure if they have difficulties in learning math, as there are not enough activities in the math class, 579 (29%) stated they do.

Opinions of Teachers for Components of the Curriculum by Different Variables

Analysis results that indicate significance of opinions of participants for gains dimension of the math curriculum by gender dimension were given in Table 14.

Table 14. Mann Witney U – Test for Gain Sub-dimension of the Survey by Graduation Type of Teachers participated in the Study

	Graduation	N	Rank Mean	Sum of Rank	Z	U	p
Relevancy of the Program to its Objectives	Education	35	29.74	1041	-1.32	411	.18
	Science	29	35.83	1039			
	Total	64					
Relevancy to Students' Level	Education	35	36.73	1285.5	-2.02	359	.04
	Science	29	27.40	794.5			
	Total	64					

As seen in Table 14, a significant correlation was observed between relevancy of gains to students' levels and graduate of education faculty ($p<0.05$). This relation is in favor of graduate of education faculty.

Analysis results that demonstrate significance of opinions of participants for the content dimension of the new math curriculum with the term of office factor were given in Table 15.

Table 15. Kruskal Wallis H Test for Sub-dimension of the Survey by Term of Office of Teachers participated in the Study

	Term of Service	N	Rank Mean	sd	X^2	p
Relevancy of the Content to Students' Levels	1-5	15	31,20	4	8.40	.07
	6-10	10	35,60			
	11-15	8	33,94			
	15-20	18	23,78			
	21 and over	13	42,81			
	Total	64				
Relevancy of the Content to Program Objectives	1-5	15	41,00	4	6.93	.13
	6-10	10	35,60			
	11-15	8	27,75			
	15-20	18	25,00			
	21 and over	13	33,62			
	Total	64				

As seen in Table 16, no significant correlation was observed between term of service of teachers participated in the study and the content section of the survey (p>0.05). Analysis results that demonstrate significance of opinions of participants for the teaching and learning dimension of the new math curriculum were given in Table 16.

Table 16. One Way ANOVA Results for the Teaching and Learning Dimension of the Curriculum by Classes Teachers Teach

	Variance Source	Sum of Squares	sd	Mean of Squares	f	p
Teaching – Learning Dimension	Intergroup	88.83	3	59.05	1.009	.395
	Groups within	1760.91	60	58.86		
	Total	1840.75	63			

As seen in Table 16, no significant difference was observed between scores of opinions of teachers for teaching - and learning by classes they teach (F(3,60)=1,009; p>.05). Analysis results that demonstrate significance of opinions of participants for gains dimension of the new math curriculum by graduation factor were given in Table 17.

Table 17. Mann Witney U – Test for Evaluation Dimension of the Curriculum by Gender of Teachers participated in the Study

	Gender	N	Rank Mean	Sum of Rank	Z	U	p
Relevancy of Program to Program Objectives	Female	30	33.73	1012	-.50	473	.61
	Male	34	31.41	1068			
	Total	64					

As seen in Table 17, no significant correlation was observed between genders of teachers participated in the study and total scores of evaluation dimension of the program (p>0.05).

Opinions of Students for the Curriculum Components by Different Variables

Analysis results that demonstrate significance of opinions of participants for the new math curriculum by the gender factor were given in Table 18.

Table 18. Mann Witney U – Test for Relevancy of Program to Program Objectives by Genders of Students participated in the Study

	Gender	N	Rank Mean	Sum of Rank	Z	U	p
Relevancy of the Program to its Objectives	Female	988	1015.65	1003465	-1.16	484956	.24
	Male	1012	985.71	997534			
	Total	2000					

As seen in Table 18, no statistical significant correlation was observed between genders of students participated in the study and relevancy of the program to its objectives ($p>0.05$).

Analysis results that demonstrate significance of relevancy of math curriculum to its objectives and participants' enthusiasms for math were given in Table 19.

Table 19. Mann Witney U – Test for Opinions of Students for Relevancy of Program Objectives by Students' Enthusiasms for Math

	Enthusiasm for Math	N	Rank Mean	Sum of Rank	Z	U	p
Relevancy of Program to its Objectives	Yes	1217	842.87	1025778	-15.28	284625	.00*
	No	783	1245.49	975221			
	Total	2000					

$p<0.05$

As seen in Table 19, a statistical significant correlation was observed between students' enthusiasms for math and their opinions for relevancy of the program to its objectives ($p<0.05$). This relation is in favour of students who do not have enthusiasms for math.

Analysis results that demonstrate significance of relevancy of the program to its objectives by school types of participants were given in Table 20.

Table 20. Kruskal Wallis H Test for Relevancy of Program to its Objectives by School Types of Students

	School Types	N	Rank Mean	Sd	X^2	p
Relevancy of Program to its Objectives	Science High School	179	1174,03	3	49.07	.00*
	Anatolian High School	973	1036,46			
	Social Science High School	128	1093,86			
	Vocational High School	720	892,16			
	Total	2000				

*$p<0.05$

As seen in Table 20, a statistical significant correlation was observed between school types of students participated in the study and total scores of students' opinions for relevancy of program to its objectives. Mann Witney U test was performed to find out the direction of this relation. According to this, there was significance in favour of Science high school between students of Science high school and Anatolian high school (Science High School Mean = 640.87> Anatolian High School Mean= 564.66), in favour of Science high school between students of Science high school and Vocational high school (Science High School Mean = 554.72> Vocational High School Mean= 423.97), in favour of Anatolian high school between students of Anatolian high school and Vocational high school (Anatolian High School Mean = 898.48> Vocational High School Mean= 777.43), in favour of Social Science high school between students of Social Sciene high school and Vocational high school (Social Science High School Mean = 496.14> Vocational High School Mean= 411.76).

CONCLUSION

The new secondary education math curriculum issued in 2013-2014 education period will be fully implemented in 2016-2017 education period at all class levels. Therefore studies on the new secondary education math

curriculum are limited in the literature. The emerging picture that aimed to evaluate gains, teaching – learning, content and assessment components of the new math curriculum being implemented in high schools in line with the views of teachers and students as follows:

Math teachers in high schools stated about the new secondary education math curriculum that gains are clear, understandable and coherent, but they are not appropriate for the students' levels. This finding is in line with the study results of Çiftçi and Tatar (2015), which determined views of secondary education math teachers for the math curriculum. Çiftçi and Tatar (2015) reported that teachers benefited the planning of gains, but they criticized removal of some topics and the adoption of readiness levels of students. Teachers participated in the study expressed that the content of the program in consistent with the gains and the content is understandable but concrete examples were not provided. Teachers stated for the teaching – learning process of the program that teaching – learning process is guiding teachers in teaching the course, but students remain passive in activities in the program. Dikbayır and Bümen (2016) reached the conclusion that math teachers make changes in the program according to the students' levels and students have difficulties in establishing links between math and everyday life. This finding is in line with views of teachers for the content and the teaching and learning process of the program. In addition, teachers participated in the study highlighted that assessment and evaluation techniques were included in the program and these techniques are clear and understandable. Erturk (1998) stated that the evaluation process of a program is an indispensable process allowing the program and education to be restorative.

Students studying in high schools participated in the study expressed that topics in the new math curriculum were detached from the everyday life, assessment and evaluation techniques in the program and applied by teachers were not appropriate for themselves and not enough activities were included in the program. This emerging finding is in line with studies of Çiftçi et al. (2013), Merter and Şan (2012) and Bal (2008).

Considering the significance between opinions of teachers in the study and different variables, a significant difference was observed between views of them for relevancy of gains to students' levels by school types teachers graduated and it was determined that this significance is in favor of education faculty graduates. Besides, no significant difference was observed between views of teachers for the program content by terms of office. This finding is in parallel with the studies of Merter and Şan (2012), Karagülle (1998), Yapıcı and Leblebiciler (2007), Acat and Demir (2007) and Aydın (2005). No significant difference was also observed between views of teachers teaching – learning process by classes in which teachers teach. Similarly, no significant difference was found between views of teachers for the evaluation process by gender factor. No significant correlation was found between genders of students participated in the study and relevancy of the program to its objectives. However, a significant difference was identified between students' enthusiasms for math and relevancy of the program to its objectives. This significance is in favor of students who dislike math. A significant difference was determined school types of students participated in the study and views of them for relevancy of the program to its objectives. This significance is in favor of Science and Anatolian high schools. This finding indicates that students studying in Science and Anatolian high schools are more sensitive towards the curriculum.

In the study, opinions of teachers and students were received for the new secondary education math curriculum and it is considered that the findings emerged would contribute to the literature. This is because; it is less likely to encounter studies for the program in the literature due to the implementation of the program in all classes was just completed. In this context, the study is original in the field. It is considered that the obtained results are important to shed light on new programs planned to be implemented in the future.

REFERENCES

Acat, B. & Demir, E. (2007). *Sınıf Öğretmenlerinin İlköğretim Programlarındaki Değerlendirme Sürecine İlişkin Görüşleri*, XVI. Ulusal Eğitim Bilimleri Kongresi'nde Sunulan Bildiri, Gaziosmanpaşa Üniversitesi, Tokat, Türkiye, 5-7 Eylül.

Akça, S. (2007). *İlköğretim 5. Sınıf Matematik Programının Öğretmen Yönetici ve İlköğretim Müfettişleri Görüşleri Doğrultusunda Değerlendirilmesi (Afyonkarahisar İli Örneği)*. Yayımlanmamış Yüksek Lisans Tezi, Afyon Kocatepe Üniversitesi Sosyal Bilimler Enstitüsü.

Aksu, H. H. (2008). Öğretmenlerin Yeni İlköğretim Matematik Programına İlişkin Görüşleri, *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi,* 8(1), 1-10.

Argün, Z., Arıkan, A., Bulut, S. & Sriraman, B. (2010). A Brief History of Mathematics Education in Turkey: K-12 Mathematics Curricula, *ZDM Mathematics Education*, 42, 429-441.

Aydın, F. (2005*). Öğretmenlerin Alternatif Ölçme Değerlendirme Konusundaki Düşünceleri ve Uyguladıkları*, 14. Ulusal Eğitim Bilimleri Kongresi'nde Sunulan Bildiri, Pamukkale Üniversitesi, Denizli, Türkiye, 28-30 Eylül.

Baki, A. (2008). *Kuramdan uygulamaya matematik eğitimi*. Ankara: Alfa Yayınları.

Bal, A. P. (2008). Yeni İlköğretim Matematik Öğretim Programının Öğretmen Görüşleri Açısından Değerlendirilmesi, *Ç. Ü. Sosyal Bilimler Enstitüsü Dergisi,* 17(1), 53-68.

Bal, A. P. & Artut, P. D. (2013). İlköğretim Matematik Öğretim Programının Değerlendirilmesi, *Eğitim ve Öğretim Araştırmaları Dergisi,* 2(4), 164-171.

Batdal, G. (2006). İlköğretim Birinci Kademe Matematik Programının Öğretmen Görüşleri Doğrultusunda Değerlendirilmesi. Yayımlanmamış Yüksek Lisans Tezi, İstanbul Üniversitesi Sosyal Bilimler Enstitüsü.

Batdı, V. (2014). Ortaöğretim Matematik Öğretim Programı İçeriğinin Rasch Ölçme Modeli ve Nvivo ile Analizi, 9(11), 93-109. *Turkish Studies - International Periodical For The Languages, Literature and History of Turkish or Turkic,*

Baykul, Y., (2012). *İlkokulda Matematik Öğretimi*, Pegem Akademi Yayıncılık, Ankara.

Bolat Soycan, S. (2006). 2005 Yılı İlköğretim 5. Sınıf Matematik Programının Değerlendirilmesi, Yüksek Lisans Tezi, Uludağ Üniversitesi Sosyal Bilimler Enstitüsü.

Budak, M. & Okur, M. (2012). 2005 İlköğretim Matematik Dersi 6-8. Sınıflar Öğretim Programına İlişkin Öğretmen Görüşleri, *International Journal of New Trends in Arts, Sports & Science Education*, 1(4), 8-22.

Bulut, A. (2006). *9. Sınıf Matematik Dersi Öğretim Programının Değerlendirme Boyutuna Dair Öğretmen Görüşleri,* Yüksek Lisans Tezi, Yıldız Teknik Üniversitesi Sosyal Bilimler Enstitüsü.

Büyüköztürk, Ş. (2009). *Sosyal bilimler için veri analizi el kitabı.* Ankara: Pegem A Yayıncılık.

Can, A. (2016). *SPSS ile Bilimsel Araştırma Sürecinde Nicel Veri Analizi*. Pegem A yayıncılık.

Cansız Aktaş, M. (2008).*Öğretmenlerin Yeni Ortaöğretim Matematik Öğretim Programının Ölçme Değerlendirme Boyutuna Bakışlarının İncelenmesi*, Yüksek Lisans Tezi, Karadeniz Teknik Üniversitesi Fen Bilimleri Enstitüsü.

Cansız Aktaş, M. & Baki, A. (2013). Yeni Ortaöğretim Matematik Dersi Öğretim Programının Ölçme Değerlendirme Boyutu İle İlgili Öretmen Görüşleri, *Kastamonu eğitim Dergisi*, 21(1), 203-222.

Çelen, Y. (2011). *Öğretmenlerin İlköğretim Matematik Öğretim Programına İlişkin Görüşlerinin ve Matematiğe Yönelik tutumlarının İncelenmesi*, Yüksek Lisans Tezi, Ankara Üniversitesi eğitim Bilimleri Enstitüsü.

Çiftçi, O. & Tatar E. (2015). Güncellenen Ortaöğretim Matematik Öğretim Programı Hakkında Öğretmen Görüşleri, *Turkish Journal of Computer and Mathematics Education,* 6(2), 285-298.

Çiftçi, Z. B., Akgün, L. & Deniz, D. (2013). Dokuzuncu Sınıf Matematik Öğretim Programı İle İlgili Uygulamada Karşılaşılan Sorunlara Yönelik Öğretmen Görüşleri ve Çözüm Önerileri. *Anadolu Journal of Educational Sciences International*, 3(1), 1-21.

Çokluk, Ö., Şekercioğlu, G. ve Büyüköztürk, Ş. (2010). *Sosyal Bilimler İçin Çok Değişkenli İstatistik SPSS ve LISREL Uygulamaları.* Ankara: Pegem Akademi Yayıncılık.

Demirel, Ö. (2009). *Kuramdan uygulamaya eğitimde program geliştirme.* Ankara: Pegem Akademi.

Dikbayır, A. & Bümen T. N. (2016). Dokuzuncu Sınıf Matematik Dersi Öğretim Programına Bağlılığın İncelenmesi, *Uluslararası Eğitim Programları ve Öğretim Çalışmaları Dergisi,* 6(11), 17-38.

Duru, A. & Korkmaz, H. (2010). Öğretmenlerin Yeni Matematik Programı Hakkındaki Görüşleri ve Program Değişim sürecinde Karşılaşılan Zorluklar, *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi,* 38, 67-81.

Erden, M. (1998). *Eğitimde program değerlendirme.* Ankara: Anı Yayıncılık.

Ertürk, S. (1998). *Eğitimde program geliştirme.* Ankara: Meteksan A.Ş.

Field, A. (2005). *Discovering statistics using spss* (Second Edition). Thousands Oak, CA: SAGE Publications Inc.

Halat, E. (2007). Yeni İlköğretim Matematik Programı (1-5) ile İlgili Sınıf Öğretmenlerinin Görüşleri, *Afyon Kocatepe Üniversitesi Sosyal Bilimler Dergisi,* 9(1), 63–88.

Handal, B. & Herrington A. (2003). Mathematics teachers' beliefs and curriculum reform. *Mathematics Education Research Journal, 15*(1), 59-69.

İnan, A. (2006). 9. Sınıf Matematik Dersi İçin 2005 Yılında Uygulanan Öğretim Programına İlişkin Öğretmen Görüşleri. Yayımlanmış Yüksek Lisans Tezi, Yıldız Teknik Üniversitesi Sosyal Bilimler Enstitüsü.

Karagülle, M. (1988). *İlkokullarda Okunan Hayat Bilgisi Dersi Programının Değerlendirilmesi*. (Yayımlanmamış yüksek lisans tezi), Hacettepe Üniversitesi/ Sosyal Bilimler Enstitüsü, Ankara.

Karasar, N. (2005). *Bilimsel Araştırma Yöntemi.* Ankara: Nobel Yayın Dağıtım.

Knuth, E. J. (2002). Teachers' conceptions of proof in the context of secondary school mathematics. *Journal of Mathematics Teacher Education*, *5*(1), 61–88.

Koca, S. (1999). Orta öğretimde Fizik Dersi Müfredat Programlarının Değerlendirilmesi ve Alternatif Bir Fizik Programı. Yayınlanmamış Yüksek Lisans Tezi, Gazi Üniversitesi Fen Bilimleri Enstitüsü, Ankara.

Konur, K. & Atlıhan, S. (2012), Ortaöğretim Matematik Dersi Öğretim Programının İçerik Öğesinin organizesine ilişkin Öğretmen Görüşleri, *Cumhuriyet International Journal of Education*,1(2), 82-100.

Kutluca, T. & Aydın, M. (2010). Ortaöğretim Matematik Öğretmenlerinin Yeni Matematik Öğretim Programını Uygulama Aşamasında Yaşadığı Zorluklar, *T. C. Dicle Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 2(1), 11-20.

MEB (2005). *Matematik Dersi Öğretim Programı ve Kılavuzu,* MEB Yayınları, Ankara.

Merter, F. & Şan, A. (2012). Lise matematik dersi öğretim programı hakkındaki öğretmen görüşleri, *International*

Jurnal of Social Sciences, 5(7), 483-507.

Özdal, S. & Karataş, H. (2015). Beşinci Sınıf Matematik Dersi Öğretim Programına Yönelik Öğretmen Görüşleri, *Eğitim ve Öğretim Araştırmaları Dergisi,* 4(3), 226-236.

Pallant, J. (2007). *SPSS Survival Manual: A Step-By-Step Guide to Data Analysis Using SPSS for Windows.* Philadelphia, PA: Open University Press.

Sölpük, N. (2014). Matematik Dersi Öğretim Programı ile İlgili Tezlerin İncelenmesi, *Eğitim ve Öğretim Araştırmaları Dergisi*, 3(2), 33-42.

Taşçı, Ö. (2004). *İlköğretim II. Kademe Matematik Programının Değerlendirilmesi*, Yayımlanmış Yüksek Lisans Tezi, Dokuz Eylül Üniversitesi Eğitim Bilimleri Enstitüsü.

Yapıcı, M. & Leblebiciler, N.H. (2007). Öğretmenlerin Yeni İlköğretim Programına İlişkin Görüşleri. *İlköğretim Online,* 6(3), 480-490, [Online]: http://www.ilkogretim-online.org.tr.

Yıldırım S. (2009). *İlköğretim 1. Kademe Matematik Dersi Öğretim Programının Kazanımlar Boyutunun Öğretmen Görüşlerine Göre Değerlendirilmesi,* Yayımlanmış Yüksek Lisans Tezi, Çanakkale Onsekiz Mart Üniversitesi Sosyal Bilimler Enstitüsü.

Yurday, H. (2006). *Lise Matematik Öğretmenlerinin Yeni Öğretim Programına Yaklaşımları*. Yayımlanmış Yüksek Lisans Tezi, Karadeniz TeknikÜniversitesi Fen Bilimleri Enstitüsü.

FDS INTERDISCIPLINARY RESEARCH INITIATIVES

Paola Magnaghi DELFINO
Politecnico di Milano, Italy
paola.magnaghi@polimi.it

Tullia NORANDO
Politecnico di Milano, Italy
tullia.norando@polimi.it

ABSTRACT

The authors are engaged in interdisciplinary research initiatives of the **FDS** Laboratory (**F**ormation, **D**idactics, **S**cience Communication) of the Mathematics Department of the Politecnico di Milano. Among all the projects we did, the authors present four educational projects, that were carried out with teachers and pupils of secondary schools or University students. Its illustrate the variety of topics proposed, in relation to the skills of students that were addressed.

The first project *Galileo Galilei's Location, Shape and Size of Dante's Inferno: an Artistic and Educational Project* was proposed to a group of students of Graphic Art course in the Accademia di Belle Arti di Brera.

We proposed the second project *The Flying Island of Laputa* to students of a secondary school focusing on Humanities and Foreign Languages to enhance their skills in Physics.

The third project *The Marptolemaic System* was proposed to students of the last year of a secondary school focusing on Science to increase interest in Astronomy.

The last project *Analysis of the Chemists Network in Monza* was proposed to the students of the last year of the secondary school focusing on Science and deals with social application of Mathematics to problems concerning both logistics and city planning.

INTRODUCTION

We believe that Mathematics plays a very important role from a cultural point of view in the modern world and that the students, by means of these projects, could realize that Mathematics is also a powerful tool, rather than being a closed discipline. Mathematical concepts connect new ideas to other ideas learned previously or in other educational experiences, helping to learn concepts used in other disciplines. Therefore, from 2002 the **FDS** Laboratory offers interdisciplinary educational projects to motivated students of the high schools.

In particular, we offered projects to contribute to contamination between scientific thoughts and artistic insights or with social content or dedicated to history of scientific theories.

The students involved in the projects followed some lectures at **FDS** Laboratory, then they worked in their classrooms and then presented their works in national and international competitions.

Here we present four significant projects chosen among that we proposed in recent years. Some of these works were chosen to represent Italy at International Young Scientists' contests.

GALILEO GALILEI'S LOCATION, SHAPE AND SIZE OF DANTE'S INFERNO: AN ARTISTIC AND EDUCATIONAL PROJECT

We proposed the artistic and educational project *Galileo Galilei's Location, Shape and Size of Dante's Inferno: an Artistic and Educational Project* to a group of students of Accademia di Belle Arti di Brera.

In the artistic activities, drawing is the cognitive analysis of the object and of the space that contains it, providing the basis for a lather reworking of poetry with different art tools. We highlighted the double value of artistic creation building a complex path, where the multiple values of the drawing and its expressive results stand out.

It is evident that good drawing is needed to draw good geometrical figures. Exactness of a figure, its shape and size, can be measured using mathematical tools so the mathematical knowledge is applied in drawing and painting, for instance with symmetry, making right ratio and proportion.

Our project *Galileo Galilei's Location, Shape and Size of Dante's Inferno: an Artistic and Educational Project* is seen as an opportunity for scientific and artistic thought to share their points of view, starting from an interesting historical background namely the debates on the structure of Dante's *Inferno* which involved Galileo Galilei.

The work plan was divided in two parts: the mathematical laboratory and the artistic work.

The students followed lessons about the cultural environment and the mathematical aspects of the topic, shown below.

In 1588 in the lectures at the Accademia Fiorentina, Galileo examined the opposed opinions concerning the structure of the *Inferno* proposed by Antonio di Tuccio Manetti and Alessandro Vellutello.
The two arguments are identical as regards the general appearance of the *Inferno*, but are considerably different regarding the shape and the size.
In his lectures Galileo combined a clear exposition of Mathematics with his deep knowledge of Dante's *Commedia* and emphasized that the geometry of Manetti's plan is based on evidence from the poem.
Manetti's *Inferno* is a cone-shaped region in the Earth, with the vertex in the center of the Earth and the base on the surface, centered on Jerusalem. The rotation of the circular sector, which has radius identical to the terrestrial radius, generated the cone. Manetti used the straight lines which we pulled up from the center of the Earth, the one to Jerusalem, the other to the opposite extreme, or, as we might say, to the edge of the mouth of the *Inferno* (when it arrives up to the surface of the Earth). The arc, which is drawn from one to the other, is of 1700 Florentine miles. The reason of this choice is that the distance from Jerusalem to Cuma was believed to be exactly 1700 miles. Therefore, the circular sector has the angle at the vertex of 60°.
The *Inferno* does not occupy the whole spherical sector but only the part of the cone that is, under Jerusalem, at the depth of 1/8 of the terrestrial radius.
The funnel is made of nine circles. The first circle is the widest; progressively, the ninth circle is the smallest. This ninth circle surrounds Lucifer. The various levels of Manetti's Inferno are regularly spaced, in fact the first six levels are equidistant with 1/8 the radius of the Earth between each level and the next.
In order to deduce the widths of the first six levels, Manetti divided the length of the arc on the surface from Cuma to Jerusalem into two parts: 1000 miles + 700 miles. In the first 1000 miles he marked 10 spaces, each one of 100 miles, beginning from the mouth; from these partitions he deduced the widths of the first six levels. The reason of this partition into two parts is that in the Middle Ages geography the distance from Cuma to the island of Crete was considered exactly 1000 miles. When Dante arrived to the sixth level of Hell, he is located exactly below the Mount Ida, where was the statue of *Veglio di Creta* (Grand Old Man) which is the mythical origin of the infernal rivers (*Inferno*, XIV, 103-120).
Galileo did not care about these details, but in the Girolamo Benivieni's book (Benivieni, 1897) we read this explanation about the Dante's path: Dante covers only a tenth of each ring and so completes the circle after ten rings (*Inferno* XIV, 121 – 129). Manetti supposed that this spiral drawing correspond to the Dante's path
We can sketch the Manetti's plan as in the following drawing [Figure 1]

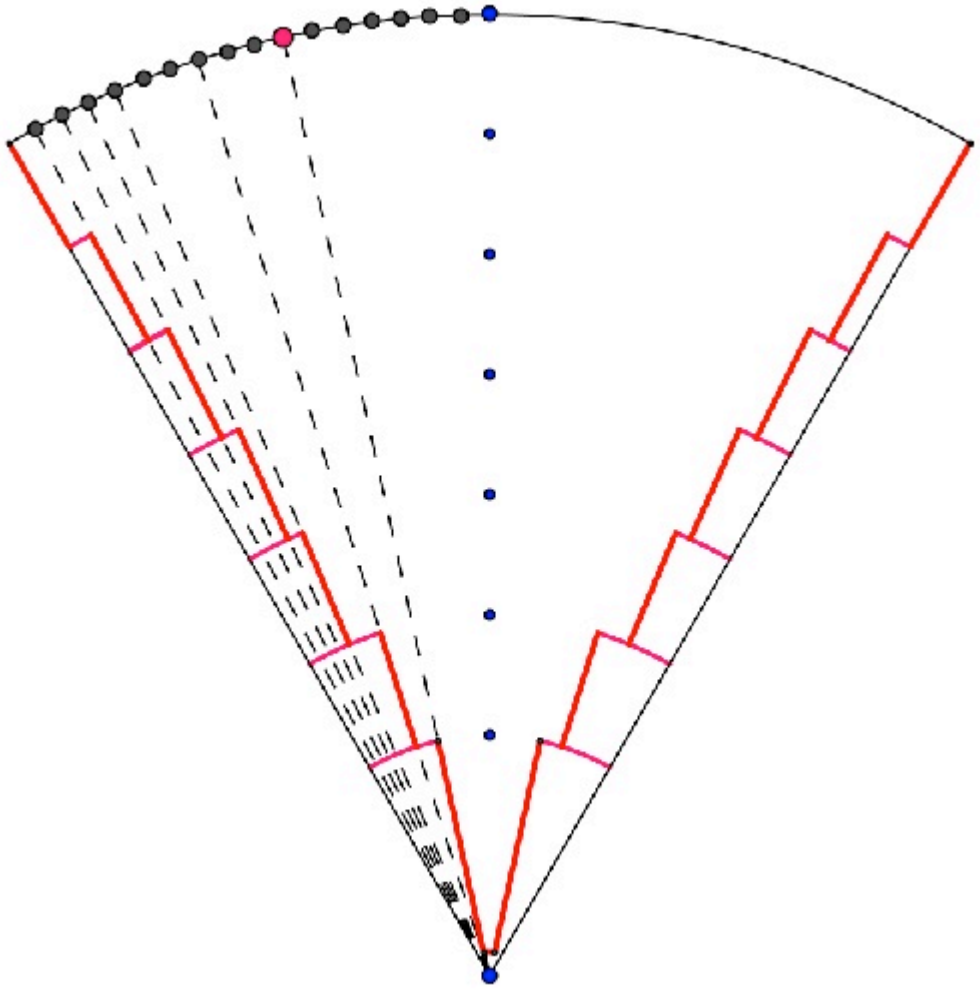


Figure 1: Manetti's plan

The seventh level contains the whole of *Malebolge*, which is depth of the Geryon's ravine, and the eighth and last level embraces the four spheres of ice including Lucifer. The first six distances from one level to the other are equal to one another, but it is not possible for the distances from the seventh and the eighth levels from the Earth's center to be the same as well, because of some verses of Dante's poem. Indeed Dante says that the ninth *bolgia* turns through 22 miles, and, in consequence, the diameter must be 7 miles.
Manetti thus supposed that the radii of the *bolge* were in aritmetic progression and Galileo concluded that the distance of *Malebolge* from the Earth's center is 81 3/22 miles via Thales similarity theorem and the Geryon's ravine is 730 5/22 depth.
Manetti calculated the size of Lucifer from the verses of the *Divina Commedia*: Dante says that he makes a greater comparison with a Giant than a Giant makes with one arm of Lucifer. If therefore Manetti knew the size of Dante and that of the Giant, he would be able to find the size of Lucifer. One knows that Dante was a man of average stature, which means three *braccia*; then Manetti concluded that Lucifer was 2000 *braccia* height.

After these lessons about the cultural environment and the mathematical aspects of the topic (Angelini, 2014), the students went into the concept of the mathematical perspective and the use of proportion and similarity in order to render mathematically the precise positions of *Inferno*'s rings. They studied the *Inferno*'s architecture, the Manetti's plan and estimated the sizes, the widths, the lengths of the eight levels and finally the height of Lucifer.

Each student created a "technical drawing" that is a scaled drawing of Dante's *Inferno*, based on Galileo's calculations, using different types of paper and free-chosen drawing techniques. The choice of different colouring techniques and papers made possible that every drawing could give emotions strongly different, despite being equal in ratio and proportion. Some students chose to work with warm watercolour tones, giving to the *Inferno* an atmosphere of energy and warmth, other of them chose cold chromatic tones and used pen and ink. Therefore there was the same *Inferno*, in shape and measure, but much different in impressions and feelings.

After, each student drew a "creative artwork" aroused from his artistic vision and inspired to the *Commedia*'s verses, unrestrained by the scientific portrayal. They were free to choose the artistic techniques, supports and dimensions of their works. They realized drawings, paintings, original engravings and various dimensions woodcuts, rich in colour and sign and all tightly related to the author's reflections. In some of their works the original model is still visible but in others is unrecovered. In both cases, all of these artworks tell us a story: the amazing transition from measure to dream.

The students' graphic works were gathered, accompanied by short sentences associated with the selected quotes of *Inferno* and displayed on the exhibition at Politecnico di Milano (May 2012). Furthermore the works were exhibited at the Museo Dantesco of Ravenna (September 2013) and at the Bergamo Science Festival (XI Edition, October 2013).

THE FLYING ISLAND OF LAPUTA

In 1726, Jonathan Swift published *Travels into Several Remote Nations of the World. In Four Parts. By Lemuel Gulliver, First a Surgeon, and then a Captain of Several Ships*, (Swift, 2005) commonly known as *Gulliver's Travels*, a prose satire that became popular and nowadays is a classic of the English literature. Many of the scientific ideas that Swift expounded in this book are ridiculous exaggerations of ideas and experiments that he might have read in the Philosophical Transactions of the Royal Society. The way the flying island moves is largely an adaptation of William Gilbert's theory of magnetism (Gilbert, 1991). The island, with its bottom made of a metal called *adamant*, resembles the *terella* and the giant balanced loadstone, which is in its bowels, is an example of the Gilbert's *dipping needle*. Because certain mineral in the earth magnetically repels the loadstone and the adamantine base of the island, the island of Laputa is able to fly and its movement are controlled by tipping the stone on way or another. In the book, Swift give us accurate data about the Laputa's physical aspect, so we propose to students of a secondary school focusing on Humanities and Foreign Languages to answer the question if Laputa can fly because of the magnetic force between the islands of Laputa and Balnibarbi.

The students read the original book of Jonathan Swift and documents about the scientific and social background in which Swift lived. Then they analyzed the scientific reasons suggested by Swift:

- Both magnetism and gravity can affect objects at a distance. Both get weaker as the objects get farther apart. Newton proved in Principia (1713) that the gravity's force is conforming to the law of the inverse square of the distance, but Newton's approach failed with magnetism. The great minds of the age were unable to solve the problem. This situation continued until the end of the eighteenth century when Coulomb placed magnetism upon a different path that stimulated the development of mathematical models based on the Newtonian theory at the beginning of the nineteenth century.
- Unlike gravity, which occurs between objects, magnetism depends on specific properties of objects. Magnetism can either pull the two objects together or push them apart, depending on which way the magnets point. Most materials feel very little magnetic force; others create forces strong enough to be felt. The adamant is maybe a diamagnetic material, so it is repelled by the applied magnetic field. Diamagnetic materials were first discovered by Seybold Justinus Brugmans in 1778, but in eighteen century the studies of electrical and magnetic phenomena became a popular craze and the gentlemen crowded the salons where popularizers of the science did experiments for entertain the aristocrats. So Swift might have noticed the diamond's diamagnetic properties. We do not know where the adamant of Swift is but it is possible that he believed in some medieval legends that conferred to the adamant particular magnetic properties.

The students examined the notion about magnetism after Gulliver's travels and in particular:

- Quantitative studies of magnetic phenomena initiated in the eighteenth century by Charles Coulomb, established the inverse square law of force and state that the attractive force between two magnetized objects is directly proportional to the product of their individual fields and inversely proportional to the square of the distance between them.
- Since 1829, scientists have been able to accurately measure the Earth's magnetic field and today the measure of the magnetic field is between 0.3 and 0.6 Gauss (3×10^{-5} - 6×10^{-5} Tesla).
- A theorem due to Earnshaw proves that it is not possible to achieve static levitation using any combination of fixed magnets and electric charges. Static levitation means stable suspension of an object against gravity. There are, however, a few ways to levitate by getting around the assumptions of the theorem. It is possible to levitate diamagnetic materials that magnetise in the opposite sense to a magnetic field in which they are placed. Diamagnetic materials are commonplace and can also be levitated in a magnetic field if it is strong enough. Water droplets and even frogs have been levitated in this way at a magnetics laboratory in the Netherlands (Physics World, April 1997). Therefore this can only be done using the strongest magnetic fields that technology has produced (Berry, 1997).

The students calculated the weight of the Laputa's island based on the measures of Gulliver and some approximated conditions about the layer of the Earth in which there are "minerals in their usual order". Swift

certainly understood the study about the English subsoil by John Stacey, published in Philosophical Transaction in 1719. In addition, they suppose that the Laputa's shape is quite a disk and they obtained [Table 1]

Laputa	Yard	m	m^2	m^3
Diameter	7837	7166		
High	300	274,32		
Area			11250,62	
Volume				3086270

Table 1: Laputa's dimensions

Laputa's high = adamant's base + soil + minerals = (182,88 + 3,66 + 87,78) m
[Table 2]

	volume	specific weight	Kg
adamant	2057513	3550	7304171150
soil	41177,268	1750	72060213
stone	41177,268	1062	43730255
total weight			7419961618

Table 2: Laputa's weight

Then Laputa can levitate if the magnetic field generated by Balnibarbi is able to act against gravity and to suspend Laputa over Balnibarbi for almost 3 meters.

Whether an object will or will not levitate in a magnetic field B is defined by the balance between the magnetic force $F = M\nabla B$ and gravity $mg = \rho V g$ where ρ is the material density, V is the volume and $g = 9.8m/s^2$.
The magnetic moment is $M = (\chi/\mu_0) V B$ so that $F = (\chi/\mu_0) B V \nabla B = (\chi/2\mu_0) V \nabla B^2$. Therefore, the vertical field gradient ∇B^2 required for levitation has to be larger than $2\mu_0 \rho g / \chi$.
Molecular susceptibilities χ are typically 10^{-5} for diamagnetic materials and, since ρ is 2404 kg/m^3, and $\mu_0 \sim 10^{-6}$, their magnetic levitation requires field gradients ~ 4800 T^2/m.
Taking l = 3m and $\nabla B^2 \sim B^2/l$ as estimate, we find that a field of the order of 120T is needed to cause levitation of Laputa.
It is another open question, namely if it is really possible the way Laputa moves and the way it does not move. Unfortunately the answer is no for both questions (Berry,1997 and Merton,1996).
The students conclude that it impossible that the Swift's island floats in the sky for three good reasons: Laputa is too heavy, Laputa flies too high and Laputians did not have tools to provide that stability conditions of the fly were satisfied.

THE MARPTOLEMAIC SYSTEM
The third project we present is "The Marptolemaic System", that we proposed in 2009.
The General Assembly of the United Nations proclaimed 2009 the International Year of Astronomy (IYA2009) because it was the fourth centenary of the publication of Kepler's first two laws of planetary motion in the *Astronomia Nova* and the first astronomical observations with the telescope by Galileo in Padua.
We proposed this project in collaboration with researchers of the National Institute for Astrophysics (INAF) to a group of students of the last year of the high school.
The purpose was to replicate the Ptolemy's geocentric model, supposing that the astronomer was a scholar of other planet in the solar system. The students chose Mars and called the astronomer Marptolemy. The reasons for interest in Mars are mainly two: the first is that this planet has similar physical characteristics to the Earth and the second is that its orbital eccentricity is 0.0935 so it is greater than that of every other planet except Mercury, and this causes a large difference between the aphelion and perihelion distances.
The eccentricity of the Earth's orbit is currently about 0.0167; the Earth's orbit is nearly circular and for this reason, Ptolemy had no doubt to assign the circular orbit to the Sun.
The students used some freeware software of mathematical calculation and astronomical simulation to obtain astronomical data as if they lived on Mars.
They restricted their study to the Sun and the interior planets: Mercury, Venus and Earth and to the two Martian satellites: Phobos and Deimos. They did observations by means *Celestia*, a freeware software, every ten days starting from 1 January 2009 until 27 December 2010.

The students described the orbits around Mars and orbital velocities of the Sun, Earth, Mercury and Venus. They obtained that the revolution's period of the Sun around Mars was about 1.96 years, while actually the period of revolution of Mars around the Sun is of 1.88 years.
Therefore, they found that the motion of the Sun relative to Mars was not uniform circular motion. They calculated the average angular velocity and found 0.51 degrees / day, while actually is 0.52 degrees / days.
They obtained that the revolution's period of the Earth around Mars was of about 736 days and that the angular velocity decreased sharply up to take on negative values from 17/12/2009 to 03/02/2010. It means that there is a retrograde phenomenon and that the motion is not uniform circular motion around Mars.
The revolution's period of Venus around Mars was between 696 and 706 days. In addition, for Venus we had a retrograde phenomenon and the motion is not uniform circular motion around Mars.
Mercury revolved around Mars in a period between 706 and 716 days and they observed a retrograde phenomenon, so the motion was not uniform circular motion around Mars. The students noted that the retrograde motion regularly repeated every 98 days; and it had a duration of about 20 days. [Figure 2], [Figure 3], [Figure 4], [Figure 5]

Figure 2: Sun's positions

Figure 3: Earth's positions

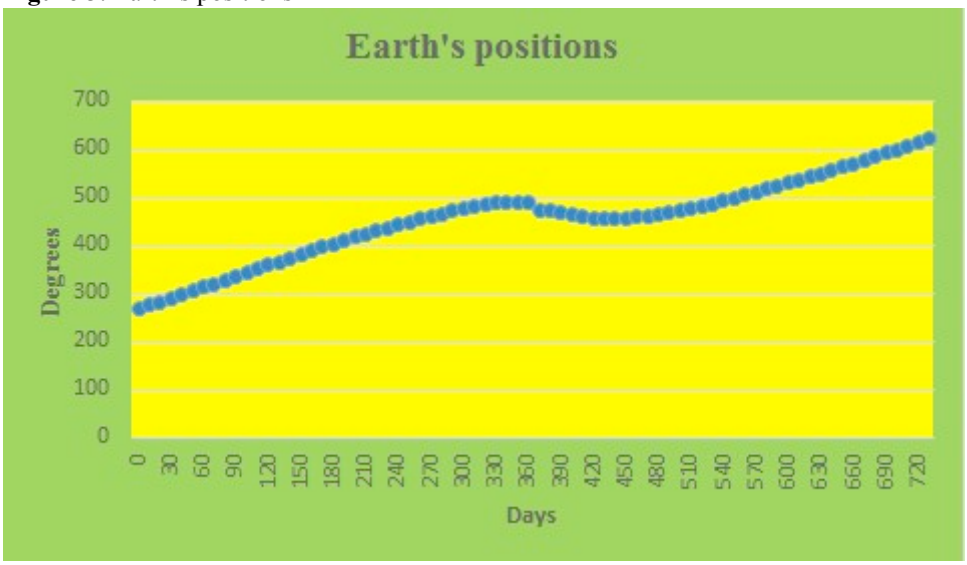


Figure 4: Venus positions

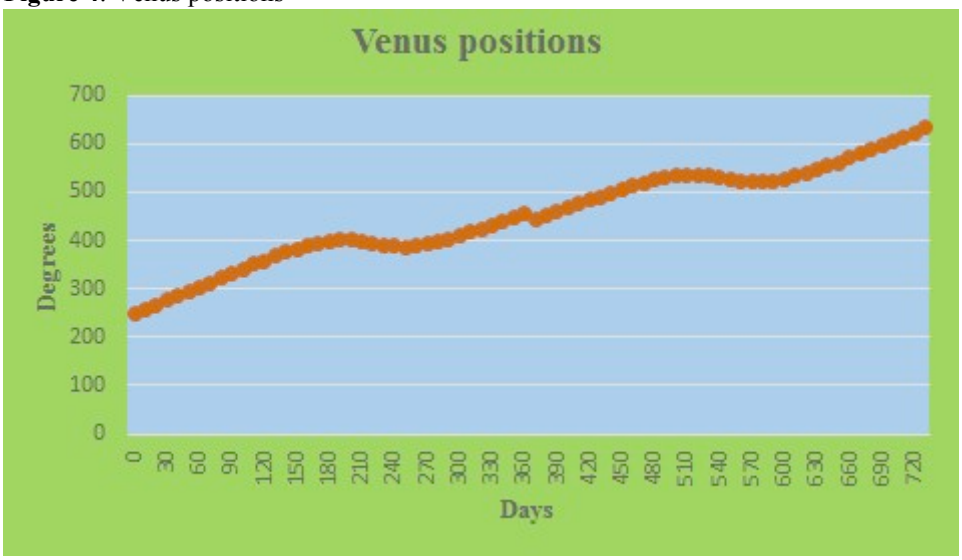
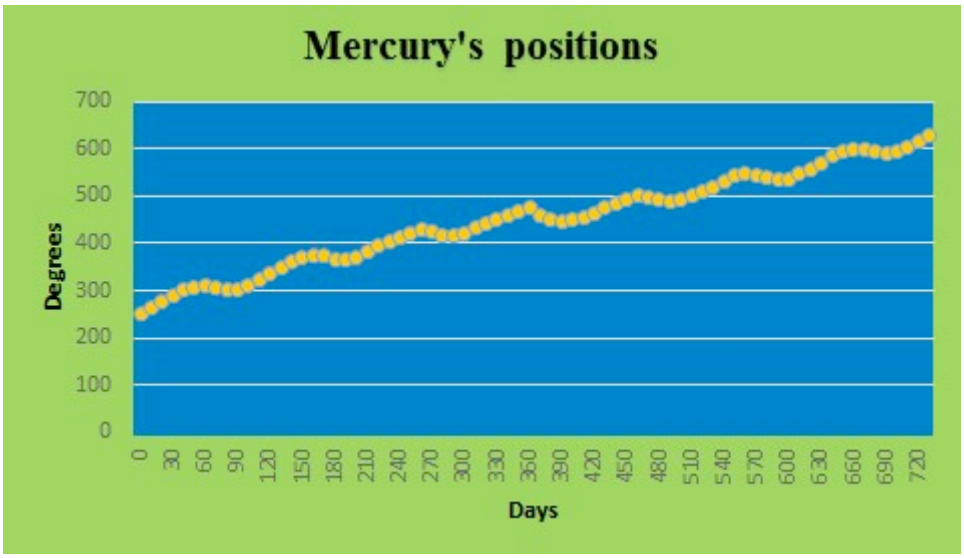


Figure 5: Mercury's positions



In conclusion, the students could describe the Marptolemaic System by two different ways:
- The first one is a repetition of the Ptolemaic theory, introducing the epicycloids explaining the orbits for any planet
- The second one is the assumption that the orbits of the planets are elliptic or composition of circles and ellipses

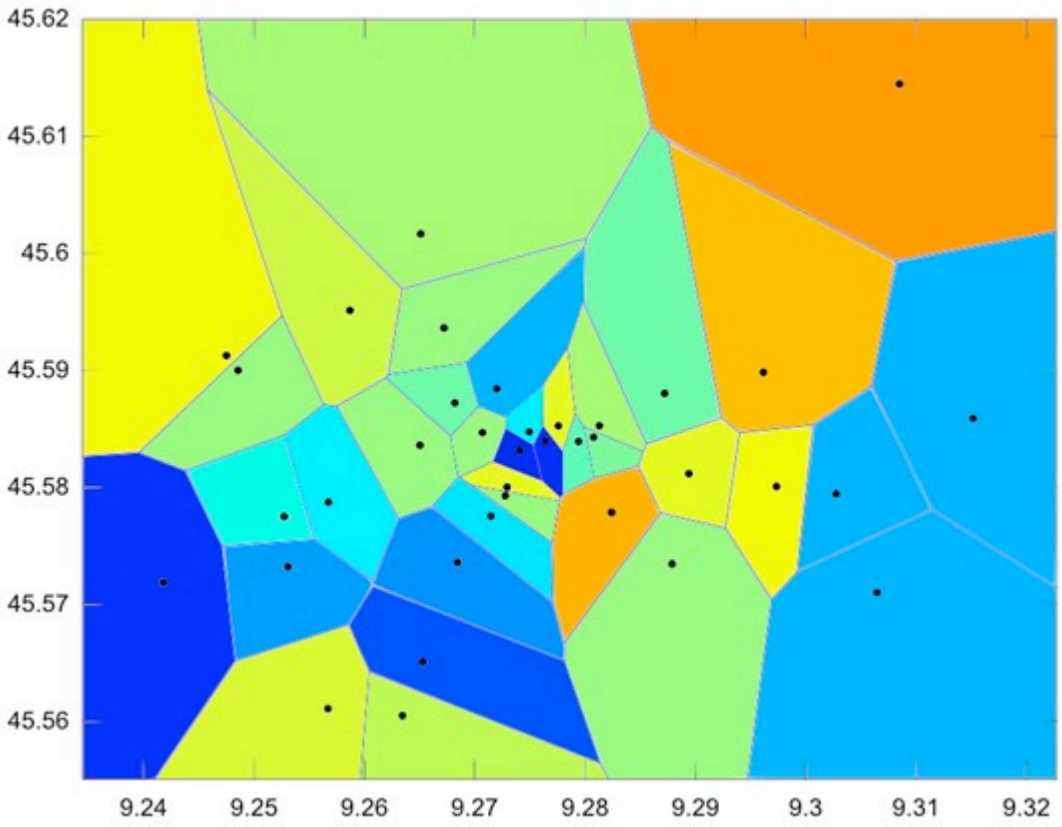
In the second case, the orbit of the Sun is an ellipse and one can describe the orbit of other planets assuming that its path revolve on a circumference, which center rotates on the solar elliptical orbit. The students called this curve *epiclyssoid.*
This work achieved the prize for the best astronomy's project in the Italian Selection of Young Scientists International Contest. [Figure 6]

Figure 6: Students' desk in the Contest Hall

ANALYSIS OF THE CHEMIST NETWORK IN MONZA
We presented this project to a group of students of a high school in Monza, a town near Milan.
The aim of this project was to rationalising the location of the chemist in Monza in order to improve the quality of the service and to find the best condition for profit.
In order to develop a model with which to compare the results of the analysis, it was necessary to find three kinds of information: the average age and the distribution of the population, the layout of the city and the list of the public and private chemists.
First, the students collected the maps of the city, the demographic data and fixed the GPS coordinates of each chemist. They decided to find for each point of the city the nearest chemist and then to estimate the basin of attraction of each store based on the parameters they established.
It is a classic problem of minimum path applied to a planar region for which is essential the accurate estimation of the distances.
Initially the students considered the opportunity of using the so-called Manhattan geometry, different from the Euclidean one, because the distance between two points is defined as the sum of the horizontal and vertical shift. This kind of geometry seemed very profitable in taking into account the real length of the streets. Even though

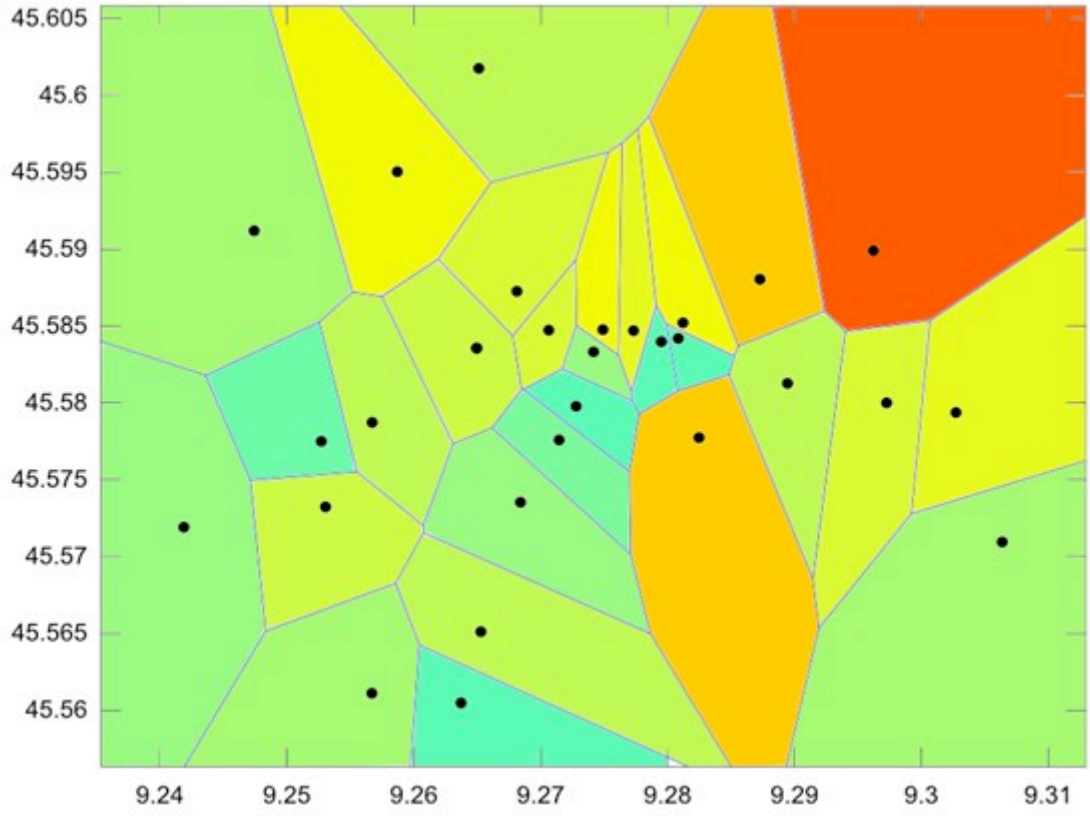
this metric was very useful, they were obliged to discard it because it could not be applied without complicated approximation to a city like Monza, which developed around a circular town centre maintaining an annular structure. Therefore, they decided to use the Euclidean metric, since nearly all roads have a radial pattern from the center: move away in a straight line, roughly outlining the circumferences.
In the simulations, the students used the partition of the plan known as *Voronoi diagram system* in order to divide the city of Monza in regions consisting of all and only the closest points to a given chemist (Aurenhammer, 1991).
Then they evaluated the average number of customers of each service.
The result of the processing with the computer is represented by three maps that show the extension of the basins of attraction of each chemist and the share of the population through color gradient that goes gradually from dark blue to green and finally to bright red.
They considered faults in the network according to two factors: uniformity and tendency to red. The dramatic difference in colour between two contiguous regions means an uneven distribution of the customers and the colour is so much warmer as the chemist is crowded.
The first map is the result obtained by the inclusion in the Voronoi diagram of all thirty-seven pharmacies of the city. We can note that many stores abound in customers: dark blue prevails in the centre, light blue in the suburban areas and green in all the remaining regions. Only the areas in the uptown have been coloured in yellow and orange. [Figure 7]

Figure 7: 37 chemists



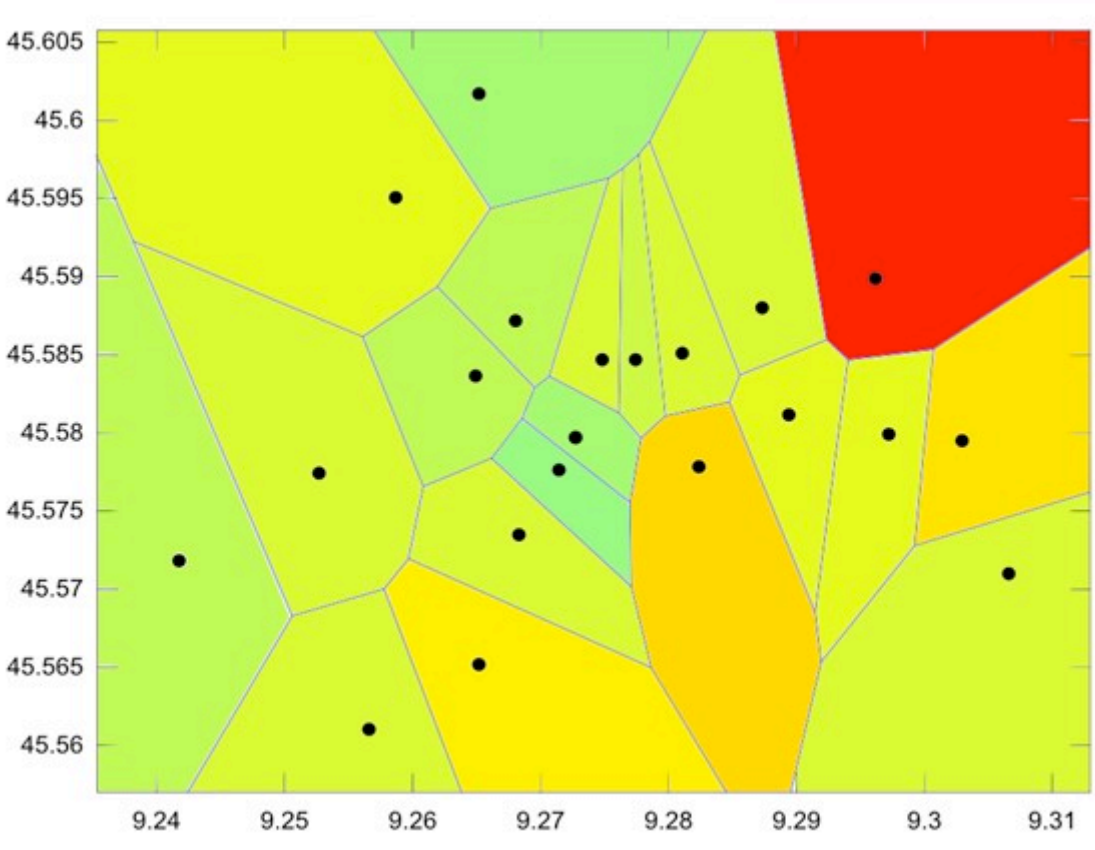
The second and thirty map represents the simulations that the students carried out taking into account respectively twenty-nine and then twenty-one chemists as generators points, in order to see in which way would probably change the situation for the chemists, if suddenly some exercises were to shut.
In the second map, we can see that the colours reached a warmer hue and Voronoi regions have further enlarged due to the closure of some chemists and to the increase in the number of customers. [Figure 8]

Figure 8: 29 chemists



In the third map, we can note that the regions reached the uniform colouring, thus the customers' distribution is the most homogeneous and rational. In this simulation only the region in the northeast part of the city is extremely overload, as its intense red shows. [Figure 9]

Figure 9: 21 chemists



First, the students used the Fortune Algorithm for the simulation, then they decided to implement a new programme capable of doing the simulation loading the data from an external file; with this software, they could introduce weighted Voronoi diagrams, take into account the road network and automatically create the colours of the regions with higher precision.
Thanks to its simplicity and extreme versatility, this project can be applied to many different fields in which a rational exploitation of the land and its resources is necessary to grant an ordered and sustainable development to a constantly growing society.
This work achieved the third prize in the European Union Contest for Young Scientists (Lisbon 2010).

CONCLUSIONS

The conventional belief has always been that students interested in scientific thought should develop strong math skills. However, it might actually be the other way around. Teachers think that activities in art or in history of science can help students build math skills and make math learning more fun.
FDS give both projects to enhance the mathematical knowledge and projects to build a solid math foundation. Here we have presented examples of the first type of projects, but anyway the aim of our works is to help students visualize the mathematical abstract concepts and its contributions to the cultural heritage.

REFERENCES

Angelini, A., Magnaghi-Delfino, P., Norando, T.; (2014) *Galileo Galilei's Location, Shape and Size of Dante's Inferno: an artistic and educational project*. Bratislava: Aplimat 7-26
Aurenhammer, F.; (1991) *Voronoi Diagrams - A Survey of a Fundamental Geometrie Data Structure.* ACM Computing Surveys, 23(3) 345-405
Aurenhammer, F., Klein, R.; (2000) *Voronoi Diagrams.* Amsterdam. Handbook of Computational Geometry, 23(3) 201-290
Benivieni, G., (1897) *Dialogo di Antonio Manetti cittadino fiorentino circa al sito, forma et misure dello Inferno di Dante Alighieri***.** Città di Castello, Lapi
Berry, M.V., Geim, A.K.; (1997) *On flying frog and Levitrons*. European Journal of Physics 307-313

Dreyer, L.E.; (2016) *A History of Astronomy from Thales to Kepler*. 2nd edition. Dover Publications. [On-line] Available: https://archive.org/details/AHistoryOfAstronomyFromThalesToKepler
De Berg, M., van Kreveld, M., Overmars,M., Schwarzkopf, O.; (2000) *Computational Geometry.* Springer 151-160
Duhem, P. ; (1954) *Le système du monde: histoire des doctrines cosmologiques de Platon à Copernic*. (I and II), Hermann
Fortune, S.; (1986) *A sweepline algorithm for Voronoi diagrams*. Proceedings of the Second Annual Symposium on Computational Geometry. ACM 313-322
Galilei, G.; (1589) *Due lezioni all'Accademia fiorentina circa la figura, sito e grandezza dell'Inferno di Dante*. Biblioteca Nazionale Centrale di Firenze, Ms. Rinuccini XXI,19
Gilbert, W.; (1991) *De Magnete*. New York: Dover Publications
Koestler, K.; (1959) *The Sleepwalkers* . U.K: Hutchinson
Kuhn, T.S.; (1957) *The Copernican Revolution: Planetary Astronomy in the Development of Western Thought*. Cambridge: Harvard University Press
Longfellow, H.W.; (1867) *The Divine Comedy/Inferno.* [On-line] Available: https://en.wikisource.org/wiki/The_Divine_Comedy/Inferno
Merton, R.C.; (1966) *The "motionless" motion of Swift's flying island*. Journal of the History of Ideas, 27 (2) 275-277
Nicolson, M., Mohler, N.M.; (1937) *The Scientific Background of Swift's Voyage to Laputa*. Annals of Science, 2 (299-334)
Peterson, M.A.; (2002) *Galileo's Discovery of Scaling Laws*. Am. J. Phys. 70 (575)
Peterson, M.A., (2016) *Two Lectures to the Florentine Academy On the Shape, Location and Size of Dante's Inferno by Galileo Galilei,1588.* [On-line] Available: https://www.mtholyoke.edu/courses/mpeterso/galileo/inferno.html
Pratesi, R.; (2011) , *Galileo Galilei Due lezioni all'Accademia fiorentina circa la figura, sito e grandezza dell'Inferno di Dante.* Livorno: Sillabe
Swift, J.; (2005) G*ulliver's Travels.* Oxford: Oxford University Press
Tannery, P. ; (1976). *Recherches sur l'histoire de l'astronomie ancienne*. New York: Arno Press
Wong, K.,. Müller, H.; (2016*) An Efficient Implementation of Fortune's Plane-Sweep Algorithm for Voronoi Diagrams.* Department of Computer Science, University of Victoria. [On-line] Available: http://www.cs.ualberta.ca/~kenw/papers/tess.pdf

IMPLEMENTATION OF AUGMENTED REALITY ON CHEMISTRY EDUCATION

Bilal ÖZÇAKIR
Ahi Evran University
TURKEY
bilal.ozcakir@ahievran.edu.tr

Erhan GÜNEŞ
Ahi Evran University
TURKEY
guneserhan@gmail.com

Erol ÇİTCİ
Ahi Evran University
TURKEY
ecitci@ahievran.edu.tr

ABSTRACT
Augmented reality allows students to explore learning contents with virtual objects by superimposing these virtual objects on physical environment surrounding them. In other words, augmented reality provides concurrent connections between virtual media and real world. In educational environment, it is hard to visualize some phenomena. Augmented reality helps students investigate phenomena that are too small or too large to see with naked eyes. Since it is impossible to visualize and investigate such phenomena in classroom environment, applications or interfaces designed using augmented reality come into prominence as a solution to this problem. In this paper, the design and development of an augmented learning material for teaching elements and compounds concepts of chemistry were discussed. This material included some basic elements and compounds with animated models and tangible interactions. This augmented learning material was used by preservice elementary science and computer education and instructional technologies teachers through augmented reality glasses. According to feedbacks of these participants, they found augmented reality very useful especially in teaching elements and compounds concepts in interactive and animated way. They stated that augmented reality can enrich textbooks drawings to an interactive level since textbook drawings about these concepts cannot show all necessary information such as orbits of electrons, and augmented reality can provide easy and long-lasting learnings. Consequently, since, this technology may help visualize objects mentally, AR interfaces also have potential to be useful for spatial ability of preservice teachers. Hence, relationship between AR and spatial ability should be studied in deeper way.
KEYWORDS: Augmented Reality, Chemistry, Elementary Science Education

ACKNOWLEDGEMENT
This paper was supported by the Ahi Evran University Scientific Research Projects Coordination Unit. Project Number:PYO-EGF.4001.15.006.

IMPROVING HERITAGE AWARENESS THROUGHOUT ARCHITECTURAL EDUCATION IN DESIGN STUDIOS

Gözde Kırlı ÖZER
Uludag University, Faculty of Architecture, Department of Architecture
Turkey

Rengin Beceren ÖZTÜRK
Uludag University, Faculty of Architecture, Department of Architecture
Turkey

Arzu ÇAHANTIMUR
Uludag University, Faculty of Architecture, Department of Architecture
Turkey

ABSTRACT

In architectural education one of the main topics is to make the students understand the necessity of physical and socio-cultural factors and the relationship between them for architectural and urban design. Gaining the ability of using relationships of physical and socio-cultural environment factors in design process has a vital importance for architecture students. In order to be successful in their professional career they should learn to handle the architectural and urban design problems in a holistic and integrative approach. For this aim, topics about heritage conservation and management are used throughout architectural studios as a tool. Especially in countries like Turkey, which has a rich and valuable cultural and historical heritage this topic gains more importance in architectural education. In this study, an undergraduate architectural studio process that has the aim of making students conscious about the importance of heritage values for the development of settlements is presented. Throughout this studio experience the consciousness level of the third grade undergraduate architectural students is evaluated. The interviews made by the students and their visual presentations including cognition maps are used for the evaluation. The possible educational strategies for increasing their level of awareness about heritage conservation are discussed as a conclusion.

INTRODUCTION: ARCHITECTURAL DESIGN STUDIO AND HERITAGE AWARENESS

As stated in UNESCO reports, the cultural heritage is linked to the lives of communities and is fully integrated into social, economic and environmental processes, making it an integral part of people's daily experience. Thus, any effort aimed at protecting the environment and improving the social and economic wellbeing of communities needs to consider the cultural heritage (Unesco, 2013). The positive impacts of these efforts may offer some opportunities whereas negative impacts may cause some threads. Understanding the identification of cultural values and assessment of the significance of these values have great importance in heritage conservation studies.

On the other hand, architecture is the main profession that has been not only creating heritage values for centuries, but also in some cases causes demolition of them. The masterpieces of mankind are architectural monuments and they can also be conserved by architectural practices. Every architect should be aware of this significant responsibility and try his best in order to safeguard the world's heritage values. At this point the important role of architectural education should be stressed. The UNESCO-UIA (International Union of Architects) charter on architectural education explains the main aims of architectural education. These are; *to produce competent, creative, critically minded and ethical professionals* and *to produce good world citizens who are intellectually mature, ecologically sensitive and socially responsible designers and builders (UIA,2002).* UIA(2008) also defines architecture as a creative intellectual task of research and design that draws on humanity, culture, nature and society. These definitions explain the notion of architecture and architects and its vitality for heritage conservation clearly.

It is a common acceptance that architectural design studio is the core of architectural education. Architectural design studios constitute the basis of this education where theoretical knowledge and

designing skills penetrate each other. The students begin to feel and act like an architect throughout this designing experience and develop their ability of holistic and also problem solving thought. Shon (1985), stated that the central pedagogic vehicle for architectural education is project-based learning. Students are expected to offer architectural design proposals for a given problem and program. However, there is no one correct form of this design project. Rather the works of the students are unique and individualistic, but they should meet the requirements of the given architectural program and should offer a sufficient solution for every actor included in the given problem.

In the light of these, the study presents an architectural studio experience of 3rd. grade undergraduate students of architecture at Uludag University, Faculty of Architecture. In the following sections, after explaining the aims, inclusive and development stages of the studio process, some examples of student projects are presented. The students' proposals to solve the problems of such valuable heritage sites and the change in their degree of heritage awareness are discussed as a conclusion.

'DESIGN FOR WORSHIP' ARCHITECTURAL PROJECT

The Republic of Türkiye is situated on a transition point between Asia and Europe, which make the country both multi-cultural and multi-religious and for centuries different civilizations built cities and exterminated others to survive in this geography and this settlements and exterminations made the country archaeologically and culturally multi-layered. As being a multi-cultural, multi-religious and multi-layered living organism, Turkey makes architects very hard to design and build new settlements in. And basically forced to be a part of the historical cities as an infill.

The 'Design for Worship' project is built on the idea of ; nevertheless religion being objectively different for every person, religious worshiping shows slight differences between different religions. In the context of this project design of sanctuaries for a minimum of three different religions that still have communities in the country (İslam, Judaism and Christianity) was an obligation. Also architectural design of supportive spaces such as library, community center, residents for ecclesiastics, city park, etc. to compose a cultural complex was a necessity. The project was expected to be designed with an infill approach, which is a must for architects living and working in multi-layered cities and countries.

The aims of this project for participators are (1) to understand the necessity of physical and socio-cultural factors and the relationship between them for architectural and urban design (2) to gain the ability of using relationships of physical and socio-cultural environment factors in design process (3) learn to handle the architectural and urban design problems in a holistic and integrative approach (4) to gain consciousness about the importance of heritage values for development of the presented settlements (5) to earn the ability to design sensitively for a historical city.

The studio took place in 2015-2016 spring term Architectural Project 5, class of 3rd graders. The Studio lasted for 14 weeks with the participation of 40 students and 3 moderators.

As study areas; Tirilye and İznik counties were chosen to be infilled for them being culturally, historically multi-layered settlements and close to the city of Bursa where architectural studio participators study and live. Both of the study areas have histories dated back to the Hellenistic period and contain archaeological ruins to be protected and also have a living city interwoven.

Figure 1. The relationship between Bursa City Centre-Tirilye-İznik Historic Towns

Figure 2. Aerial Photo of Tirilye

Figure 3. Aerial Photo of İznik

In the following, the three main stages of the development process of the architectural studio is explained in detail.

Stage 1. Explaining the Theme, Field Search & Modeling

At the beginning of the studio, participators were enlightened about the project theme, workload distribution throughout 14 weeks of study, the expectations and the evaluation criteria of the moderators, which are based on the curriculum and Bologna credit system were stated. Participators were also given a booklet containing studio schedule and advised readings to be helpful for their design process such as; '*A Report on Protecting Historical Development, Monuments of Nicaea.* Kuban', '*Searching of the concept in Tirilye; an architectural design studio.* Sağdıç', '*City image, City Gate; Urban Identity; Shore and Definitions about shore.* Ersoy.'.

After explaining the theme, participators were asked to overview the project areas by analyzing via physical and socio-cultural researches (observations, surveys, field identification studies, etc.) through out their field trips to both Tirilye and İznik. They, as the groups of four, prepared a digital presentation to explain the findings of the researches they undertook and express their ideas about the areas.

At the second course, the groups made presentations to all students and moderators and the whole group discussed the findings and identified urgent needs of the areas. The students were asked to prefer one of the study areas in order to handle the design process. At the beginning of this process as a second step after the field studies they

were asked to build a 1:1000 scaled model of both of the areas to understand the topography, green and built-up area with all of its components.

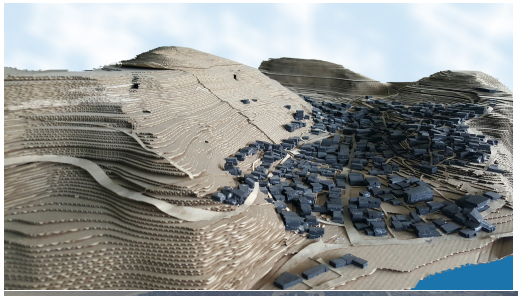


Figure 4. 1:1000 Scaled Tirilye Model

Figure 5. 1:1000 Scaled İznik Model

Stage 2. Cognitive Mapping

At the second week of the studio the participants were asked to draw a map, containing the buildings and other components (green areas, people, patterns….etc.) they remember, on a blank sheet. Blank sheet provided a scale free platform to figure the components in the scale of importance they perceived. The aim of the cognitive mapping

is to make students realize what they found important about these settlements except from the other sanctuaries, which will give them guidance for design.

Figure 6. Cognitive Map by Participator 1 | İZNİK

Participator drew and colorized two main roads, historic city walls partially and İznik Lake as boarders also drew Ayasophia Mosque (Hagia Sophia Church) as a landmark.

Figure 7. Cognitive Map of Participator 2 | TİRİLYE

Participator drew Taş Mektep bold and as a landmark. He did not draw other significant buildings or monuments of the historic city, but he drew a dog nearly as big as Taş Mektep which can have many different meanings like he was attacked by a dog or he likes dogs and he remembers one significant …etc.

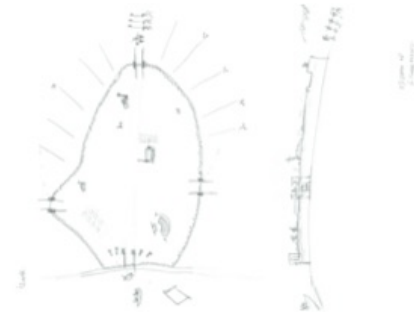


Figure 8. Cognitive Map of Participator 3| İZNİK

Participator had a different approach to city than the other participators, he drew a historical war image with horses and archers and added Ayasophia Mosque (Hagia Sophia Church), city walls, archaic theatre, the sunken basilica and all city gates including non existing Lake Gate.

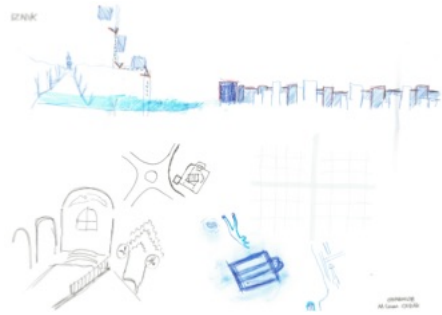


Figure 9. Cognitive Map of Participator 4| İZNİK

Participator did not actually draw a map, his drawing mostly composed of sections and detail drawings of both the city and Ayasophia Mosque (Hagia Sophia Church) and the only part he drew as a map is the same mosque (church). Another remarkable detail in the drawing is that he drew the sunken basilica as a picture with a man (can be imaginary of himself) diving to discover.

Stage 3. Architectural design studio

Studio took place 2 days a week and during studio time moderators and participants were divided into two equal groups consisted of 20 students each with mixed study areas. Every student had a chance to show and explain their ideas to the moderators who acted not as a commentator but a guide helping the participants to find their own deficiencies and fulfill them. Three juries took place during 14 weeks of study, during juries not only moderators but also the students spoke their minds about the project presented to improve.

Evaluation criteria can be listed under two main headings as subjective and objective. Subjective criteria include the answers of the questions as follows; does the project include an integrative and holistic approach?
Is the project proposed able to protect the unique image of the settlement together with providing it to be used in a sufficient way today? Does the project propose suitable architectural and urban design solutions for the determined problems via field analysis? Do the architectural solutions and details offer livable and sustainable

places? Objective criteria include the two-dimensional and three-dimensional presentation techniques of the project and quality of the presentation.

SOME EXAMPLE PROJECTS

Figure 10-11. Participator 1 | Final İZNİK Posters

Participator's aim was to reunite three religions in a common place; heaven. Because heaven also means garden in Turkish language she decided to design a common garden which all three sanctuaries can use as a recreation area. She also aimed to have a relaion with the lake because of the sacred meaning of water for all religions. The relation she described is aspired to give a new usage to the lake shore which is being used effetely.

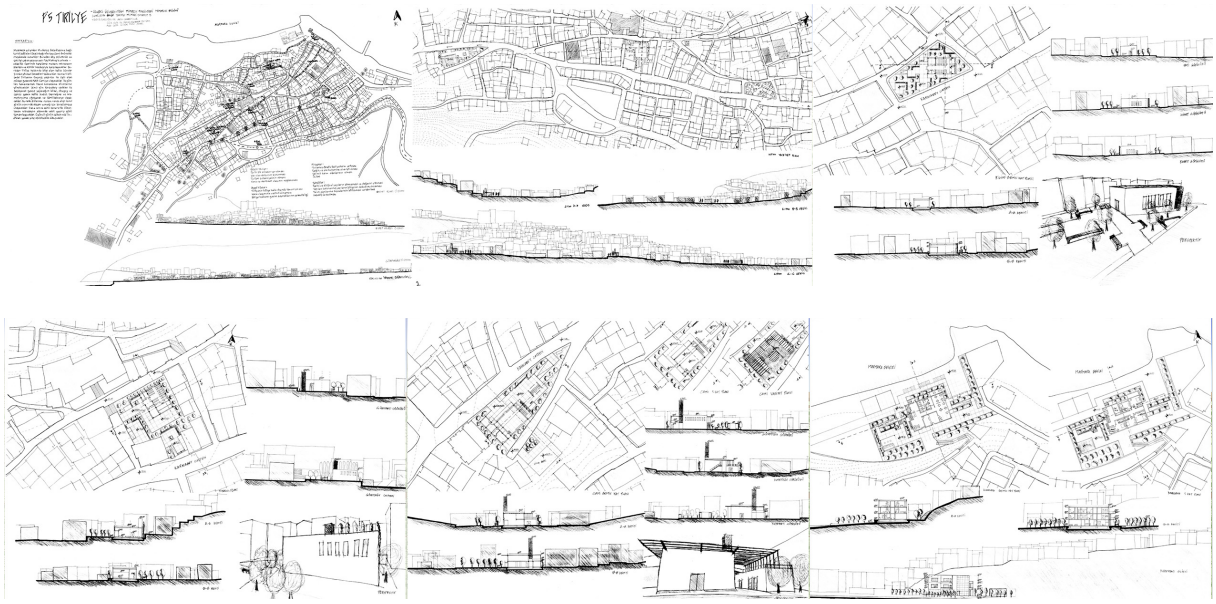


Figure 12-13. Participator 2 | Final TİRİLYE Posters

Main axis of the historic city is the commonly used and well known axis located at the ground level of the valley but there is another axis -Karacabey road- which lost its importance but consists of important monuments and historic buildings. Participator aimed to exhilarate Karacabey axis and balance the importance of two axles by infilling new social and spiritual functions along it. Another problem aroused interest of the participator is the community beach being used rarely by the local people and to solve this problem he placed residential buildings around to help resurrect.

Figure 14-15. Participator 3 | Final İZNİK Posters

Participator's aim was to bring three different religions together around a yard. He also spotted the absence of entertainment venues, sports halls and arenas, and shopping places and residential areas for tourists and considering these needs he suggested to design a complex situated at different places among the main axis to revitalize this axis.

Figure 16. Participator 4 | Final İZNİK Posters

Participator spotted that the city is divided to 4 pieces because of the 2 concurrent axles. 2 pieces between İstanbul Gate and Ayasophia Mosque (Hagia Sophia Church) are observed to contain most of the historical ruins of the city and the other two pieces to contain recent residental areas. He decided to settle in the residental areas to avoid damaging historical ruins and to exhilarate the shore. Participator also chose to settle close to the Lake Gate to correlate sanctuaries with water which is sacred for all three religions.

CONCLUSION

The presented architectural studio experience shows again, that in order to promote students' awareness of the heritage significance and conserving and revitalizing its values, the design studio courses are very important tools. Working in a historical environment is an enriching experience, which not only combines the creative aspects of architectural design with in-depth research to understand the existing environment and its context, but also a great training to improve the design of new buildings in a valuable built environment. At the end of the 14 weeks course time, it is monitored that the students understanding about social significance of historic buildings progressed. They gained the ability of analyzing the existing situation of the built environment together with the historic development process of the city and consider it as a cultural heritage where necessary.

Revitalization of historic environments including adaptive reuse proposals is a special and important area of architectural work, which requires specialist training and knowledge to deal with its multidisciplinary and interdisciplinary nature. And this architectural studio provided the students to experience such a complicated work including many kinds of difficulties. First of all they tried to learn the physical and socio-cultural characteristics of the settlements and drew their own cognitive maps of these study areas. They developed some architectural and urban proposals in order to revitalize the selected historical settlements with different scenarios that include physical and socio-cultural solution alternatives. Then they developed the architectural projects of the proposed buildings in their scenarios. At the end of the process they drew their cognitive maps again and saw that they are more aware of the environment and its heritage values.

On the other hand, the moderators of the architectural studio think that these proposals and the projects could put a light on the way of local authorities for the conservation and revitalization studies of these historic settlements. Iznik, experiencing the Unesco World Heritage Site membership preparation process and Tirilye, still having too many visitors from Greece because of being their former homeland, should be livable and sustainable settlements in order to survive. Both of them could benefit from these fresh ideas and projects, all of which include public and semi-public, open and semi-open places that enable the inhabitants to improve their social life.

REFERENCES

Schon,D.,(1985),The design studio: an exploration of its traditions and potentials, RIBA Pb. London, from Roberts (2006), "Cognitive styles and student progression in architectural design education" , Design Studies, Volume 27,ıssue 2,167-181.

UIA, 2002, *UIA And Architectural Education, Reflections and Recommendations*, Document prepared by the UIA Architectural Education Commission, Text adopted by the XXIIth UIA General Assembly (Berlin: July 2002), p. 1111, taken from Srinivasan, B., et.al.,(2011), " Application of Kolb's experiental learning theory to teaching architectural design principles" in Design Principles and Practices: An International Journal Volume 5, Number 3, 2011, http://www.Design-Journal.com, ISSN 1833-1874.

UIA (2008). International union of architects (Ed.2) Built Environment Education Guidelines., taken from Danacı,H.M.,(2015), "Aesthetics in Cultural Landscape and architectural Education" Procedia-Social and Behavioral Sciences 191 (2015) 190-195

UNESCO 2013 Annual Report from; http://unesdoc.unesco.org/images/0022/002271/227146e.pdf

IN-SERVICE SCIENCE TEACHER EDUCATION IN PORTUGAL: AN ANALYSIS OF THE SHORT COURSES AVAILABLE

Luís DOURADO
Research Centre in Education, Institute of Education
University of Minho, Portugal
ldourado@ie.uminho.pt

Laurinda LEITE
Research Centre in Education, Institute of Education
University of Minho, Portugal
lleite@ie.uminho.pt

Sofia MORGADO
Research Centre in Education, Institute of Education
University of Minho, Portugal
sofiamorgado@ie.uminho.pt

ABSTRACT
Although teaching-related relevant competences development starts during pre-service teacher education programmes, teachers' professional knowledge has to be further developed through in-service training. In-service training should lead teachers to develop and update the knowledge base acquired during initial teacher education and to fulfil their professional needs. In Portugal, in-service training courses are organized by diverse institutions, being the most common higher education institutions and school network training centres. This raises questions about the consistency between science teachers' needs and the in-service training courses offered to them, as well as between the in-service courses and the recent science education research agenda. Courses organized by higher education institutions and school networks from the north of Portugal, accredited by the national agency and available from its webpage, were analysed. Results indicate that in-service training courses focus on diverse teacher education components but they tend to concentrate on general issues. However, it may be hard for science teachers to find in-service training in some subjects and/or issues. These results may motivate a follow up investigation on whether or not those in-service courses fit science teachers' educational needs so that teacher educators can find ways to better make their actions fit teachers' own training needs.

INTRODUCTION

The demands of the teaching profession

Teaching is a complex and demanding task (Dillon & Maguire, 2007; Berry & Loughran, 2012; Wallace & Loughran, 2012; Lederman & Lederman, 2015; Schneider, 2015) as teachers have to play many different roles in school and especially in the classroom (Schneider, 2015). As a matter of fact, Harrison and Killion (2007) argued that a teacher has to be: resource provider; instructional specialist; curriculum specialist; classroom supporter; learning facilitator; mentor; school leader; data coach; catalyst for change; and learner. On one hand, a teacher that is able to play this huge variety of roles is a teacher that acts as a full member of an institution, fosters students' scientifically accurate and methodologically appropriate learning, and promotes his/her own training. The latter is needed for the teacher to keep acquainted with the scientific and technological developments and to fulfil his/her perceived pedagogical practice needs (Ponte, 2006; OECD, 2014a). It is also a teacher that creates learning situations that enables students to develop competences to learn how to learn and to act as informed, responsible and active citizens (Snoek & Zogla, 2009; OECD, 2014a). Besides, it is a teacher that possesses a large body of multidisciplinary knowledge and skills (Ponte, 2006; Snoek & Zogla, 2009; OECD, 2014a) and that feels motivation and enjoyment towards the profession (Blonder, Benny, & Jones, 2014; Kazempour & Sadler, 2015). As Hargreaves (1998) has stated:

> "Good teaching is charged with positive emotion. It is not just a matter of knowing one's subject, being efficient, having the correct competencies, or learning all the right techniques. Good teachers are passionate beings who connect with their students and fill their work and their classes with pleasure, creativity and joy." (p.835).

This is one of the reasons why novice teachers must be supported to develop an awareness of the ways in which emotions influence and shape their work as science teachers (Saka, Southerland, Kittleson, & Hutner, 2013) so that throughout their careers they can fight for their pedagogical goals specially in conflicting settings that are very

common within nowadays accountability driven contexts. Hence, opposite to what some people may think, initial teacher education (ITE) cannot concentrate on subject matter knowledge only (Leite, 2005; Frost, 2010; Eurydice, 2011). Rather, it should lead teachers to acquire multidisciplinary knowledge and to develop competences useful for them to deal with a variety of problem-situation that they may face in their future career (Frost, 2010; Schneider, 2015). Day and Sachs (2004) reinforce this idea when they state that

> "[…] higher quality teaching demands teachers who are well qualified, highly motivated, knowledgeable and skilful, not only at the point of entry into teaching but also throughout their careers." (p.3&4).

If it is acknowledged that "Teachers learn as students learn and students learn as teachers learn" (Wallace & Loughran, 2012, p.295), then the way ITE is carried out becomes a key element for educational success (Rebmann, Schloemer, Berding, Luttenberger, & Paechter 2015). This may be the reason why several researchers have advocated that teacher education should take place in constructivist and diversified environments (Leite, 2005; Wallace & Loughran, 2012), promote teachers' reflection on his/her own learning (Snoeck & Sogla, 2009; NRC, 2010; Rebmann, Schloemer, Berding, Luttenberger, & Paechter, 2015), make them able to critically analyse curriculum innovations and methodologies (Bell, 2005; Leite, 2005; Rebmann, Schloemer, Berding, Luttenberger, & Paechter, 2015) and to resist to the possible mismatches between knowledge conveyed to them during ITE programs and their school counterparts' attitudes and beliefs (Saka, Southerland, Kittleson, & Hutner, 2013).

The newly formed teachers are asked to transfer their initial knowledge base to their new work context, often without any support. Successful knowledge transfer would be possible only if ITE was able to reduce the gap between the theoretical and the practical components of teacher training, to make it easier for novice teachers to cope with the diverse demands that they have to face at once. Otherwise, as Stenberg, Karlsson, Pitkaniemi, and Maaranen (2014) found out, they will concentrate on the didactical issues and neglect the contextual (about school and society, and matters related to content, such as the curriculum) ones.

Anyway, ITE should not be expected to be enough for the newly formed teachers to be able to appropriately deal with the diversity of ever changing problem-situations along their lifespan (Ponte, 2006). In fact, continuous training will be needed (Marcelo, 2009). To be successful, in-service training should be guided by experts or critical colleagues whose mission would be to help teachers to continuously develop as persons, as members of society and as professionals (Bell, 2005) and improve their ways of teaching, interacting with students and engaging into the educational community (Zeichner, 2010; Hénard & Roseveare, 2012).

Science teachers' knowledge and skills

At a first glance, teaching science may seem similar to the teaching of any other subject and the science teachers' knowledge base may be seen as to differ from the knowledge base of other teachers on the subject content knowledge only (Sickel, Banilower, Carlson, & van Driel, 2015). However, teaching science has to take into account the nature of the discipline and the characteristics of the content to be taught (Wallace, 2014) which prospective teachers may not be aware of due to their experiences as learners with science teaching practices that "often carry 'a heavy reliance on didactic teaching styles' and a 'cookbook' approach to investigative work" (Berry & Loughran, 2012, p.401). Besides, as teachers' ideas about science interfere not only with what they teach about science but also with the way they teach it (Wallace, 2014: Anderson, 2015; Henze & van Driel, 2015), Bianchini (2012) argues that science teacher education should convey to the newly formed teachers appropriate ideas about science and scientists' work so that they may convey an updated image of science to their students as well.

In addition, teachers' beliefs about the best ways of teaching science, and their experiences as science learners may inform the ways they teach science (Mansour, 2009; OECD, 2014a). Therefore, in-service teacher education should provide an opportunity for teachers to think about what they do and the way they do it and to find out about the best ways to proceed in order to foster students' learning.

Research has shown that teachers trained under an inquiry learning model may be more likely to adopt more constructivist, student centred forms of learning than if they were trained under a teacher centred approach (OECD, 2014b). These results are consistent with and reinforce the idea that successful teaching depends on the quality of the interaction between teachers and students (Wallace, 2014) and may inform methodological choices in the in-service training context. Besides, different students have different preferred learning styles (Pritchard, 2009; Mestre, 2012; Yassin & Almasri, 2015) and these may depend on the subject content area. This means that in-service teacher education should convey teachers a range of teaching approaches and skills so that at each occasion they can choose the one that best fits their teaching style, and their students' preferred learning styles, conveys an appropriate image of science and facilitates students' science learning.

According to Frost (2010), science teachers need to hold a variety of types of knowledge (including content knowledge, epistemological knowledge, knowledge of teaching and assessment strategies, curriculum knowledge and knowledge about students' learning in science) and to develop a range of attitudes (including attitudes towards science and towards teacher's own professional development) in order to put into practice a science teaching that is consistent with the commonly agreed values and aims of education and the specific goals of science education. Gil-Pérez (1991) also has acknowledged the relevance of these types of knowledge and attitudes but he emphasized the role of research and innovation, placing them at the centre of all the types of knowledge and competences that science teachers should held. He also emphasized teachers' critical awareness towards teachers' spontaneous thinking and towards the usual teaching approaches. In fact, research is the basis for informed pedagogical innovation (Davies, 1999) and the latter requires critical analysis of traditional ways of thinking and doing, so that teaching can be both more effective and motivating, and that learning can be less painful and more meaningful for the learners.

On their analysis of teachers' required types of knowledge, Frost (2010) and Gil-Pérez (1991) focused mainly on the classroom, and did not make it explicit knowledge or abilities required to deal with students that differ from the mainstream. Bianchini (2012) has added that science teachers need to both become aware of the requirements of a curriculum for students with special educational needs and to find the best ways to help these students to make sense of the world.

To help in-service teachers to develop approaches to science teaching that effectively challenge taken-for-granted models and beliefs is a big challenge for teacher educators. As Berry and Loughran (2012) have put it,

> "developing a pedagogy of science teacher education requires educators to be awake to, and aware of, the complex and problematic nature of science and of teaching, as well as having a preparedness to create and engage in experiences that enable genuine learning to take place for all participants in the learning to teach process." (p.413).

Each single teacher should be expected neither to hold all this variety of types of knowledge and skills nor to be able to cope with all the challenging situations a school can offer to teachers. Rather, he/she should be expected to have a basis for professional and personal growth which Hargreaves (1998) conceptualizes as being tied up with the quality, range and flexibility of teachers' classroom work. Therefore, in-service teacher education institutions should do their best in order to promote in-service science teacher education. To achieve this goal, "they must recruit and support teacher educators who have a broad mandate, an expansive world-view, a collaborative approach, and the skills to enact a rich curriculum." (Goodwin & Kosnik, 2013, p.343). The point is that teacher educators become so without taking any training program (Bayrakci, 2009). In addition, there is a variety of profiles of teacher educators (OECD, 2013), ranging from university qualified staff on science education, science or general education to school teachers with a variety of expertise and teaching experience.

Thus, at least four related questions can be raised. First of all, how should in-service teacher educators be prepared and supported to play their role and to do it well? Goodwin and Kosnik (2013) stated that this question cannot yet be answered because the profession has not yet agreed on that teacher educators need formal preparation. Secondly, is there a profile of in-service teacher educator? Traditionally, teacher training has used to be done at higher education institutions (OECD, 2013), which have specialized staff in several areas from content knowledge to general education passing by pedagogical content knowledge and teaching practice. However, some teachers were used to argue that teacher educators from higher education institutions are away from school real life and cannot provide useful in-service training. They would try to fulfil the needs they perception in teachers that act in a school imagined context instead of fulfilling teachers' own (felt) needs in a real context. Hence, recently, there has been an increasing tendency for advocating school-based teacher education done by peers. The argument draws on the idea that peer-tutors can provide school contextualized teacher education that may focus on teachers real (felt) contextual needs and that fit the school real conditions (Hénard & Roseveare, 2012). However, a third question can be asked: as peer tutors are teachers that belong to the same school and are not systematically engaged in research, how can they be aware of new issues that emerge from scientific and educational research and promote educational change? As no one feel the need of what he/she does not know, this would point towards training be done by school-based teacher educators and also by higher education institutions staff. Still, a final question should be raised: is the profile of a teacher educator independent of the subject he/she trains teacher for? It can be argued that even though some dimensions that teachers need to develop are subject independent, other and probably the most important, depend on the subject that is on the content knowledge that they teach. In fact, some of the types of teachers' professional knowledge are specific of a science teacher and would not apply to a language or even a maths teacher.

Teachers' professionalization and professional development: the case of Portugal

As any other professional, a teacher should have an organized body of knowledge that is specific of the teaching profession and of the subject he/she teaches. The specific features of this body of knowledge are what separate teachers from other professionals. To acquire the necessary and varied knowledge-base and to develop the relevant competences to teach in educational changing contexts, those that intend to become teachers need a formal period of preparation to enter the profession, even though they should engage into continuous growth and development actions afterwards (Eurydice, 2015; Ogunniyi & Rollnick, 2015; Schneider, 2015; Treagust, Won, Petersen, & Wynne, 2015). It can be argued that to do ITE is far more than to provide a teaching qualification; it is about forming teaching professionals (Snoek & Zogla, 2009; Lederman & Lederman, 2015), able to not only play a diversity of roles, but also play them well with students holding a wide range of needs and abilities, in a variety of work contexts (Ogunniyi & Rollnick, 2015; Schneider, 2015). However, in contemporary changing societies, societal expectations on teachers are ever changing, and so are the demands on the teaching profession. Therefore, teachers need to be not only professionals but also "proactive in order to respond adequately to the ambiguity, uncertainty and increasing complexity which characterize the educational settings in which they are expected to operate." (Hilton, Flores, & Niklasson, 2013, p.434).

Thus, educating professional teachers is much more than conveying knowledge to prospective teachers; it is about helping teachers to find the best fit among factors that, according to Murray (2014) interact to influence teachers' professionalism: their individual biography, their institutional setting, and the national context. Based on Korthagen's (2010) ideas for ITE, it can be argued for an in-service teacher education model that blends together theory and practice and that acknowledges teachers' previous experiences so that professional learning becomes a bottom-up process taking place in the individual teacher and building from his/her experiences in order to lead to fruitful knowledge development about teaching.

European countries as well as countries in other continents face a common challenge: train effective teachers for the 21st century students' needs (Musset, 2010; Eurydice, 2011; OECD, 2014a). Within the scope of the Bologna process, European member states agreed on a common credit transfer system as well as on a cycles-based structure of higher education. However, they seem to have failed to reach a common framework for ITE (Snoek & Zogla, 2009; Castro, 2015; Lederman & Lederman, 2015) and to agree on a minimum level of qualification (Eurydice, 2015), even though they seem to be aware of the common challenges that teacher education has to face and overcome. Nevertheless, they also failed to design a teacher general profile as well as a subject teacher specific profile. The point is that Member States are different in terms of political orientation and teacher education is very sensitive to politics (Goodwin & Kosnik, 2013) as most governments dictate the kind of teachers they want.

Thus, even though teaching is a universal profession, the teacher profile is heavily influenced by differences on the roles played by the government, the universities, the teachers, and the schools in the educational systems around the world (OECD, 2013). The work context dependency of teacher identity (Flores & Day, 2006; Luehmann, 2007), that is the way teachers see themselves as teachers, may make it hard for teacher education to overcome what Snoek and Zogla (2009) took as one of the most relevant challenges of teacher education - how to promote teachers' identities - as these exerts a meaningful effect on teachers' actions and engagement.

Arguments for in-service teacher education are often associated with curriculum reforms and they are based on the need to make teachers up to date with the newly advocated contents and methods. However, "in modern circumstances, an initial professional training is altogether inadequate for a career which can extend for forty years" (Coolahan, 2002, p26). This is especially true for teachers who seek to equip and motivate their pupils to be lifelong learners. This may explain why professional development for teachers is compulsory at every level in about three-quarters of OECD and partner countries and in some countries it required for promotion or salary increase (OECD, 2014a). In Portugal, the content of in-service training is specified collectively by the central education authorities, teachers' professional organisations, teachers' unions, universities and schools (OECD, 2014b). However, teachers can choose what in-service courses they will engage in given that they can gain a few general credits but that they should gain credits on specific area they teach.

There are several ways of organizing in-service teacher training and the Portuguese law acknowledges a variety of them. Findings from the 2013 teaching and learning international survey (TALIS) suggest that courses are the type of training in which teachers engage more often and that it is followed by conferences or seminars and by participation in teacher networks (OECD, 2014a).

The duration of in-service courses varies from long duration degree leading courses to short-term (being most of them of 25 hours long) or summer courses, or seminar/conference like courses (Coolahan, 2002; OECD, 2014a) and taking in-service courses is part of teachers' contractual obligations (OECD, 2014b), namely in Portugal (Law

22/2014, November 11). Whatever the way it is organized, in most countries, including Portugal, the design of in-service courses has been decentralized and therefore it can be done by the different types of training institution (OECD, 2014b) even though some of them offer more courses than others. However, educational authorities settled accreditation and evaluation systems in order to guaranty quality of the in-service training provided (Eurydice, 2011). Portugal has got both an accreditation system that analyses and eventually accredits the training courses and an evaluation system that audits samples of the training courses that are run. It is called the In-service Scientific and Pedagogic Council (Law 4635/2014, March 31).

Accreditation and evaluation of in-service training courses is guided by the Portuguese law which was first approved in 1992 and that has evolved since then in order to make it clearer the aims focus and types of in-service training courses to be provided to teachers (law 22/2014, November 11). This law states that in-service training should: fulfil the teachers training needs so that they can contribute to the development and improvement of the school educational and curricular project; to the improvement of teaching quality and learning results; teachers' professionals development so that they can give a contribution to the school results; to knowledge dissemination and capacity building so that school and school networks management and autonomy can be reinforced; share knowledge and skills towards teacher professional development. As far as the focus of the training courses is concerned, the Portuguese law states that they should concentrate on areas that coincide with the main teacher education components: content knowledge, pedagogic content knowledge; general education; teaching practice, cultural, social, and ethics knowledge.

In fact, research (Eurydice, 2015; Zhang, Parker, Koehler, & Eberhardt, 2015) has shown that teachers need development and training in some science topics as well as in multiple areas of pedagogical content knowledge. In-service teacher educators have a crucial role to play in meeting the professional learning needs of teachers of the future (OECD, 2013). Their role is very complex because, as O'Dwyer and Atlı (2015) concluded, they have to be more than simply effective teachers of teachers; they have to cater for affective needs, coach a broad range of clients, interpret contextual variables and provide appropriate feedback.

OBJECTIVES

In Portugal, courses specially designed for in-service teacher education purposes are organized by diverse institutions, being the most common higher education institutions (HEI) and school network training centres (SNTC). Most of the times, these institutions organize the courses, publicize them and teachers register in selected courses according to their interest or self-perceived needs. This raises questions about the consistency between teachers' needs and the in-service training courses offered to them, as well as between the in-service courses and the recent science education research agenda. Hence, this paper analysis in-service training courses targeted to science teachers or to teachers who teach science components in order to find out how they respond to these questions and to find out if the answers are the same for both training institutions.

THE STUDY

The open access website http://www.ccpfc.uminho.pt/ shows the in-service training courses accredited by the Portuguese in-service Scientific and Pedagogic Council, in the diverse subject areas and school levels. In March 2015 the website was accessed and the in-service training courses offered by the north of Portugal higher education institutions and school networks were identified. A total of 3106 courses were identified, being 430 offered by higher education institutions and 2776 offered by school networks. Afterwards, some of those courses were selected. They were courses targeted to:

- science teachers, focusing on science content knowledge themes or on science education themes;

- teachers of the diverse subjects, including science teachers. These courses focus on: general educational issues (e.g.: assessment, special education needs) that are relevant for teaching science; cultural, social and ethics themes; educational research issues; teaching practice issues.

The result of this selection was 1555 training courses offered by HEI (190) and by SNTC (1365). However, they include two types of in-service courses: courses specially designed for the purpose of in-service training; seminars/conferences accredited for in-service training purposes. An analysis of the data provided on the 1555 courses showed that 172 were of seminar/conference type. These courses were excluded as they are not specially designed for in-service training purposes. Therefore, 1383 short courses organized for the purpose of in-service training were selected to be analysed. They were offered by HEI (184) and by SNTC (1199). Table 1 synthesises and relates the number of training courses available with the number of in-service training courses analysed, per type of training intuition. It is worth noting that considering the proportion of courses offered by the two types of institutions is similar when the courses available and the courses analysed are considered. This means that the

proportion of courses offered to science all teachers by HEI and by SNTC compares to the one of offered to teachers of other subjects.

The title of the in-service course was content analysed in order to identify the teacher education component it focuses on. Afterwards, those focusing on: science content knowledge were content analysed in order to identify the science area they deal with; science education courses were content analysed in order to identify the science education themes they concentrate on; general education courses were content analysed in order to identify the education issues they deal with. The courses focussing on educational research, on cultural, social and ethics and on teaching practice were not further analysed because there were very few courses in each of these categories.

Table 1: In-service courses offered and analysed, by type of training institution

Type of training institution	Training courses on the website (n=3106)		In-service training courses analysed (n=1383)	
	f	%	f	%
Higher education institution	430	13,8	184	13,3
School networks training centre	2676	86,2	1199	86,7

FINDINGS

Table 2 shows that the majority of the in-service training courses analysed focus on general issues that are relevant to science teaching but do not have a science focus and do not include a science component. A comparison of HEI and SNTC with regard to these two types of training courses indicates that the percentage of training courses dealing with specific issues is larger in the former (38,0%) than it is in the latter (23,8%) type of institution. This difference seems to be mainly due to content knowledge courses (that is courses focusing on science themes) that are offered by HEI (14,1%), through science faculties or equivalent, and that can hardly be organized by SNTC. To offer an in-service training course, training institutions need to have accredited trainers, with an academic degree that is higher than the degree of the training teachers and with a specialization on the area they are to become teacher educators. Thus, it is much easier for universities to offer courses on science knowledge as they have got much more qualified staff on the area than SNTC do. In addition, as there must be a minimum number of trainees for a course to be offered, it is much worth for HEI to offer this type of courses (because they can gather training teachers from different schools) than it is for SNTC that tend to gather teachers from the school network only.

Table 2: Focus of the training courses per type of training institution (%)

(N=1383)

Focus of the training courses		HEI (n=184)		SNTC (n=1199)	
		f	%	f	%
Specific issues (n=355)	Content knowledge themes	26	14,1	19	1,6
	Science education themes	44	23,9	266	22,2
General issues (n=1028)	General educational issues	102	55,4	793	66,1
	Cultural, social and ethics themes	7	3,8	74	6,2
	Educational research issues	2	1,1	1	0,1
	Teaching practice issues	3	1,7	46	3,8

As far as general issues courses are concerned, the percentages of courses are high (over 50%) whatever the type of institution even though HEI differ from SNTC as the latter offer a larger percentage of training courses focusing on the general educational issues than the HEI do. As it will be shown latter, general educational issues is a broad category that includes courses on several themes that can be attended by teachers of every school subject. This may mean that it is worth for SNTC to organize courses on general issues because these courses can gather school network teachers of the different school subjects and therefore it is easy to reach the minimum number of trainees.

The training courses focusing on science content knowledge themes are reduced in number (n=45). They include large scope courses (dealing with interdisciplinary science themes or with a set of topics that belong to diverse science areas) or subject focused courses, concentrating on biology, chemistry, geology or physics (table 3).

Comparing the two types of training institutions, the percentages of physics and science courses offered by HEI surpass those of the SNTC while the percentage of biology and geology courses offered by SNTC surpass HEI. This result may be due to the fact that, as students perceive physics as being a difficult subject (Angell, Guttersrud & Henriksen, 2004), science faculties feel like helping teachers to overcome their lack of knowledge by offering in-service training courses focusing on physics issues. The percentages of courses focusing on chemistry are low,

in both types of institutions. As it is our belief that teachers' chemistry knowledge base also needs to be updated, these so low percentages were unexpected. A consequence of this is that teachers may find it hard to attend an in-service course on Chemistry knowledge to update their content knowledge base.

Table 3: Science scope of the content knowledge training courses (%)

(N=45)

Science scope	HEI (n=26)	SNTC (n=19)	Examples of training courses themes
Science	30,8	21,1	Contemporary science themes; Earth and life science topics
Biology	11,5	26,3	Ethnobotanics; Mycology & environment
Chemistry	3,9	5,2	Biodiesel production; Chemistry, health and environment
Geology	19,2	26,3	Viana do Castelo geologic Patrimony; Geology and sustainability
Physics	34,6	21,1	Topics and history of astronomy; Sound and light waves

Courses on cultural, social and ethics themes, on educational research issues and on teaching practice issues are very few (table 2) and they were not further analysed. However, it is worth noting that educational research is a teacher education component prescribed in the post-Bologna law and that every teacher should hold knowledge on in order to being able to permanently evaluate and improve his/her own teaching practice. Besides, training on the cultural and social components is relevant not only because it is prescribed in nowadays teacher education law but also because teachers need to be aware of the culture and the society characteristics of the school environment if they are going to adopt a science, technology and society perspective. Finally, the ethics component is relevant not only from a teacher own action point of view but also from a student education point of view. In fact, issues like access to information and easy use of text and image raise questions of copyright and authorship that today students need to be educated for using.

As shown by table 4, the science education training courses focus on a variety of themes, whatever the type of institution, even though there are some differences between the courses they offer. The themes compare to those that Mortimer (2002) and Paixão, Lopes, Guerra, and Cachapuz (2008) have identified as being in the science education agenda.

With regard to practical work courses, the percentage of courses offered by HEI is higher than the percentage of courses offered by SNTC. It should be noted that the Portuguese secondary school syllabuses includes a set of laboratory activities that must be performed with/by the students. As some teachers lack laboratory skills, they may look for training courses that concentrate on those activities and HEI may offer them because they want to help teachers and they have appropriate lab equipment to perform those activities.

Table 4: Focus of the science education training courses (%)

(N=310)

Science education issues	HEI (n=44)	SNTC (n=266)	Examples of training courses themes
ICT in science education	13,6	23,3	ICT in science teaching
Practical work	27,3	17,7	Lab activities in science teaching; The Penha mountain as a Geology teaching resource
Health education	20,5	39,8	Sex education in school context; Health education in school for tobacco prevention.
Environmental education	6,8	8,6	Biodiversity, nature conservation and environmental education
Problem-based learning of science	9,1	0,4	The learning of science and geography through PBL
Science, technology and society	2,3	0,8	Applying STEM in the classroom
History of science	4,5	0,0	History of science in science teaching
Science curricula	6,8	3,0	Teaching and learning Environment/Geography Study and the horizontal and vertical curriculum articulation
Science teaching approaches	9,1	4,5	Sound and light: possibilities in the classroom Physical Sciences: a modern and global approach
Other	0,0	1,9	Science and mathematics inclusive teaching strategies

The percentages of information and communication technology (ICT) in science education and of health education courses offered by SNTC are higher than the percentages of courses offered by HEI. Health education is even the area that got the highest percentage of training courses. This may be due to the fact that since 2005 (law 25994/2005, December 16) the ministry of education has been increasingly valuing health education in schools and settling training requirements for teachers that were appointed to engage into health education projects (law 2506/2007, February 20; law-60/2009, August 6, law 196-A/2010 April 9). As some teachers, namely some science teachers (as it is the case of physics and chemistry teachers), have no undergraduate training in health education, then they may put pressure on their school counterparts so that those teachers that fulfil the formal requirements can organize some training on health education in their school or in their school network. In addition, the analysis of the titles of the health education courses suggests that they concentrate on a variety of different issues like healthy life styles, oral health, sex education, nutrition, etc. which also explains the large number of courses offered in the area.

Problem-based learning of science got a higher percentage in the case of HEI (9,1%) than it did in the case of SNTC (0,4%). This may be due to the fact that Problem-based learning is a new methodology in science teaching (Hung, Jonassen, & Liu, 2008) and, as it should be expected, it has to do with a methodological innovation that comes from educational research carried out by HEI and it takes time before school teachers feel comfortable not only to teach with it but moreover to train their counterparts on it. Some history of science in-service training is offered by HEI only. This may be due to the fact that some HEI have specialists on history of science which are not to be expected in the schools.

As far as courses within the scope of general education are concerned, they cover the diverse general education teacher training components (table 5) but there are some differences between HEI and SNTC.

Table 5: Focus of the general education training courses (%)

(N=895)

General educational issues	HEI (n=102)	SNTC (n=793)	Examples of training courses themes
Curriculum development	4,9	0,5	Curriculum horizontal and vertical articulation
ICT	20,6	40,5	Exploration of educational software - Movie Maker
Special educational needs	5,9	12,1	Improving educational practices for students with special needs
Learning difficulties	7,8	8,4	Learning difficulties and educational success
Teacher characteristics	0,0	1,8	The importance of voice and corporal posture in the teaching profession
School management	25,5	12,2	School management
Assessment	14,7	11,9	Students' learning assessment; Supervision and assessment of teacher performance; Schools self-assessment and educational project
Students' misbehaviour	0,0	8,7	Misbehaviour in the school
First aid	0,0	1,4	The basics of first aid in the school context
Educational mediation	20,6	2,5	Conflicts mediation in the school community

The highest percentage of courses was got for ICT courses offered by SNTC, which is about the double of the one obtained for HEI. In today's technologically advanced information societies, ICT is a relevant device to teach science and to make science teaching more appealing to students. Teachers' awareness of this may lead them to look for training in order to try to be updated. However, it may be that they feel afraid of taking in-service training at HEI, which they tend to imagine as being more theoretical and/or complex, and to prefer to do it at SNTC, that they may imagine as being more practice focused.

School management and educational mediation are the areas in which the percentages of courses offered by HEI are higher than the percentages of the courses in the same areas, offered by SNTC. This may be due respectively to the specialization and the novelty of these areas.

In some themes the percentages are similar (e.g., assessment) but in other areas (e.g., special educational needs) they are a bit higher for SNTC. The remaining types of courses are quite rare and some of them are offered by SNTC only. Some of them focus on very practical issues like students' misbehaviour and first aid. Some of these results may be explained by the fact that some schools may have a special education teacher and/or a psychologist which may be asked to organize training for their school teachers, namely on students' behaviour and on special education.

CONCLUSIONS AND IMPLICATIONS

The results of this study suggest that a variety of training courses is available to science teachers and that SNTC offer much more courses than HEI. The courses offered cover the diverse teacher education components but they do it differently. In fact, in some areas a lot of courses are offered but in other areas it may be hard for teachers to find an in-service training course. Of course, teachers can ask for a course in a specific area of their own interest but it requires them to find the right training institution, to take some initiative to get in touch with it and to be lucky to have a teacher trainer available to organize the required training. It is worth noting that the analysis reported in this paper focused on the title of the in-service courses only. Of course research is needed not only in order to find out how the course content is a good development of it and how the courses are put into practice which something that depends partly on the teacher educators that are in charge of it and also on the availability of the resources required.

Institutions that offer in-service training to teachers need to be accredited and therefore the training they offer fulfils minimal quality requirements. However, some issues may be raised with regard to in-service training. On one hand, HEI for their mission should be expected to offer more up to date and innovative courses (Hénard & Roseveare, 2012) in all the teacher education dimensions. Nevertheless, even though there are six HEI (versus 32 SNTC) in the geographic area considered for the purpose of this study, the number of courses they offer and that are targeted to the population of this study is quite low and it could be argued that many teachers may not be able to enter a course offered by a HEI. Teachers can ask HEI to offer a specific training course but teachers may feel afraid of approaching it to ask for training. Therefore, there may be a problem with HEI in-service training offer: HEI may not offer courses because teachers do not look for them; and if HEI do not offer courses, then teacher cannot choose them. Also, HEI formative offer is a top-down one that may be disconnected from teachers' real needs (Hénard & Roseveare, 2012).

On the other hand, most SNTC teacher trainers are experienced teachers (OECD, 2013) which are expected to offer quite practical and contextualized courses. However, they are not professional science education researchers and therefore cannot be expected to be as much specialists on the course issues as HEI teacher trainers should be. Consequently, they may not be enough up dated in terms of recent science education knowledge. However, they may be easier to approach by their colleagues to organise a specific training course. This bottom-up approach gives rise to a sense of empowerment and confidence favours collaborative, interactional (Coolahan, 2002) and context dependent training techniques. In addition, SNTC offer in-service training free of charge and organize it in (or very near) the place where teachers work, while HEI charge teachers for course attendance and may be far away from the school where they teach. Nevertheless, OECD (2013) emphasizes the importance of external assistance to the process of in-service teacher education, such as support from HEI, education centres, and regional or specialist support teams.

However, if in-service training is to have any positive effect on teacher professional development, the in-service training courses that qualify for teachers' progression should be well identified so that teachers do not complete the required credits with courses that give a limited contribution for their professional knowledge base and that have low relevance for improving science teaching in schools.

According to Coolahan (2002), in-service training needs may have two main origins: education system needs, which may be regarded as being prominent; and the personal and individual needs of the teachers. As the former cannot exclude the latter, the challenge is to find ways of combining trainings with the two aims as well as trainings offered by the diverse types of training institutions, namely by HEI and SNTC, and given by qualified teacher educators. As most teacher educators' have no training (Bayrakci, 2010), this may require the definition of general and content dependent teacher educator's profiles as well as the formalization of a teacher educator's development system.

A coherent system of professional development activities for teacher educators should be based on knowledge and research regarding the work and learning of teacher educators (OECD, 2013). In addition, and in order to improve in-service training, teacher educators' accreditation should be stricter and require a specialization on the issues the courses focus on, which may require support in terms of their own educational and professional development.

ACKNOWLEDGEMENTS

This work is funded by CIEd – Research Centre in Education, Institute of Education, UMinho, UID/CED/01661/2013 - through national funds of FCT/MCTES-PT.

REFERENCES

Anderson, D. (2015). The nature and influence of teacher beliefs and knowledge on the science teaching practice of three generalist New Zealand primary teachers. *Research in Science Education*, *45*(3), 395-423. doi: 10.1007/s11165-014-9428-8.

Angell, C., Guttersrud Ø., & Henriksen, E. (2004). Physics: frightful, but fun: pupils' and teachers' views of physics and physics teaching. Science Education, *88*, 683-706.

Bayrakci, M. (2010). In-Service teacher training in Japan and Turkey: a comparative analysis of institutions and practices. *Australian Journal of Teacher Education, 34*(1), 10-22.

Bell, B. (2005). *Learning in science*. London: Routledge.

Berry, A. & Loughran, J. (2012). Developing science teacher educators' pedagogy of teacher education. In B. Fraser, K. Tobin, & C. McRobbie (Eds.), *Second international handbook of science education* (pp. 401-416). Dordrecht: Springer.

Bianchini, J. (2012). Teaching while still learning to teach: beginning science teachers' views, experiences, and classroom practices. In B. Fraser, K. Tobin, & C. McRobbie (Eds.), *Second international handbook of science education*, Vol. 24 (pp. 389-400) Dordrecht: Springer.

Blonder, R., Benny, N., & Jones, M. (2014). Teaching self-efficacy of science teachers. In R. Evans, J. Luft, C. Czerniak, & C. Pea (Eds.), *The role of science teachers' beliefs in international classrooms: from teacher actions to student learning* (pp. 3-16). Rotterdam: Sense Publishers.

Castro, R. (2015). Teacher education in Portugal: a history of transitions. In L. Leite, M. Flores, L. Dourado, M. Vilaça, & S. Morgado (Orgs.), *Proceedings of the ATEE annual conference 2014 - transitions in teacher education and professional identities* (pp. 3-14). Brussels: ATEE. https://repositorium.sdum.uminho.pt/handle/1822/36281?locale=en. Accessed 14 November 2015.

Coolahan, J. (2002). Teacher education and the teaching career in an era of lifelong learning. *OECD education*, 2. doi: 10.1787/226408628504.

Davies, P. (1999). What is evidence-based education? *British Journal of Educational Studies*, *47*(2), 108-121.

Day, C. & Sachs, J. (2004). Professionalism, performativity and empowerment: discourses in the politics, policies and purposes of continuing professional development (pp. 3-32). In C. Day, & J. Sachs (Eds.), *International handbook on the continuing professional development of teachers*. Maidenhead: Open University Press.

Dillon, J. & Maguire, M. (2007). Developing as a beginning teacher. In J. Dillon, & M. Maguire (Eds.), *Becoming a teacher: issues in secondary teaching*, 3rdEd. (pp. 3-25). Berkshire: Open University Press.

Eurydice (2011). *Science education in Europe: national policies, practices and research*. Brussels: Eurydice. http://eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/133en.pdf. Accessed 15 September 2015.

Eurydice (2015). *The teaching profession in Europe: practices, perceptions, and policies. Eurydice Report.* Luxembourg: Publications Office of the European Union.

Flores, M. & Day, C. (2006). Contexts which shape and reshape new teachers' identities: a multi-perspective study. *Teaching and Teacher Education*, *22*, 219-232. doi: 10.1016/ j.tate.2005.09.002.

Frost, J. (2010). Learning to be a science teacher. In J. Frost (Ed.) *Learning to teach science in the secondary school: a companion to school experience* 3Ed. (pp. 2-10). New York: Routledge.

Gil-Pérez, D. (1991). ¿Qué han de saber y saber hacer los profesores de ciencias? *Enseñanza de las Ciencias*, *9*(1), 69-77.

Goodwin, A. & Kosnik, C. (2013) Quality teacher educators = quality teachers? Conceptualizing essential domains of knowledge for those who teach teachers. *Teacher Development*, *17*(3), 334-346. doi:10.1080/13664530.2013.813766.

Hargreaves, A. (1998). The emotional practice of teaching. *Teaching and Teacher Education*, *14*(8), 835-854.

Harrison, C. & Killion, J. (2007). Ten roles for teacher leaders. *Teachers as Leaders, 65*(1), 74-77.

Hénard, F. & Roseveare, D. (2012). Fostering quality teaching in higher education: policies and practices. *OECD Publishing*. https://www.oecd.org/edu/imhe/QT%20policies%20and%20practices.pdf. Accessed 04 August 2016.

Henze, I. & van Driel, J. (2015). Toward a more comprehensive way to capture PCK in its complexity. In A. Berry, P. Friedrichsen, & J. Loughran (Eds.), *Re-examining pedagogical content knowledge in science education* (pp. 120-134). New York: Routledge.

Hilton, G., Flores, M., & Niklasson, L. (2013). Teacher quality, professionalism and professional development: findings from a European project. *Teacher Development*, 17(4), 431-447. doi: 10.1080/13664530 .2013.800743.

Hung, W., Jonassen, D., & Liu, R. (2008). Problem-based learning. In *Handbook of research on educational communications and technology*, edited by M. Spector, D. Merrill, J. van Merrienboer, & M. Driscoll, 485-506. New York: Lawrence Erlbaum Associates.

Kazempour, M. & Sadler, T. (2015) Pre-service teachers' science beliefs, attitudes, and self-efficacy: a multi-case study. *Teaching Education*, 26(3), 247-271. doi:10.1080/10476210.2014.996743.

Korthagen, F. (2010). How teacher education can make a difference. *Journal of Education for Teaching, 36*(4), 407-423. doi:10.1080/02607476.2010.513854.

Lederman, N. & Lederman, J. (2015). The status of preservice science teacher education: a global perspective. *Journal of Science Teacher Education, 26*, 1-6. doi: 10.1007/s10972-015-9422-7.

Leite, C. (2005). Percursos e tendências recentes da formação de professores em Portugal. *Educação*, *3*(57), 371-389.

Luehmann, A. (2007). Identity development as a lens to science teacher preparation. *Science Education, 91*, 822-839. doi: 10.1002/sce.20209.

Mansour, N. (2009). Science teachers' beliefs and practices: issues, implications and research agenda. *International Journal of Environmental & Science Education, 4*(1), 25-48.

Marcelo, C. (2009). Professional development of teachers: past and future. *Sísifo: Educational Sciences Journal*, *8*, 5-20.

Mestre, L. (2012). *Designing effective library tutorials: a guide for accommodating multiple learning styles.* Oxford: Chandos Publishing.

Mortimer, E. (2002). Uma agenda para a pesquisa em educação em ciências, *Revista Brasileira de Pesquisa em Educação em Ciências*, *2*(1), 36-59.

Murray, J. (2014). Teacher educators' constructions of professionalism: a case study. *Asia-Pacific Journal of Teacher Education, 42*(1), 7-21. doi:10.1080/1359866X.2013.870971.

Musset, P. (2010). *Initial teacher education and continuing training policies in a comparative perspective: current practices in OECD countries and a literature review on potential effects*. OECD Publishing. http://dx.doi.org/10.1787/5kmbphh7s47h-en. Accessed 14 September 2015.

National Research Council (2010). *Preparing teachers: building evidence for sound policy*. Washington: the National Academies Press.

O'Dwyer, J. & Atlı, H. (2015). A study of in-service teacher educator roles, with implications for a curriculum for their professional development. *European Journal of Teacher Education*, *38*(1), 4-20. DOI: 10.1080/02619768.2014.902438.

OECD (2013). Supporting teacher educators: for better learning outcomes. OECD Publishing. http://ec.europa.eu/education/school-education/teacher-cluster_en.htm. Accessed 22 March 2016.

OECD (2014a). *TALIS 2013 results: an international perspective on teaching and learning. OECD Publishing*. http://dx.doi.org/10.1787/9789264196261-en. Accessed 14 September 2015.

OECD (2014b). Education at a Glance 2014. OECD Indicators, *OECD Publishing*. http://dx.doi.org/10.1787/ eag-2014-en. Accessed 14 September 2015.

Ogunniyi, M. & Rollnick, M. (2015). Pre-service science teacher education in Africa: prospects and challenges. *Journal of Science Teacher Education, 26*, 65-79. doi: 10.1007 /s10972-014-9415-y.

Paixão, M., Lopes, B., Guerra, C., & Cachapuz, A. (2008). Where are we? A contribution to a better understanding of the state of the art in science education research. *Journal of Science Education*, *9*(1),4-8.

Ponte, J. (2006). Os desafios do processo de Bolonha para a formação inicial de professores. *Revista da Educação*, *14*(1), 19-36.

Pritchard, A. (2009). *Ways of learning: learning theories and learning styles in the classroom*. London: Routledge.

Rebmann, K., Schloemer, T., Berding, F., Luttenberger, S., & Paechter, M. (2015). Pre-service teachers' personal epistemic beliefs and the beliefs they assume their pupils have. *European Journal of Teacher Education, 38*(3), 284-299. http://dx.doi.org/10.1080/02619768.2014.994059. Accessed 10 December 2015.

Saka, Y., Southerland, S., Kittleson, J., & Hutner, T. (2013). Understanding the induction of a science teacher: the interaction of identity and context. *Research Science Education*, *43*, 1221-1244. doi: 10.1007/s11165-012-9310-5.

Schneider, R. (2015). Pedagogical content knowledge reconsidered: a teacher educator's perspective. In A. Berry, P. Friedrichsen, & J. Loughran (Eds.), *Re-examining pedagogical content knowledge in science education* (pp. 162-177). New York: Routledge.

Sickel, A., Banilower, E., Carlson, J., & van Driel, J. (2015). Examining PCK research in the context of current policy initiatives. In A. Berry, P. Friedrichsen, & J. Loughran (Eds.), *Re-examining pedagogical content knowledge in science education* (pp. 199-213). New York: Routledge.

Snoek, M. & Zogla, I. (2009). Teacher education in Europe; main characteristics and developments. In A. Swennen & M. Klink (Eds.), *Becoming a teacher educator: theory and practice for teacher educators* (pp. 11-27). Dordrecht: Springer.

Stenberg, K., Karlsson, L., Pitkaniemi, H., & Maaranen, K. (2014). Beginning student teachers' teacher identities based on their practical theories. *European Journal of Teacher Education*, *37*(2), 204-219.

Treagust, D., Won, M., Petersen, J., & Wynne, G. (2015). Science teacher education in Australia: initiatives and challenges to improve the quality of teaching. *Journal of Science Teacher Education, 26*, 81-98. doi: 10.1007/s10972-014-9410-3.

Wallace, C. (2014). Overview of the role of teacher beliefs in science education. In R. Evans, J. Luft, C. Czerniak,

& C. Pea (Eds.), *The role of science teachers' beliefs in international classrooms: from teacher actions to student learning* (pp. 17-31). Rotterdam: Sense Publishers.

Wallace, J. & Loughran, J. (2012). Science teacher learning. In B. Fraser, K. Tobin, & C. McRobbie (Eds.), *Second international handbook of science education*, Vol. 24 (p. 295-306). Dordrecht: Springer.

Yassin, B. & Almasri, M. (2015). How to accommodate different learning styles in the same classroom: analysis of theories and methods of learning styles. *Canadian Social Science, 11*(3), 26-33. doi: 10.3968/6434.

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education*, *61*(1-2), 89-99. doi: 10.1177/0022487109347671.

Zhang, M., Parker, J., Koehler, M., & Eberhardt, J. (2015). Understanding in-service science teachers' needs for professional development. *Journal Science Teacher Education*, *26*, 471-496. doi: 10.1007/s10972-015-9433-4.

INTERCULTURAL COMPETENCY SKILLS OF INTERNATIONAL COLLEGE STUDENTS OF A THAILAND PUBLIC UNIVERSITY

Keow Ngang TANG
International College, Khon Kaen University, Thailand
tangng@kku.ac.th

La-orsri SANOAMUANG
International College, Khon Kaen University, Thailand
la_orsri@kku.ac.th

ABSTRACT
This paper aimed to investigate intercultural competency skills of International College students, a public university in Thailand. Specifically, researcher embarks on the intercultural competency skills assessment between local Thai students and international students, different program, and academic year further investigate the gap between the different groups of students. The key challenge of higher education today is building knowledge-based and skilled workforce for the future. An exploratory research design utilizing quantitative method was employed. A survey research design utilizing questionnaire was used to generate data because researchers intend to investigate and explore in-depth the intercultural competency skills of International College students in terms of their knowledge, skills, and personal attitudes. A total of 129 International College students were purposively selected on volunteering basis from different program groups respectively as respondents. Results indicated that there is significant difference of their intercultural competency skills in terms of their knowledge, skills, and attitudes between local and international students, different program as well as different academic year. Local students are found to be lacking of awareness on the importance of intercultural competency skills compared to international students. In conclusion, International College students have to polish their knowledge about other cultures and other friends' behavior, empathy or understanding the feelings and needs of others, self-confidence like knowledge of one's own desires, strengths, weaknesses and emotional stability, and cultural identity that is knowledge of one's own culture.
Keywords: Intercultural competency skills, International College, local and international students

INTRODUCTION

Intercultural competence is the capability to develop targeted knowledge, skills, and attitudes that lead to discernable behavior and communication that are both effective and appropriate in intercultural interactions (Deardorff, 2006). According to Deardorff, integral elements of intercultural competence are comprised of knowledge, skills and attitudes. Knowledge of intercultural competence covers culture self-awareness, culture specific knowledge, sociolinguistic awareness, and grasp of global issues and trends. Culture self-awareness is defined as articulating how one's own culture has shaped one's identity and world view. Culture specific knowledge refers to analyze and explain basic information about other cultures such as history, values, politics, economics, communication styles, values, beliefs, and practices. The meaning of sociolinguistic awareness is acquiring basic local language skills, articulating differences in verbal or non-verbal communication, and adjusting one's speech to accommodate nationals from other cultures. Grasp of global issues and trends means explaining the meaning and implications of globalization and relating local issues to global forces. On the other hand, skills of intercultural competence encompasses listening, observing, evaluating skills, analyzing, interpreting and relating skills, as well as critical thinking. Listening, observing, evaluating skills refer to using patient and perseverance to identify and minimize ethnocentrism, seek out cultural clues and meaning. Analyzing, interpreting and relating skills means seeking out linkages, causality and relationships using comparative techniques of analysis. The meaning of critical thinking is viewing and interpreting the world from other cultures' point of view and identifying one's own. Finally, attitudes of intercultural competence are including respect, openness, curiosity, and discovery. Respect refers to seeking out other cultures' attributes; value cultural diversity; thinking comparatively and without prejudice about cultural differences. Openness is defined as suspending criticism of other cultures; investing in collecting 'evidence' of cultural difference; being disposed to be proven wrong. Curiosity refers to seeking out intercultural interactions, viewing difference as a learning opportunity, being aware of one's own ignorance. Discovery refers to tolerating ambiguity and viewing it as a positive experience; willingness to move beyond one's comfort zone.

Higher education institution rely greatly on numbers to exhibit success in internationalization, such as developing intercultural competent graduates who can compete successfully in the global workforce. According to Deardorff (2006), U.S. higher education institutions face many challenges including the tasks of remaining intellectually and culturally feasible in a rapid changing world, preparing students to strive competitively in the global marketplace,

and staying well-informed of the electronic surge of information and globalized knowledge. As a result internationalization of higher education has become one possible response to such challenges. However the specification of anticipated outcomes of internationalization are often general and vague, with goals stated broadly that the institution will become internationalized or that a goal is to graduate cross-culturally competent students or global citizens.

STATEMENT OF PROBLEM

Deardorff (2006) emphasized that the knowledge, skills and attitudes are expected to lead to internal outcomes which refer to an individual who learns to be flexible, adaptable, empathetic, and adopts an ethno-relative perspective. These qualities are reflected in external outcomes which refer to the observable behavior and communication styles of the individual. They are the discernable evidence that the individual is or is learning to be interculturally competent. Currently educators and employers increasingly acknowledge the value of intercultural competence. Therefore most of the higher education institutions consider these skills as important outcomes for their graduates (Lombardi, 2010).

Higher education particularly International College can provide an excellent opportunity for students either local or international students to explore and practice the development of intercultural competencies. However, there is both anecdotal and research evidence to suggest that this does not always happen, nor does it happen by chance (Krajewski, 2011). Lecturers are well positioned to acquire and develop these intercultural skills and to encourage the development of these skills in students first by modelling these skills themselves and also by using specific strategies within their classes. Clearly these are competencies for all students, not just cater for international ones. According to the reviewed literature, the outcomes of the intercultural competence prepared in the current move towards better recognition of non-formal education and non-formal learning and a better understanding of key competencies for young people like college students is a necessity (Hoskins & Sallah, 2011).

LITERATURE REVIEWS

Leung, Ang and Tan (2014) reviewed recent theoretical and empirical developments in the intercultural competencies literature and highlighted contemporary models and empirical research in organizational contexts. They surveyed the current conceptualizations of intercultural competencies and proposed that intercultural competencies could be classified based on traits, attitudes and worldviews, capabilities, or a combination of these dimensions. They identified key psychological, behavioral, and performance outcomes associated with these models. They reviewed empirical studies of intercultural competencies at the group level and discuss emerging models of dyad-level, firm-level, and multilevel intercultural competencies. They evaluated the current measurement of intercultural competencies and suggested alternative approaches. Finally, they examined research on selection, training, and development of intercultural competencies. They also identified future research foci and offered an integration at the end of their review.

Dimitrov, Dawson, Olsen, and Meadows (2014) explored how teaching development programs may facilitate the development of intercultural competence in graduate students and prepared them for communicating effectively in the global workplace after graduation. Dimitrov et al. described the concept of intercultural teaching competence and examined the skills that graduate students may need to cultivate in order to communicate effectively in cultural diverse settings. Their quality findings revealed that teaching development programs are able to enhance intercultural communication components. As a result of training, students became more aware of cultural and disciplinary differences were able to adapt their communication style to audiences with different levels of background knowledge, and felt more prepared for interpersonal interactions across cultures. They also found out that students were able to transfer the skills learned to other areas of graduate study and used effective intercultural communication strategies when interacting with globally diverse peers and faculty supervisors.

RESEARCH OBJECTIVES

In accordance with the problems indicated above, this study embarks on the following objectives:

1. To assess the intercultural competency skills of international college students.
2. To investigate the difference on the acquisition of intercultural competency skills between local and international students.
3. To investigate the difference on the acquisition of intercultural competency skills among the six different programs.
4. To investigate the difference on the acquisition of intercultural competency skills among the different academic years of study.

METHODOLOGY

This study employs survey questionnaire as a method to collect quantitative data. This method benefits this study

in terms of obtaining data more efficiently as time, energy, and costs could be minimized (Sekaran, 2006). Besides a survey design provides an excellent means of measuring attitudes and orientations in a large population which can, therefore be generalized to a larger population (Babbie, 2002).

Population and Sample

The population of the study consists of the students from undergraduate program provided by International College of a public university, in Khon Kaen, Thailand. Table 1 shows the demographic factors of sample comprises of 129 students who are chosen by sampling purposively on volunteering basis. Majority of the samples are Thai students 113 (87.6%) and 16 (12.4%) international students who study in these six programs namely International Affairs, Global Business, International Marketing, Tourism Management, Humanities and Social Sciences, and Multimedia Technology and Animation.

As seen in Table 1, the sample of the study is formed from 129 International College students, 58 from Global Business program (45%), 20 from International Marketing program (15.5%), 18 from Humanities and Social Sciences (14.0%), 12 from International Affairs program (9.3%), 11 from Tourism Management program (8.5%), and 10 from Multimedia Technology and Animation program (7.7%). Majority of the samples are first and second year students.

Table 1. The distribution of samples surveyed

Demographic Factors	Frequency	Percentage
Nationality		
Thai	113	87.6
International	16	12.4
Program		
International Affairs	12	9.3
Global Business	58	45.0
International Marketing	20	15.5
Tourism Management	11	8.5
Humanities and Social Sciences	18	14.0
Multimedia Technology and Animation	10	7.7
Academic year		
First year	65	50.4
Second year	57	44.2
Third year	5	3.9
Final year	2	1.6
TOTAL	129	100

Data collection devices

Researchers has adapted the Intercultural Development Inventory (Hammer & Bennett, 1998) as the tool of the data collection and whose validity and reliability studies was made in the light of expert view and the results of pre-perform has been used. In the survey, there are 4 choices that rate as "disagree (1), slightly disagree (2), agree (3), and strongly agree (4)". In order to make detailed analysis and comments on the basis of items and because the items of the survey are handled independently from each other, an analysis related with the reliability of the scores like the coefficient of Cronbach Alfa internal consistency is not done.

Data analysis

The data collected in this study are evaluated with SPSS 17.0 packaged program. In analyzing the data, the number of the students who expressed their views regarding each item and their percentage is given as a table. According to their nationality, program, and academic year of study that whether there is significant differences between International College students' views related with contribution to the evaluation of using the intercultural competency skills is tested with independent t-test and one way ANOVA. In this study, the level of significance is taken as $p \leq .05$.

FINDINGS

Findings of this study are presented in accordance with the research objectives that are indicated above. The initial finding is descriptive findings about the intercultural competency skills of International College students. This is followed by inferential findings to measure the gap between the different groups.

Intercultural competency skills of International College students

The questionnaire is contained attitude-measuring questions in which the respondents reflected their views on their own behavior or self-report measures. Result of the study as shown in Table 2, revealed their intercultural competency skills. Majority of the students understand how their cultural background affecting their thinking and actions ($\bar{x}$ = 3.488, *SD* = .762). This is followed by 'I am able to build positive relationship with my friends from different ethnic and culture" ($\bar{x}$ = 3.419, *SD* = .609), "I can apply my cultural awareness and knowledge when interacting with different cultures friends" ($\bar{x}$ = 3.326, *SD* = .639), "I understand the meaning of racism" ($\bar{x}$ = 3.271, *SD* = .768), "I understand the differences in cultural practices of my friends and society" ($\bar{x}$ = 3.225, *SD* = .615), "I understand about the concept of cultural diversity sensitivity" ($\bar{x}$ = 3.209, *SD* =.608), "I have the impression that all of us can learn well regardless of our ethnic and cultural backgrounds" ($\bar{x}$ = 3.202, *SD* = .666), and "I understand the meaning of social distance" ($\bar{x}$ = 3.194, *SD* =.600).

Besides there are two intercultural competency skills having the same mean score ($\bar{x}$ = 3.171) namely "I understand the feelings of someone from another ethnic group" (*SD* =.708) and "I understand the meaning of prejudice" (*SD* =.811). Next is "I am interested in the values, traditions, and culture of my friends" ($\bar{x}$ = 3.140, *SD* =.682). Then is "I have problem to interact with my friends who are from different ethnic group" ($\bar{x}$ = 3.116, *SD* =.973). On the other hand, "I understand how prejudice can affect an individual" and "I like to work with my friends from different cultures in order to perform tasks together" are having the same mean score ($\bar{x}$ = 3.101) with (*SD* =.769) and (*SD* = .748) respectively.

Subsequently ranking in order from high to low are as follows: "It is the responsibility of teachers to provide opportunities for students to share the cultural difference ($\bar{x}$ = 3.070, *SD* = .894), "I realize that my culture is different from some of my friends" ($\bar{x}$ = 3.062, *SD* = .737), "I have knowledge of other ethnic group culture" ($\bar{x}$ = 3.039, *SD* = .654), "I can identify International College practices that impacting on students from ethnic minority groups ($\bar{x}$ = 3.023, *SD* = .631), "I can identify the ethnic group of my friends" ($\bar{x}$ = 2.977, *SD* = .592), "I was able to determine the needs of my friends who are from different cultural backgrounds than myself" ($\bar{x}$ = 2.884, *SD* = .645), "I can accept the use of ethnic jokes among my friends" ($\bar{x}$ = 2.837, *SD* = .779), "I prefer to be friends with those who are having the same culture with me" ($\bar{x}$ = 2.690, *SD* = .991), "I usually ignore racist statements" ($\bar{x}$ = 2.411, *SD* = 1.035), and "Teaching to respect of customs and ethnic traditions is not the responsibility of International College teacher" ($\bar{x}$ = 2.256, *SD* = 1.040). Finally the least capacity intercultural competency skill is "I feel uncomfortable in a situation where someone shows different values and beliefs with mine" ($\bar{x}$ = 2.007, *SD* = .914).

Generally majority of international college students agree upon cultural and ethnic difference among themselves. They are found to have knowledge about racism, other group culture, values, and traditions. Researchers can conclude that most of the International College students are aware of cultural difference and possess intercultural competency skills such as cultural tolerance and adjustment. Table 2 shows the descriptive findings on distribution of International College students' views related to their intercultural competency skills. Their views have been measured from disagree to strongly agree.

Table 2: Distribution of international college students' views related to intercultural competency skills

Items	$\bar{x}$	D (%)	SD(%)	A (%)	SA(%)
1. I realize that my culture is different from some of friends.	3.062	3.9	12.4	57.4	26.4
2. I can identify the ethnic group of my friends.	2.977	0.8	16.3	67.4	15.5
3. I prefer to be friends with those who are having the same culture with me.	2.690	14.7	24.8	37.2	23.3
4. I feel comfortable in a situation where someone shows different values and beliefs with me.	2.008	34.1	38.0	20.9	7.0
5. I have problem to interact with my friends who are from different ethnic group.	3.116	7.0	20.9	25.6	46.5
6. I can accept the use of ethnic jokes among my friends.	2.837	3.9	27.9	48.8	19.4
7. I usually ignore racist statements.	2.411	25.6	23.3	35.7	15.5
8. Teaching to respect of customs and ethnic traditions is not the responsibility of International College teacher.	2.256	30.2	27.9	27.9	14.0
9. It is the responsibility of teachers to provide opportunities for students to share the cultural difference.	3.070	6.2	17.8	38.8	37.2
10. I understand how my cultural background affecting my thinking and actions.	3.488	1.6	11.6	23.3	63.6
11. I have the impression that all of us can learn well regardless of our ethnic and cultural backgrounds.	3.202	0.8	11.6	54.3	33.3
12. I can identify International College practices that impacting on students from ethnic minority groups.	3.023	1.6	14.0	65.1	19.4
13. I have knowledge of other ethnic group culture.	3.039	2.3	12.4	64.3	20.9
14. I understand the meaning of racism.	3.271	3.9	7.8	45.7	42.6
15. I understand the meaning of prejudice.	3.171	5.4	9.3	48.1	37.2
16. I understand about the concept of cultural diversity sensitivity.	3.209	0.0	10.1	58.9	31.0
17. I understand the meaning of social distance.	3.194	0.0	10.1	60.5	29.5
18. I understand the differences in cultural practices	3.225	0.0	10.1	57.4	32.6
19. I am interested in the values, traditions, and culture of my friends.	3.140	0.8	14.7	54.3	30.2
20. I was able to determine the needs of my friends who are from different cultural backgrounds than myself.	2.884	0.8	24.8	59.7	14.7
21. I understand how prejudice can affect an individual.	3.101	3.9	13.2	51.9	31.0
22. I understand the feelings of someone from another ethnic group.	3.171	2.3	10.9	54.3	32.6
23. I like to work with my friends from different cultures in order to perform tasks together.	3.101	1.6	18.6	48.1	31.8
24. I am able to build positive relationship with my friends from different ethnic and culture.	3.419	0.0	6.2	45.7	48.1
25. I can apply my cultural awareness and knowledge when interacting with different cultures friends.	3.326	1.6	4.7	53.5	40.3

The gap difference of intercultural competency skills between their nationality, program, and academic year

Independent t-test and one way ANOVA analysis were used to measure these gaps. Findings of this study indicate that there is a significant difference between Thai students and international students of their intercultural competency skills in terms of identification of their friends' ethnic group (p = .001), different cultural practices (p = .036), and the impact of prejudice (p = .009). In addition, there is a significant difference between the different program of students on their intercultural competency skills such as impact of cultural background on their thinking and actions (p= 0.006), impact of different ethnic and cultural background on their learning (p = .007), impact of institutional practices (p=.010), and building positive relationship with friend from different ethnic and culture (p=.002). Finally there is a significant difference between the different academic year of their study on their intercultural competency skills namely ignore racist statements (p=.032), impact of cultural background on their thinking and actions (p= 0.000), concern about values, traditions, and culture of others (p=.004), and the impact of prejudice (p = .009). Table 3 indicates the inferential findings of this study.

Table 3: Inferential findings

Item	t or F	*p*
Between Thai and international students (t-test)		
I can identify the ethnic group of my friends.	.282 .291	.001
I understand the differences in the cultural practices of my friends and society.	.692 .823	.036
I understand how prejudice can affect an individual.	.212 .326	.009
Between different program (ANOVA)		
I understand how my cultural background affecting my thinking and actions.	3.486	.006
I have impression that all of us can learn well regardless of our ethnic and cultural background.	3.381	.007
I can identify International College practices that impacting on students from ethnic minority group.	3.147	.010
I am able to build positive relationship with my friends from different ethnic and culture.	4.158	.002
Between different academic year (ANOVA)		
I usually ignore racist statements.	3.040	.032
I understand how my cultural background affecting my thinking and actions.	24.067	.000
I am interested in the values, traditions, and culture of my friends.	4.634	.004
I understand how prejudice can affect an individual.	4.019	.009

DISCUSSION AND CONCLUSION

Researchers employed self-reported measures whereby International College students report their own intercultural competency. Providing self-reports is a complex process (Tourangeau, Rips & Rasinski., 2000) and many factors may influence the accuracy of self-reports (Dunning, Heath & Suls., 2004). Self-reports may contain substantial method variance (Campbell & Fiske, 1959), but researchers are of the view that measurement variance also reveals unique information about a person. For intercultural competence, self-reported measures may reflect a person's intercultural self-efficacy, which is consistent with the definition of self-efficacy as one's perceived capability (Bandura, 1997).

Findings indicate that International College students possess differently according to their nationality, program, and academic year. Researchers suggest that International College students should have an opportunity to reflect consciously on their intercultural skills, receive feedback on those skills, and develop a foundation of intercultural knowledge will be better prepared them to take on leadership roles in diverse group. This is because when they enter the workplace, students are often identified as potential leaders, given their training in areas such as project management and leading teams. However, to be successful leaders in a diverse workplace specifically need to acquire intercultural skills and knowledge (Chuang, 2013). These students have also become increasingly globally mobile, moving from country to country as part of their education. Even within Thailand, students are going to encounter a highly globalized workforce upon graduation.

All teaching programs in international college are suggested to enhance with intercultural competency components therefore allow graduated International College students in the future are equipped with a highly transferable set of interpersonal and facilitation skills that are sought by employers both in academia and in industry settings. Faculty educators should encourage their students to participate in intercultural competency developmental program. Faculty educators need to help students to reflect on the competencies they have gained in the training programs and articulate them to potential employers after graduation.

REFERENCES

Babbie, E. (2002). *The basics of social research* (2nd ed.). Belmont CA: Thomson Learning, Inc.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Campbell, D.T., & Fiske, D.W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychol. Bull*, 56, 81-105.

Chuang, S.F. (2013). Essential skills for leadership effectiveness in diverse workplace development. Online *Journal for Workforce Education and Development*, 6(1). Retrieved from http://opensiuc.lib.siu.edu/cgi/viewcontent.cgi?article=1133&context=ojwed.

Deardorff, D.K. (2006). The identification and assessment of intercultural competence as a student outcome of internationalization at Institutions of Higher Education in the United States, *Journal of Studies in*

International Education, 10, 241-266.
Dimitrov, N., Dawson, D.L., Olsen, K.C., & Meadows, K.N. (2014). Developing the intercultural competence of graduate students. *Canadian Journal of Higher Education*, 44(3), 86-103.
Dunning, D., Heath, C., & Suls, J.M. (2004). Flawed self-assessment: Implications for health, education, and the workplace. *Psychol. Sci. Public Interest*, 5, 69-106.
Hammer, M.R., & Bennett, M.J. (1998). *The intercultural development inventory (IDI) manual*. Portland, OR: Intercultural Communication Institute.
Hoskins, B., & Sallah, M. (2011). *Developing intercultural competence in Europe: The challenges, language and intercultural communication*, 11(2), 113-125. Oxford Routledge.
Krajewski, S. (2011). Developing intercultural competencies in multilingual and multicultural student groups. *Journal of Research in International Education*, 10(2), 137-163.
Leung, K., Ang, S., & Tan, M.L. (2014). Intercultural competence. AROP: *Annual Review of Organizational Psychology and Organizational Behavior Journal* 1, 1-56.
Sekaran, U. (2006). *Research methods for business: A skill building approach* (4th ed.). Carbondale: John Wiley & Sons Inc.
Tourangeau, R., Rips, I.J., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge, UK: Cambridge University Press.

INVESTIGATION OF THE RELATIONSHIP BETWEEN EMPHATY AND FORGIVENESS IN UNIVERSITY STUDENTS

Ali ÖZCAN
Pamukkale Üniversitesi, Denizli, Turkey
aliozcan@pau.edu.tr

ABSTRACT

The purpose of this study is an investigation of the relationship between emphaty and forgiveness in university students. Empathic Tendency Scale and Heartland Forgiveness Scale were applied to a total of 181 university students, including 109 first class, 72 second class. According to the results of the correlation analysis carried out, emphaty and himself / herself forgiveness were found to be relationship significantly. And also according to the results of the correlation analysis carried out, emphaty and others forgiveness were found to be relationship no significantly.

İSLAMİ İLİMLER FAKÜLTESİ ÖĞRENCİLERİNİN MOBİL ARAÇLARI KULLANIMININ VE MEDYA OKURYAZARLIĞININ DİL ÖĞRENME VE ÖĞRETMEDEKİ ÖNEMİ: AKSARAY ÜNİVERSİTESİ ÖRNEĞİ

Yrd. Doç. Hasan UÇAR
Aksaray Ünv. İslami İlimler Fak.
Temel İslam Bilimleri Bölümü Arap Dili ve Belâğatı Ana Bilim Dalı
hasanucar@aksaray.edu.tr

Her geçen gün insanı kıskacında yoğuran medyada, doğru ve yanlış arasında seçim yapabilmek, çağın bireyleri için daha zor hale gelmekte ve kontrollü, seçici, medyanın her tür etkisinin farkında olarak doğru olanı öğrenmek ve öğretmek daha bir önem arz etmektedir. Etrafımızda olup biten her şeyin aslında medyatik bir tarafı vardır ve medyanın bize sunduklarını eleştiri süzgecinden geçirmek artık bir zorunluluktur.

Dil gelişimi sürecinde medyaya ihtiyaçları olduğu kadar, yabancı dil öğrenme aşamasında olan bireyler, diğer insanlara oranla etkiye daha açık ve savunmasızdırlar. Medya okuryazarlığı bireyin yaş, eğitim ve olgunluğuna göre değişkenlikler arz etmektedir. Eğitim ortamlarının koridorlarında gördüğümüz panolardan, uygulamasını telefonumuza yüklediğimiz bir sözlük programının reklamlarına varana kadar her şey dil gelişimine katkıda bulunmaktadır.

Aksaray Üniversitesi İslami İlimler Fakültesi öğrencileri içerisinde yapılan bir araştırma medya okuryazarlığının ve mobil araçların dil öğrenme ve öğretmede müspet etkisini ve dil yeteneğini geliştirmek için medya okuryazarlığı kavramının farkındalığının oradan gelebilecek tehlikelere karşı, uygulama ve site tercihi yapmada daha özenli olmanın önemini ortaya çıkarmıştır. Arapça öğretmeni olmak isteyen öğrenciler derslerde medya araçlarını sıklıkla kullanmanın eğitimde daha etkin bir yöntem olduğunu düşünmekle beraber sınav endişesi vb. sebeplerle ders materyallerine bağlı kalarak bunu geri plana atmaktadırlar.

Gazete ve dergi takip etme alışkanlığına sahip olan, mobil telefonda her an internet erişimi bulunan, televizyon seyreden, sanal medya aracılığıyla arkadaşlıklar kuran ve bu konuda kontrollü olduğunu düşünen fakülte öğrencilerinin Arapça öğreniminde de medya araçlarının sosyal öğrenmedeki rolünü daha iyi kavradığı tespit edilmiştir.

Bir Arap ülkesine giden öğrencinin çevresinde olup bitene duyarlı bir birey olması, diyalog geliştirme becerisi ve üçüncü şahıs olarak etrafındaki olaylara kulak kabartması nasıl ki dil gelişimine katkı sağlıyorsa televizyon izleme süresi, internet bağlantılı bilgisayara ve cep telefonuna sahip olması, Arapça bir film izlemesi veya Arapça alt yazılı bir sinema izlemesi de kitap, gazete ve dergi okuması kadar katkı sağlamaktadır. Dilin konuşulduğu ülkeden uzakta ama o ülkenin dilini konuşan fakülte hocaları ile girilen iletişim ve bir Arap ülkesindekine

benzer ortamları azami oranda aynı şekilde gerçekleştirme çabası yabancı dili öğrenme süresini kısaltmaktadır.

Ders içinde Arapça örnek cümle kullanma, sözlükten kelime arama, yanlış kullanılan terkipleri tespit etme öğrencilerin sıklıkla kullandığı mobil başvuru sebeplerindendir. En önemli zararı edinilen bilginin geçici hafızadan öteye geçememesidir. Ders dışı tekrar ve sürekliliğin ise bu konuda olumlu sonuçlar doğurduğu görülmektedir. Verilen ödevler konusunda medyaya eleştirel yaklaşma ve satır aralarını okuma çabası ayrıntılar konusunda öğrencileri daha titiz olmaya itmektedir.

Ülkemizdeki İlahiyat ve İslami İlimler Fakültelerinin medya okuryazarlığı dersine gereken ilgiyi göstermemesi ve özellikle yeni açılan fakültelerin teknolojik altyapı oluşturma konusunda yetersiz kalmaları da bu konuda zayıf kalınmasına sebep olan bir diğer etkendir.

LİSANS DÜZEYİ FELSEFE EĞİTİMİNDE EDEBİ ESERLERİN MATERYAL OLARAK KULLANILMASI

(Lizbon Kuşatmasının Tarihi Adlı Eser Özelinde Tarih Felsefesi Dersi)

Öğrt. Gör. Dr. Mehmet EVREN
Aksaray Üniversitesi Fen Edebiyat Fakültesi Felsefe Bölümü
mehmet_efesus@hotmail.com

Bu çalışmada, felsefi-edebi eserleriyle dikkat çeken Nobel ödüllü yazar José Saramago'nun tarih felsefesi ile ilgili görüşlerine yer verdiği "Lizbon Kuşatması'nın Tarihi" isimli eseri doküman analizi tekniğiyle incelenecek ve lisans düzeyinde eğitim materyali olarak edebiyatın kullanılıp kullanılamayacağı bu eser üzerinden tartışmaya açılacaktır. Doküman analizi, araştırılması hedeflenen olgu hakkında bilgi içeren yazılı materyalin analizini kapsayan, tek başına da veri yöntemi olarak doğrudan gözlem ve görüşmenin mümkün olmadığı durumlarda kullanılabilen bir yöntemdir. Bu teknikte analiz birimi olarak: "sözcük", "tema", "karakter veya kişi", "cümle veya paragraf" ve "içerik" saptanabilmektedir.

İncelenecek olan eser, düzeltmesi için kendisine gönderilen ve Lizbon kuşatmasının tarihini anlatan bir kitabın nasıl ele alınması gerektiğini anlatan bir düzeltmenin Tarih yazıcılığından bahsetmektedir. Nitekim bu düzeltmen işine heyecan katmak ve kitabın yazarının olumlu fikirlerini olumsuzlayarak, haçlıların kuşatma sırasında Lizbon'a yardım etmediğini ifade ederek kitabın düzeltmesinin tamamlamasını anlatan roman türünde bir eserdir. Düzeltmenin yaptığı gelecek kuşakların tarih bilincini derinden etkileyebilecek bir davranıştır. Bu sebeple önemsendiğini hisseden düzeltmen, öte yandan alacağı cezadan tedirgin olduğu için kitabı teslim eder. Ancak ceza almayı beklerken düzeltmenin iş teklifi alması ve ondan Lizbon kuşatmasının tarihini sıra dışı bir anlatımla yeniden yazması istenir. Bu teklifle beraber düzeltmen roman içinde roman yazma fırsatı bulur ve düzeltmen yazdıklarıyla yaşadıklarını iç içe geçmiş bir şekilde okuyucuya aktarır. Nitekim düzeltmenin zihninden geçenlerden oluşan roman, özellikle tarih felsefesi açısından ele alınabilecek bir eser olarak kendisini göstermektedir.[1]

Anahtar Kelimeler: Felsefe-Edebiyat İlişkisi, José Saramago, Tarih Felsefesi, Lizbon Kuşatması

[1] José Saramago, Lizbon Kuşatmasının Tarihi, Çeviren: İpek Babacan, İş Kültür Yayınları, İstanbul, 2004.

LİSANS DÜZEYİ FELSEFE EĞİTİMİNDE EĞİTİM MATERYALİ OLARAK SİNEMANIN KULLANILMASI

(SNOWPİERCER FİLMİ ÖRNEĞİ)

Yrd. Doç. Dr. Osman Zahid ÇİFÇİ
Aksaray Üniversitesi İslami İlimler Fakültesi, Din Felsefesi Öğretim Üyesi
ozahidcifci@aksaray.edu.tr

Bu çalışmada felsefe eğitimi veren fakültelerde eğitim materyali olarak sinemanın kullanılıp kullanılamayacağı tartışılacaktır. Felsefenin soyut dilinin anlaşılır hale getirilmesini amaçlayan, ders verimini artırmayı hedefleyen öneriler getirecek olan bu çalışmada, siyaset felsefesinin ana tartışma konularını irdeleyen bir film olarak dikkat çeken "Snowpiercer" örnek film olarak irdelenecektir.

Eğitim materyali olarak ele alacağımız "Snowpiercer" filmi politik bir film olarak dikkat çekmekte ve bahsedildiği üzere, siyaset felsefesinin ana kavramlarını tartışmaya açmaktadır. Bu nedenle lisans düzeyinde siyaset felsefesi dersi veren öğretim elemanları için dersin anlaşılmasını sağlamasında önemli bir materyal işlevi görebilir. 1 Ağustos 2013 tarihinde vizyona girmiş olan film Güney Kore yapımı olup, yönetmenliğini Joon Ho Bong yapmıştır.

Çalışmada nitel araştırma yöntemleri arasında sayılan, film gibi görsel malzemelerin incelenmesini içeren tematik inceleme yöntemi kullanılacaktır. Bu yöntemin tek başına veri toplama aracı olarak kullanılabileceği çeşitli araştırmacılar tarafından dile getirilmektedir. Bu yöntemin en büyük avantajı, herkes tarafından ulaşılabilir ve kullanılabilir bir yöntem olması ve sonuçlarının test edilebilirliğidir.

Anahtar kelimeler: Siyaset felsefesi, Felsefe eğitimi, Sinema, Tematik inceleme Snowpiercer

MEASURING MOTIVATION IN SELF-REGULATED LEARNING OF UNIVERSITY STUDENTS

Jitka VACULÍKOVÁ
Tomas Bata University in Zlin, Czech Republic
jvaculikova@fhs.utb.cz

ABSTRACT
The aim of the study, besides the description of the level of the motivation was also to clarify the extent of their interdependencies, as well as identifying causal connections which may affect the self-regulated learning. The data was obtained from a sample of 552 students of helping professions enrolled in tertiary education through the adapted version of the MSLQ questionnaire (Pintrich et al., 1991). Finally, we investigated how students perceive their current academic performance, how they are satisfied with this success and what they thought most often decides the degree of failure in study. Reflections on self-regulated learning and the factors affecting it may be conceived as an incentive to restructure school learning and modify the professional training of students.

Keywords: motivation, self-regulated learning, MSLQ, university students

1. INTRODUCTION

Changes in contemporary society are very quick and advanced influencing all kind of human activities including the area of school learning and its concepts. Requirements for learning and knowledge are changing, and one cannot fail to notice the growing importance of psychological phenomena such as self-regulated learning, which is gradually entering into the school learning and teaching practice.

School learning is understood in accordance with Kulič (1992) as learning which is deliberately organized, thoughtfully managed, pointing to the intended objective and the meaning of which the student is aware. Rightfully so, the acquisition of an effective way of understanding and preparing students for entry into society and the world of knowledge is expected. In the past, the solution was more dominated by what the student should learn, then how and by which method students acquire learning and the knowledge is processed. It is therefore entirely appropriate to clarify not only the extent to which knowledge and information is acquired in the school environment, but also how students learn to process this information and use, monitor, control and manage their own knowledge and understanding of the outside world. In pedagogical psychology, this aspect of self-management is contained mainly in the interpretation of the term metacognition[1] and self-regulation.

Self-regulated learning

The essence of self-regulated learning is the independent management and control of one's own learning process. On the basis of the reflection of this process the replacement of non-functional strategies and methods of teaching with functional and efficient ones occurs. The self-regulation of learning is viewed from different perspectives such as:

- the ability to use cognitive strategies (choice of necessary learning strategies);

[1] Gardner (1999) included metacognition among the important components of intelligent behavior and thereby extended the definition of intelligence by metacognition in the sense of understanding one's own thought processes and the ability to monitor and manage them.

- the ability to use metacognitive strategies (awareness of one's own learning activities, planning, evaluation and monitoring learning strategies);
- regulation of internal needs, interest in study, beliefs about its meaningfulness;
- linking cognitive, metacognitive and motivational components of learning.

The last view emphasizes the vital role of all three components in the process of the self-regulation of learning. The missing component may indicate that the student is not capable of the self-regulation of their own learning process. The process of self-regulated learning in actual fact, involves both the cognitive and non-cognitive sides of the regulation of the learning process, i.e., motivational and volitional processes.

Lennon (2010) further summarizes the contents of a number of definitions of the self-regulation of learning in the designation of self-regulation as a conscious process that has the potential to improve the learning curve and its prerequisite of success is mostly intrinsic motivation. Here, learning is seen as a living and current instrument enabling the approaching of the possibilities (potentiality) of the development of each student.

In general we can see a departure from the unilateral dedication of attention to external control (learning with the help of teachers, parents, textbooks, tools, etc.). We find the tendency to teach students to be able to learn themselves as well as possible. In this sense it is necessary to regard students as active and reactive beings capable of self-regulated learning. It has been demonstrated that the competence for self-learning is stored as a potentiality in each person (Mareš, 1998), which needs to be cultivated, i.e., broadened and deepened. For learners, this means that their activity is realized, that they are provided time for reflection, comparison, correction of errors and finding a way from not understanding to understanding. The role of the teacher in this process consists of creating appropriate conditions for the activation and maximum utilization of the potentialities of each student.

Over the last thirty years, the concept of self-regulated learning and its prospects was a part of the empirical research of Boekaerts (2002), Pintrich (2002), Zimmerman (2002), Winne and Hadwin (2008). The importance of understanding one's own process of learning and the ability to control it was emphasized. It can be stated that the concept of self-regulation is no longer unknown. Probably the most frequent techniques of measuring self-regulated learning are self-assessment questionnaires and scales. These tools provide information about how pupils and students explain their cognitive and non-cognitive learning processes that are otherwise difficult to observe. The measurement of self-regulated learning in research was further realized through tests, structured interviews, verbalization, observation and self-monitoring protocols, and computer-based learning environments.

Internationally, self-regulation research activities are embedded into traditional educational field environments, such as pedagogical psychology (Hammann & Stevens, 1998), biology, and social sciences (Lin & McKeachie, 1999), teacher education (McClendon, 1996) medical sciences (Barker & Olsen, 1995) as well as the non-traditional educational environment such as distance learning (Gibson, 1998; Joo, Bong, & Choi, 2000; Lynch & Dembo, 2004; Sankaran & Bui, 2001). The interest of researchers is further extended to determine the level of mutual relations of various factors of the self-regulated learning, ascertaining contextual features and the extent of a whole number of independent variables.

Motivation in self-regulated learning

It turns out that motivation is a key component of self-regulated learning, without which one´s cannot start this process and further develop it (Boekaerts, 2002; Montalvo & Torres, 2004; Pintrich, 2002; Švec et al., 2011; Wolters & Pintrich, 1998; Zimmerman et al., 2008). Controlling individual cognitive and metacognitive strategies would not be enough if the

student did not have a reason to learn, if they do not want to learn and if they could not motivate themselves enough.

In the process of the self-regulated learning we proceed from the assumption that an individual learns primarily for their own use, they evaluate the curriculum as important and useful, positively evaluate their own potential to perform the study activities and are confident of their own abilities necessary for successful study. The development of the self-regulated learning is basically conditioned by the transformation of extrinsic motivation into intrinsic motivation.

Based on the research results (Jakešová, 2014), we can cite three basic motivational components of the self-regulated learning process which Czech students perceive as motivationally significant. These include *Self-efficacy for learning and performance, Task value and Test anxiety.* Their primary significance is confirmed by a number of empirical research inquiries (Bandura et al., 2008; Boekaerts, 2002; Linnenbrink & Pintrich, 2003; Pintrich, 1999; Švec et al., 2011; Wolters & Pintrich, 1998), which took place mainly in the educational school environment.

Self-efficacy for learning and performance. It is one of the essential factors in the process of the regulation of motivation (Schunk & Ertmer, 2000). If the student has positive expectations about how they will fare in their studies, they develop a tendency to approach challenging tasks as a challenge, set challenging objectives in which they persevere, believe and strive to achieve them (Pajares, 2008). Failure attributed to influenceable causes in the form of inadequate efforts. Boekaerts (2005) adds that, as the students engage in a particular area of learning and how much effort they expend depends mainly on students' beliefs about their own proficiency in the field of learning, rather than vice versa. It means answering the question "Can I solve this task in this situation?" (Linnenbrink & Pintrich, 2003). Self-efficacy for learning and performance can also be defined as the belief that a student has about their own abilities in relation to the learning process. It also means the subjective evaluation of their own potentialities to perform certain activities by the students.

Task value. A special set of motivational concepts related to the value that students attach to a particular topic or subject area. The level of motivation of the self-regulated learning process increases, if the activity is carried out with personal interest and is perceived as meaningful and beneficial. This factor reflects the value that students attach to the subject matter. Students show a greater interest in the learning area where they deem it worthwhile. The conviction about the high value leads to a better engagement of students in their own learning, because the subject matter is perceived as interesting, beneficial and useful. According to Pintrich (1999) a student who attributes great importance to the task, is more internally-motivated, uses a wider range of self-regulatory strategy, trusts more and thrives better academically.

Test anxiety. The feelings of anxiety occur in the life of each individual. Test anxiety is a specific kind of anxiety related to specific stress conditions that can result from, for example, too high demands from parents and schools, competition, fear of failure and work under great pressure (Cassady, 2004). It is a distressing feeling that a student experiences during a difficult period in study, which is primarily the examination period of the semester.

Research shows a high degree of correlation between the extent of achievement of the self-regulated learning with school performance (Pintrich, 1999). This effect is also monitored in the present research. Finally, we investigate how students perceive their current academic success, how they are satisfied with this success and what they thought most often decides the degree of failure in study.

2. Research methodology

The main objective of the research is to determine the level of the monitored motivational aspects of the self-regulated learning on a selected sample of university students. Other goals included finding the dependency rate (connection) between the motivational aspects of self-regulated learning. Furthermore, we were interested in the differences between men and women according to age, field of study, year and form of study according to the current academic success. We also ascertained how students perceive their current success rate, how they are satisfied with this success and what according to them is decisive for failure in study.

Given the nature of the research questions the quantitative approach using exploratory methods (questionnaire technique) was elected. The research project was conceived as descriptive-relational. The descriptive part describes the studied reality of the research. The relational section reveals whether there are links between the studied phenomena and how close the relationship is. Null hypotheses were tested at a significance level of $\alpha = .05$. When verifying the conditions for the application of selected statistical methods (ANOVA, t-test for independent samples) the Kolmogorov-Smirnoff test and Shapiro-Wilk were used to verify data normality. The verification of the homogeneity of variances was tested through the Levene and Brown-Forsythe tests. Analyses were performed in SPSS v. 22 and AMOS v. 21.

2.1. Method

To determine the level of student motivation in the self-regulated learning the first part of the Motivated Strategies for Learning Questionnaire (MSLQ) was used, designed by the pedagogical psychologist and university professor Paul Pintrich and colleagues (1991). The development of the questionnaire lasted several years, during which validity and reliability were tested. The current basic version of the MSLQ questionnaire includes 81 items that are divided into two main areas: motivational beliefs and the use of learning strategies, each of which is composed of other subareas. Its first use was conducted in 1982 as part of the research methods of learning and teaching at universities, especially in the place of its origin, i.e., in the US educational environment.

The respondents recorded their answers on a seven-point Likert scale investigating not only the content of an attitude but also its approximate strength. The investigated variable assumes a value from 1-7 (from the least to the most truthful). The specific question of the motivational beliefs of students representing a six factor structure (intrinsic and extrinsic goal orientation, task value, control of learning beliefs, self-efficacy for learning & performance and test anxiety) were supplemented in the presented research by factual data about the respondents (gender, age, field, year and form of study, grades and the satisfaction of students with their current academic success).

Given that the MSLQ questionnaire has not yet been tested in the Czech Republic, its reliability and validity were examined (Jakešová, 2014). Furthermore, we present the testing of the reliability and validity of the MSLQ[2]. Based on the exploratory factor analysis three factors (in the range of 19 items) were extracted and explained 47% variance. Among the factors that Czech students perceive as important motivators include beliefs that students have about their own abilities, so-called *Self-efficacy for learning and performance* ("I expect that I will do well in studies," 6 items), *Task value* ("I believe that what I learn in study, I can use in practice," 6 items), and *Test anxiety* ("During the test I was very nervous," 7 items).

According to the results of the confirmatory factor analysis, 2 items of Self-efficacy for learning and performance were eliminated. The values indicate that the tested model (17 items) is on a satisfactory level (Anderson & Gerbing, 1984; Hoyle & Duvall, 2004); x^2 (df =

[2] The validation only covered an area designed to access motivation in self-regulated learning, i.e., motivational beliefs.

116, p = .000) = 225.138, x^2 / df = 1.941 and the GOF index reaches the values: RMR = .151, RMSEA = .058, CFI = .933, GFI = .917, AGFI = .891, PCLOSE = .128. The estimate of the internal homogeneity of the obtained factors (17 items) was determined using Cronbach's alpha coefficient calculation, indicating good reliability of the research instrument (ranged from .76 to .84).

The research pool consisted of 552 students in the helping professions aged 19-49 (mean age = 24 years, SD = 6.29). 40 men (7%) and 512 women (93%) were represented. The age of the respondents was divided into three age categories. The most commonly represented category were students aged 21 years or less (42%), followed by aged 22-25 years (38%) and the following age group 26 years and over (20%). The most numerous group of the sample were full-time students (76%) in the third year of bachelor's degree study (27%). The field of study was divided into four categories for the better interpretation of results, which are divided into the medical field (37%), social and educational field (36%), teaching discipline (18%), and language study (9%). Table 1 presents the structure of the research group.

Table 1. Demographic details of the samples by gender and year of study

	Gender		Year of study				
	Male	Female	1st year of Bachelor's study	2nd year of Bachelor's study	3rd year of Bachelor's study	1st year of Master's study	2nd year of Master's study
N	40	512	146	106	151	109	40
%	7	93	26	19	27	20	7

Note: N = number of respondents; % = relative frequency.

The academic performance of students was divided into three categories for statistical calculations, in which above-average results were represented by achieving a 1.5 grade point average (11%), the average results were represented by a grade point average of 1.6 to 2.5 (65%) and a below-average school performance corresponded to a study average of 2.6 and higher (17%).

3. Results

This chapter presents only the most important results of the survey, which aimed within 552 students of various forms of tertiary education in the humanities field in the Zlin region, to determine the level, differences and correlation of the monitored motivational aspects of self-regulated learning (Self-efficacy for learning and performance, Task value and Test anxiety) and the monitored dependent variables (age, gender, field, form and year of study and grades). Finally, we investigate how students perceive their current academic success, how they are satisfied with this success and what they thought what was most often decisive in the failure of study.

The descriptive statistics (see Figure 2) show that students achieve an average level of total motivation (average of all three factors[3]) in the process of self-regulated learning (Mean = 4.499, SD = .730). This level is located above the center position of the seven-point scale used in the questionnaire and the curve has a uniform bell shape. The score ranged from 2.29 (one respondent) to 6.71 (one respondent). The examined dependent variable takes the value 1 (least truthful) to 7 (most truthful). Achieving higher values is interpreted as positive, i.e., the student perceives the given area as motivationally valuable in the process of the self-regulation of learning. f

[3] The area of the Test anxiety (originally negative factor) was recoded for statistical data processing so that the trend representing a higher motivation was allowed in the case of rising values achieved.

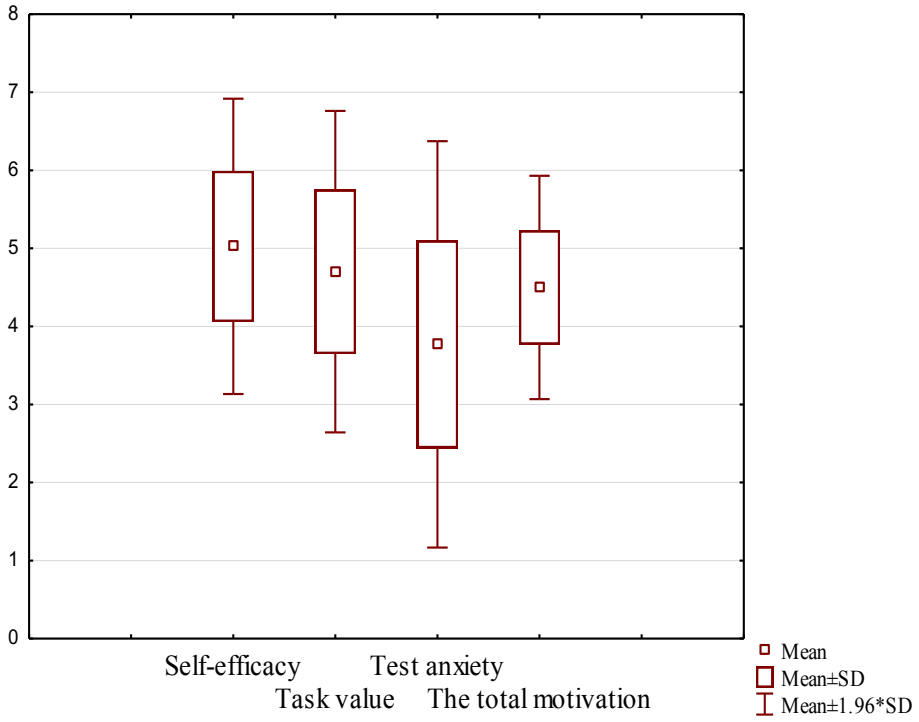


Figure 2. A comparison of the average rate of motivational aspects

The highest values are achieved by personally perceived ability (Mean = 5.026, SD = .965), followed by the value of the curriculum (Mean = 4.701, SD = 1.051) with proportionate experience of test anxiety (Mean = 3.771, SD = 1.328). In other words, students on average positively viewed their own potential to perform school activities and are confident about their own abilities needed for study. They perceive the curriculum as personally interesting and useful for further practice and during the challenging period of study, which is primarily the examination period of the semester, they experience a reasonable degree of test anxiety.

When calculating the distribution of the overall rate of frequency of the monitored motivational aspects of self-regulated learning 15% of students achieved an above-average level of motivation in the process of self-regulated learning (Mean + SD; Mean > 5.230). The largest number of students (70%) achieved an average level (3.768 < Mean < 5.229) and the remaining 15% of students are move in below average levels of total motivation (Mean – SD; Mean < 3.769 or less).

Based on the correlation (see Table 2) a positive mutual relationship was found between the Task value and Self-efficacy for learning and performance (rs = .337, N = 552, p < .0005). It can therefore be said that students who evaluate the curriculum as meaningful and useful also positively evaluate their own potential in the performance of school activities, and vice versa. The remaining correlation coefficient between Self-efficacy for learning and performance and Test anxiety (rs = .164) is too low for meaningful interpretation.

Table 2. *The correlation of the motivational aspects of self-regulated learning*

	Mean	SD	1	2	3
Self-efficacy for learning and performance	5.026	.965	1.000	.337 **	.164 **
Task value	4.701	1.051		1.000	- .081
Test anxiety	3.771	1.328			1.000

Note: ** p < .01

To get an idea of what percentage of variance the two variables contributed, we can use the calculation r^2, the coefficient of determination (Pallant, 2010). In our case (rs = .337) the variables achieve 11% of the shared variance. There was no evidence of a very large overlap of these two variables. In other words, the Task value helps explain the 11% variance of the total score of the Self-efficacy for learning and performance and vice versa.

The results of the analysis of the differences in the level of motivation in the process of the self-regulated learning among **men** and **women** revealed that gender significantly influences the perception of the task value and test anxiety. Women perceive the curriculum as more valuable and according to the assumptions experience a higher rate of test anxiety than men. Men and women achieve similar beliefs about their own abilities needed for study and are identically academically motivated. However, current research shows that there are significant differences in the level of self-regulated learning between men and women. In some studies, it is argued that women achieve higher levels of motivation than men (Zimmerman & Martinez-Pons, 1990), others confirm that the opposite is true (Ryan & Pintrich, 1997).

We confirmed (see Figure 3) that there are statistically significant differences in the perception of the self-efficacy for learning and performance of students, depending on their **age**. At the base of a detailed analysis, these differences were found among younger students aged 21 years or less, and older students aged 22 to 25 years. It means that as we age, the level of self-efficacy for learning and performance slightly increases. We can also say that first-year students are less confident in their own abilities needed for study. The findings of the simultaneous increase in self-efficacy for learning and performance with the increasing year of the study is also related with this statement (see Figure 4).

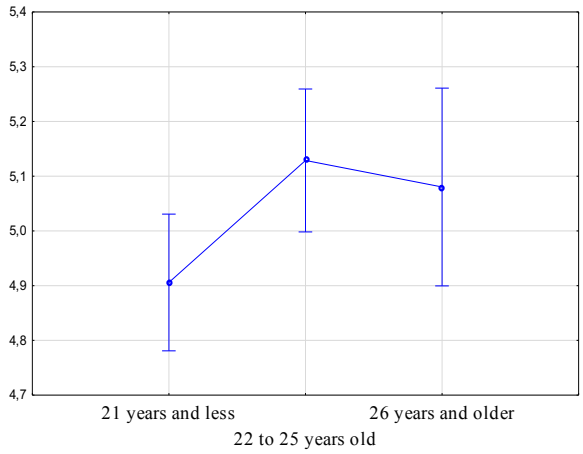


Figure 3. Comparison of self-efficacy by age

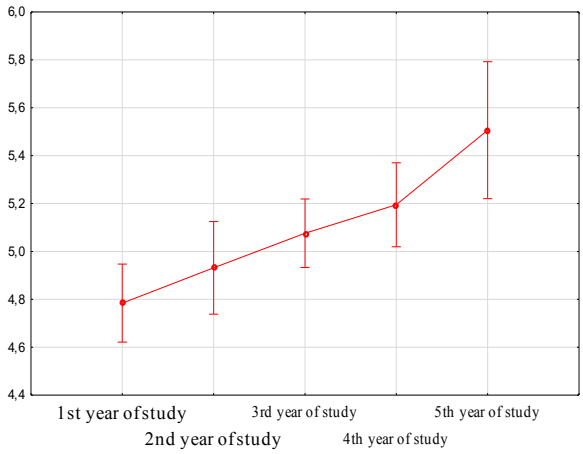


Figure 4. Comparison of self-efficacy by year of study

Further, significant differences in self-efficacy for learning and performance were found according to the **field** of study. Students in socio-educational fields reached the highest values of self-efficacy. In other words, students the best perceive their own potential to perform school activities and are confident about their own abilities needed for study. The results relate to the finding that students in this field also experience the lowest levels of test anxiety, achieve the best grades and are generally the most motivated in the process of self-regulated learning. On the contrary, the lowest motivation was attained by students of medical health fields with lowest grades. Together with linguistics students they have the least confidence and rate their studies as the least useful. Test anxiety is experienced most often by students of teaching fields.

The most valuable is the study for students of teaching disciplines. Studying full-time and in the combined **form** of study does not have a significant influence on the level of mastery of motivational components of the self-regulated learning. **The year of study** also affects students experiencing test anxiety and the values of total motivation. The students are in the final years of study more motivated, achieve a better academic performance, better manage their test anxiety and feel more compliant in relation to the demands that are placed on the students throughout their course of study.

The respondents achieved the average **academic performance** (Mean = 1.89, SD = .438). The level of self-efficacy for learning and performance, task value and the overall student motivation significantly affect academic success (see Figure 5). The highest values of the listed motivational aspects are achieved by students with above-average academic results and the lowest values were found, as expected, with students with below-average academic success. However the assumption of the lower level of experiencing test anxiety by academically more successful students was not confirmed.

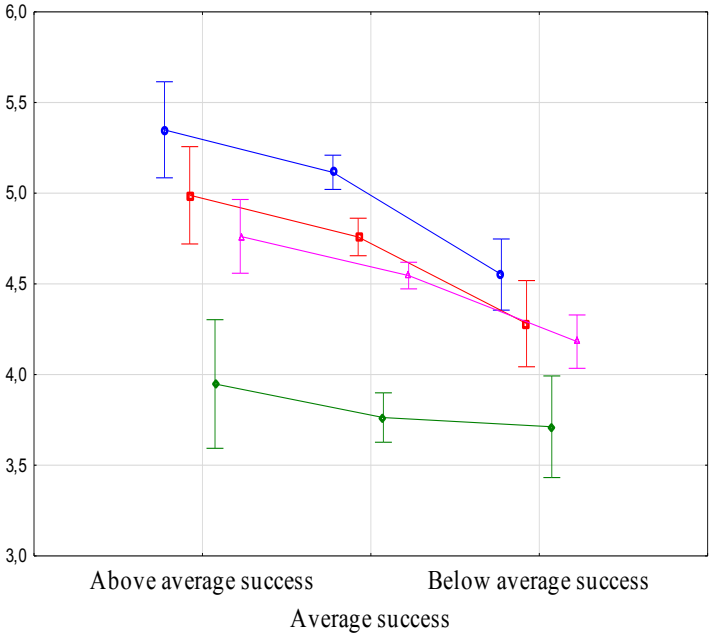


Figure 5. The level of motivational aspects according to academic success

Based on an analysis of differences in academic success, we found that women achieve better academic success than men, and academic performance in each grade level gradually increases. There was no evidence, however, that students who study full-time were more academically successful than students who study in the combined form of study.

According to the results, it appears that the students **perceive** themselves as rather successful (Mean = 4.534, SD = 1.117) and are satisfied in their current academic **success** (Mean = 4.457, SD = 1.367). Older students of the follow-up master's study program, who are also satisfied with their academic success than younger bachelor's degree students, perceive themselves as more successful.

Interesting results were obtained in a study analyzing the possible **causes of academic failure.** According to descriptive statistics, students most often perceived a lack of effort and determination as the cause of academic failure (57%), which, according to Weiner's approach is an internal attribute (related to internal factors of individuals), controllable (the individual can somehow influence them) and unstable (relatively changing in time). Based on further

analysis it was found that younger full-time students perceive a lack of effort and determination as a possible source of academic failure while older students aged 26 and over in the combined form of study conversely mostly attributed academic failure to an unfortunate series of coincidences (see Table 3). First-year students also perceive the demands of study as a limiting attribute of academic failure.

Table 3. *Dependence of attributes of academic failure by age and form of study*

Attribute	Age category			Form of study	
	< 21 years	22–25 years	26 years <	full-time	combined
Ability	**0**	**0**	**0**	**0**	**0**
Effort and determination	+	+	– – –	+ + +	– – –
Difficulty	**0**	**0**	**0**	**0**	**0**
Coincidence	–	–	+ + +	– –	+ +

Note: 0 = not statistically significant; + or - = Significant difference at the 5%; ++ or - - = Significance from .1% to 1%; +++ or - - - = Probability of occurrence of accidental deviations is .1% or less.

According to the specialization, the difficulty of study is perceived as the most common cause of academic failure, by students in the medical field. Conversely, students of the educational field least often choose this attribute. According to these students, a lack of ability was most often decisive. Additionally, for students of the teaching field a lack of effort and determination is critical.

4. DISCUSSION AND CONCLUSION

Self-regulated learning can be developed as early as when entering school (age between 6 and 12 years), but more comprehensive and deeper-based practices are a matter of a later age. For pupils in higher grades of secondary school and university students the spectrum of monitored variables can be richer, as students in the course of their development are maturing and gaining better control over their thinking and learning (Sternberg, 2002).

The presented work focused on the issue of motivation in the process of the self-regulated learning of students, which based on the research appears as the strongest factor in the development of self-regulated learning. We assume that the systematic development of self-regulation is becoming necessary, given that it goes beyond school education and encourages students toward their own responsibility, autonomy and personal development.

The main objective of the submitted study was based on the optimization of tools to determine the level of monitored motivational aspects of the self-regulated learning on a sample of 552 students from various forms of tertiary education of the humanities field. The earlier process of verifying the validity and reliability of the MSLQ questionnaire brought a number of different factors, rather than the theory of Pintrich (1999), from which the construction of the instrument is based. The mentioned findings of an exploratory factor analysis determined the hypotheses about the number and nature of factors. Their validity was further verified using the confirmatory factor analysis.

Due to the placement of the instrument in a new educational environment the achieving of different numbers of items and finding differences in their terms from the original version occurs frequently. The expectation that not all items of the original six-factor motivation beliefs structure of the MSLQ questionnaire will optimally fit in the Czech environment was confirmed. On the basis of the factor analysis, three original factors that Czech students perceive as important motivators were extracted.

Through self-report techniques we have tried to clarify the degree of dependence (connection) between the individual motivational aspects of the self-regulated learning, which are self-

efficacy for learning and performance, task value and test anxiety. Given that there is little consensus as to what most influences the motivation in the process of self-regulated learning, we decided to focus on finding differences in this level according to gender, age, field, year and form of study and grades. Finally, we investigated how students perceive their current academic success, how they are satisfied with this success and what they thought most often decides the degree of failure in study.

The results of the analysis showed that the level of the motivational aspects in the process of the self-regulated learning of students is significantly related to academic success. We also found that other variables are reflected in the level of motivation in the process of learning, usually represented by the field of study and the year of study. Self-efficacy for learning and performance is perceived differently by older and younger students. Men and women differ in their perception of the task value and the experience of test anxiety. Overall, students perceived themselves as more successful and are satisfied with their current academic success.

Targeted intervention aimed at academically weaker students characterized by lower levels of motivation seems to be important. According to the results, this group consists mainly of first-year students, who feel the least personally capable, the curriculum is perceived as demanding and frequently experience test anxiety. The lowest academic success is achieved by student-linguists, who also achieved the lowest levels of overall motivation. Together with the students of health professions they have the least trust and rate their studies as the least useful. Men are less academically successful and perceive their actual academic success as worse than women.

It should be noted that although a significant portion of the previous work (Jakešová, 2014) was devoted to the preparation of valid and reliable instruments, it is still the subjective testimony of participating respondents and the interpretation of results is thus limited. The results of the research and its posed assumptions can only apply to the basic group of university students in the helping professions. In addition, the representation (absolute frequency) of respondents in each group was uneven, given the prevailing interest of young women in humanities-oriented disciplines. However, we can say that this opens up the space for important initiatives affecting school motivation and academic success. The stated results may find application in modifying the training of university students.

REFERENCES

Anderson, J. C., & Gerbing, D. (1984). The effect of sampling error on convergence, Improper solutions, and goodness-of-fit indices for maximum likelihood confirmatory factor analysis. *Psychometrika, 49*, 155–173.

Bandura, A. (Ed.). (2008). Longitudinal analysis of the role of percieved self-efficacy for self-regulated learning in academic continuance and achievement. *Journal of Educational Psychology*, *100*(3), 525–534.

Barker, J. R., & Olsen, J. P. (1995). Medical students' learning strategies: Evaluation of first year changes. *Journal of Educational Psychology, 80*, 321–331.

Boekaerts, M. (2002). *Motivation to learn*. Geneva: International Bureau of Education.

Boekaerts, M. (2005). Motivace k učení. In H. J. Walberg (Eds.), *Efektivní učení ve škole* (s. 55–76. Praha: Portál.

Cassady, J. C. (2004). The Impact of Cognitive Test Anxiety on Text Comprehension and Recall in the Absence of External Evaluative Pressure. *Applied Cognitive Psychology, 18,* 311–325.

Gardner, H. (1999). *Dimenze myšlení*. Praha: Portál.

Gibson, C. C. (1998). The distance learners' academic self-concept. In C. C. Gibson (Ed.), *Distance Learners in higher education: Institutional responses for quality outcomes* (s. 65–76). Madison, Wisconsin: Atwood Publishing.

Hammann, L. A., & Stevens, R. J. (1998). *Metacognitive awareness assessment in self-regulated learning and performance measures in an introductory educational psychology course*. Washington D. C.: ERIC Clearinghouse microfi ches. ERIC Document Reproduction Service No ED 424249.

Hoyle, R. H., & Duvall, J. L. (2004). Determining the number of factors in exploratory and confirmatory factor analysis. In D. Kaplan (Ed.), *The SAGE Handbook of Quantitative Methodology for Social Sciences* (s. 301–315). Thousand Oaks, CA: Sage.

Jakešová, J. (2014). The validity and reliability study of the czech version of the motivated strategies for learning questionnaire (MSLQ). *The New Educational Review, 35*(1), 54–65.

Joo, Y., Bong, M., & Choi, H. (2000). Self-efficacy for self-regulated learning, academic self-efficacy and internet self-efficacy in web based instruction. In J. C. Liang, & C. C. Tsai, Internet self-efficacy and preferences toward constructivist Internet based learning environments: A study of pre-school teachers in Taiwan. *Educational Technology & Society, 11*, 226–237.

Kulič, V. (1992). *Psychologie řízeného učení*. Praha: Academia.

Lennon, J. M. (2010). Self-regulated learning. In J. A. Rosen (Ed.), *Noncognitive Skills in the Classroom: New Perspectives on Educational Research* (s. 69–90). Research Triangle Park: RTI.

Lin, Y. G., & McKeachie, W. J. (1999). *College student intrinsic and / or extrinsic motivation and learning*. Washington D. C.: ERIC Clearinghouse microfi ches. ERIC Document Reproduction Service No ED 435954.

Linnenbrink, E. A., & Pintrich, P. R. (2003). The role of self-efficacy beliefs in student engagement and leasing in the clasroom. *Reading & Writing Quarterly, 19*(2), 119–137.

Lynch, R., & Dembo, M. (2004). The relationship between self-regulation and online learning in a blended learning context. *International Review of research in Open and Distance Learning, 5*(2), 1–12.

Mareš, J. (1998). *Styly učení žáků a studentů*. Praha: Portál.

McClendon, R. C. (1996). Motivation and cognition of preservice teachers: MSLQ. *Journal of Instructional Psychology, 23*(3), 216–221.

Montalvo, F. T., & Torres, M. C. G. (2004). Self-regulated learning: Current and future directions. *Electronic Journal of Research in Educational Psychology, 2*, 1–34.

Pajares, F. (2008). Motivation role of self-efficacy beliefs in self-regulated learning. In D. Schunk, & B. J. Zimmerman (Eds.), *Motivation and Self-Regulated Learning: Theory, Research, and Applications* (s. 111–140). Mahwah, NJ: Lawrence Erlbaum Associates.

Pallant, J. (2010). *SPSS survival manual: A step by step guide to data analysis using SPSS*. Maidenhead, Berkshire: Open University Press.

Pintrich, P. R. (1999). The role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research, 31*(6), 459–470.

Pintrich, P. R. (2002). The role of metacognitive knowledge in learning, teaching, and assessing. *Theory Into Practice*, *41*(42), 219–226.

Pintrich, P. R. (Ed.). (1991). *A manual for the use of the Motivational Strategies for Learning Queastionnaire (MSLQ)*. Ann Arbor: University of Michigan, School of Education.

Ryan, A. M., & Pintrich, P. R. (1997). Should I ask for help? The role of motivation and attitudes in adolescents' help seeking in math class. *Journal of Educational Psychology, 89*, 329–341.

Sankaran, S. R., & Bui, T. (2001). Impact of learning strategies and motivation on performance: A study in web based instruction. *Journal of Instructional Psychology, 28*(3), 191–198.

Schunk, D. H., & Ertmer, P. A. (2000). Self-regulation and academic learning: self-efficacy enhancing interventions. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of Self-Regulation* (s. 631–650). San Diego, CA: Academic Press.

Sternberg, R. J. (2002). *Kognitivní psychologie*. Praha: Portál.

Švec, V. (Ed.). (2011). Development of the Czech version of the questionnaire of self-regulated learning of students. *The New Educational Review, 26*(4), 33–44.

Winne, P. H., & Hadwin, A. F. (2008). The weave of motivation and self-regulated learning. In D. Schunk, & B. J. Zimmerman (Eds.), *Motivation and Self-Regulated Learning: Theory, Research, and Applications* (s. 297–314). Mahwah, NJ: Lawrence Erlbaum Associates.

Wolters, Ch. A., & Pintrich, P. R. (1998). Contextual differencies in student motivation and self-regulated learning in mathematics, English, and social studie classrooms. *Instructional Science, 26*, 27–47.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, *41*(2), 64–70.

Zimmerman, B. J. (Ed.). (2008). *Motivation and self-regulated learning: Theory, research, and applications*. New York, London: Routledge.

Zimmerman, B. J., & Manuel Martinez-Pons. (1990). Student differences in self-regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use. *Journal of Educational Psychology, 82*(1), 51–59.

NEW ENTREPRENEURS CREATION AND THE SURVIVAL OF THE CERAMIC ENTERPRISE

Phainphin KOWUTTIPHONG
Wanno Fongsuwan
King Mongkut's Institute of Technology Ladkrabang (KMITL)
Thailand
p_kowuttiphong@hotmail.com

ABSTRACT
The world ceramic market is currently estimated at $369 billion, projected to rocket to $705 billion by 2025. Since 1980, large corporations, led by aerospace companies, have amassed over 8,000 patents in structural ceramics. It is even being 3-D printed. These days, ceramic means much more than pottery, as innovative researchers are making the material wearable and power producing as well. In Thailand, however, the ceramic industry is dispersed and lacking in many modern technologies with of innovation and marketing being a barrier to competitiveness and survivability with concerns about new entrepreneurs as the hope of survival, are lack of interest and knowledge of innovativeness for future prospects for growth. Therefore, the researchers wanted to undertake a study to research how innovation, business strategies and performance affect the Thai ceramic industry's survival.

INTRODUCTION
According to Korea's Ministry of Trade, Industry and Energy, the scale of world ceramic market, currently estimated at 440 trillion won ($369 billion), will rocket to 840 trillion won ($705 billion) by 2025. Ceramic is a material made of elements and metals extracted from soil and includes products such as glass, tile, and cement but it is now being spotlighted as a cutting- edge substance used in advanced technologies in energy, IT, and the bio and medical industries (Korea Joong Ang Daily, 2015). Since 1980, large corporations, led by aerospace companies, have amassed over 8,000 patents in structural ceramics and consolidated capabilities internally through acquisitions and mergers (Vicari & Schiavo, 2015).

The advanced ceramics market in the Asia-Pacific region is projected to register one of the fastest-growths mainly due to the presence of emerging economies such as China and India as well as emerging activities in the electronics, transportation, energy, and industrial sectors. Asia-Pacific is the biggest market for advanced ceramics, and accounted for a share of around 40% of the global market share in terms of value in 2014 which was majorly contributed by China (MarketsandMarkets, 2014).

The electronics industry is one of the largest end-user industries of advanced ceramics and this trend is projected to continue in the near future. More than 80 percent of up-to-date smartphone parts are ceramic which enables electric current to consistently flow on electronic circuits (Korea JoongAng Daily, 2015).

Asia-Pacific is the biggest market for the electronics industry, and accounted for a share of more than 40% of the total market size in 2014. It is also estimated that China followed by Japan, South Korea, and India are the fastest growing markets of advanced ceramics for the electronics industry in the region (MarketsandMarkets, 2014).

The U.S. and China are at the forefront of advanced ceramics consumption, while Germany, France, Japan, and U.K. are other key markets for advanced ceramics consumption. China is the key market in Asia-Pacific, consuming more than half of the demand for the advanced ceramics, followed by Japan, South Korea, and India where consumption is growing at a steady rate. Increase in the consumption of advanced ceramics for monolithic ceramics, ceramic matrix composites and ceramic coatings have been observed in Asia-Pacific due to continued industrialization and rise in the manufacturing sector of the region. Medical industry is projected to be the fastest-growing application segment followed by military & defence between 2015 and 2020 (MarketsandMarkets, 2014).

The Korean domestic market is expected to expand threefold in a decade. In particular, high-tech ceramic's share of the ceramic market is expected to jump to 70 percent. However, advanced businesses like Kyocera, Murata and TDK in Japan and Corning in the United States with fundamental technologies are far ahead of Korean companies (Korea JoongAng Daily, 2015).

Ceramics is also used in construction but that too is both rapidly and radically changing. According to Tikul and Srichandr (2010), ceramic tiles are one of the most widely used materials in both commercial and residential buildings in Thailand. Presently the global ceramic tile market is expected to reach over $125 billion by 2020 with Thailand having moved to the number one spot globally in the production of tile.

Ceramic tile dominates the industry, with demand estimated at over 70 million tons in 2014. Growth and development in the construction industry is expected to be the primary growth driver due to urbanization, higher per capita income, population increases and improving economies. Housing and construction are the largest application segments, valued over at $65 billion in 2014. Aesthetic and durability advantages of these products are expected to drive demand in the civil construction sector over the next seven years (CiAdvanced, 2015).

Within the AEC (ASEAN Economic Community), Thailand's SCG Group acquired Vietnam's leading ceramic tile manufacturer, Prime (SCG, 2014) which moved SCG Group into the number one spot worldwide with a ceramic tile production capacity of 225 million square meters per annum (a 50% increase from 2012). This compares to the U.S.A.'s second place Mohawk Industries, with a total capacity of 220 million square meters (ASEAN Ceramics, 2013). Thailand's SCG Group now has expanded to 29 factories within the AEC, including 17 in Thailand, 4 in Indonesia, 1 in the Philippines and 7 in Vietnam with a total workforce of 14,000 people, generating 650 million euros in the tile business alone (Ceramic World Review, 2014).

In Thailand however, the ceramics industry is mostly made up of small to medium sized enterprises dispersed in different provinces across the country. These include the provinces of Saraburi, Nakhon Ratchasima, Lampang, Chiang Mai, Ratchaburi, Samut Sakhon, Nonthaburi, Chon Buri and Rayong. The industrial ceramics industry is one that is important both to Thailand and its economy which is continuously supported and promoted by the government. Thus, the survival of the ceramic enterprise depends on the new entrepreneurs creation. They need to have sufficient understanding of innovativeness and strategic planning method in developing products with new innovation and creating an effectiveness of the production process.

From the above data, researchers decided to undertake a study using a structural equation model to develop a greater understanding of the importance of the Thai industrial ceramic industry and the variables effecting its survival. Thailand's large and geographical dispersed ceramics factories are mostly small to medium sized with preliminary data indicated 758 registered businesses nationwide, with a heavy concentration of 172 factories located in the northern, mountainous province of Lampang.

The study will therefore focus on the variables that influence organization survival. There are significant changes underway, heavily influenced by environmental regulations and technological innovation such as 3-D printing. Survival and sustainability in a highly competitive environment is no easy mission, therefore the reason for this research.

THE STUDY

Innovation

Innovation is defined as adding something new to an existing product or process. Drucker (1985) argued that innovation is the tool of entrepreneurship. In addition, both innovation and entrepreneurship demand creativity. No entrepreneur or enterprise, however successful and big, can continue to hold a place of leadership unless it recognizes that modern business operates in a world of galloping change which creates new problems, risk and opportunities and for which they have to mobilize the enterprise's resources before changes make their impact felt (Okpara, 2007).

Freeman and Soete (1997) elaborated on innovation effects on economics and stated that innovation is an essential condition of economic progress and a critical element in the competitive struggles of enterprises and nation states. Innovation is also critical for those who wish to accelerate or sustain the rate of economic growth in their own and other counties and is critical for the long-term conservation of resources and improvement of the environment.

The cutting edge of structural ceramics research is carried out by only a handful of players and they tightly control R&D information, stifling the ability and motivation of outside start-ups to enter the field. Still, innovation bubbles

beneath the surface, driven by the need for process disruption.
This is consistent with ceramic research innovation from UCLA engineers which hope to create a ductile ceramic that is hard, able to experience extreme heat and experience low corrosion. While the hardness of steel may withstand pressures of a gigapascal or two, transition- metal carbides can take up to a whopping 20 gigapascals. And they won't melt until they reach over 6,300ºF (3500ºC) — versus steel's melting point around 2,700ºF (1500ºC). (Wasserman S, 2015)

On a more 'down to earth' note, Thailand's SCG Group with 51,000 employees globally and one of the world's largest ceramic product producers is also focusing on research and development (R&D) and has steadily increased its high-value added (HVA) products and services which have an average margin 8% higher than normal products. HVA products now account for 37% of the group's total revenue, up from just 4% a decade ago (Wiriyapong, 2015). It also acquired technology in United States and Europe to support its innovation drive and since the group projects HVA products to eventually account for half of its products; it's recruiting more PhD-level staff, including those in China, to step up innovation research.

This is consistent with Lemon and Sahota (2004) that states just as 'innovate or die' is one of the mantras of today's economy, knowledge is increasingly recognized as the key underpinning resource and that organizational learning plays an important part in ensuring that knowledge repositories are continually replenished and updated to enable efficient responses to changes in its competitive environment.

According to the study's research and examination of the literature, it was determined that there were 3 key manifest variants or observable variables related to innovation. Many scholars have studied these manifest variants or observable variables effects on innovation from which the researchers have synthesized the research to include product innovation, process, innovation and marketing innovation in this study (Dachyar & Fatkhurrohman, 2011; Mutlu & Er, 2003; Seedee, Sulaiman, & Ismail, 2009; Chong, Chan, Ooi, & Sim, 2011).

Business Strategies
Business strategy refers to the tools that companies use to judge the competition in the market compared to its competitors (Meskendahl, 2010) which is the competitive strategy. Business strategy, or corporate strategy, is the fabric of verbal and non-verbal interactions in organizations setting the behavioural norms for the organizations long-term orientation (Johnson, Whittington, Scholes, & Pyle, 2011). As such strategy should affect daily actions but only or mostly those related to the organizations expectations of its major activities on a more distant horizon (Porter, 1996) and stated that a nation's competitiveness depends on the capacity of its industry to innovate and upgrade.

In Porter's (1985) earlier book on Competitive Strategy the concept of generic strategies-cost leadership, differentiation, and focus-was introduced which represented the alternative strategic positions in an industry. This is consistent with Tanwar (2013) which discussed 'generic strategies' stated that basically, strategy is about two things: deciding where you want your business to go, and deciding how to get there. It was indicated that generic strategies include 'overall cost leadership', 'differentiation', and 'focus' (Tanwar, 2013) but if firms try to maintain cost leadership as well as differentiation at the same time, they may fail to achieve either.

Lo and Han (2014) discussed the competitive paradigm between globalization and local Chinese development in the ceramic tile industrial cluster, based on the Porter's theory in exploring the factors of the global competitiveness. They concluded that firms have to shape strategic thought and be flexible so that companies can quickly respond to challenges of nearby competitors.

According to the study's research and examination of the literature, it was determined that there were 3 key manifest variants or observable variables related to business strategies.

Many scholars have studied these manifest variants or observable variables effects on innovation from which the researchers have synthesized the research to include cost leadership strategy, differentiation strategy and focus strategy in this study (Johnson, Whittington, Scholes, & Pyle, 2011; Lo, & Han, 2014; Meskendahl, 2010; Porter, 1985; Porter, 1990; Porter, 1996)

Firm Performance

De Waal (2007) studied the identifying factors that determine the continuous success of a high performance organization (HPO) and identified after an extensive review of the literature some common themes which included: sustained growth; better financial and non-financial performance compared to its peer group; long-term orientation; and finally, better results over a period of at least five years.

Kaplan and Norton (1992) revolutionized conventional thinking about firm performance metrics with the balanced scorecard. When Kaplan and Norton first introduced the concept in 1992, companies were busy transforming themselves to compete in the world of information; their ability to exploit intangible assets was becoming more decisive than their ability to manage physical assets. The scorecard allowed companies to track financial results while monitoring progress in building the capabilities needed for growth. There were 4 main processes of which, the third-business planning-enabled companies to integrate their business plans with their financial plans.

This is consistent with research by Škrinjar, Bosilj-Vukšić, and Indihar-Štemberger (2008) which showed that business process orientation leads to better non-financial performance and indirectly to better financial performance.

According to Zuriekat, Salameh, and Alrawashdeh (2011), performance measurement systems are considered information systems that are used to evaluate both individual and organizational performance. In their study, they investigated the use of a variety of financial and non-financial performance measures identified in the literature to measure performance measurement systems and showed that companies benefit from performance measurement systems that incorporate a wide range of financial and non-financial performance measures.

Hilman and Kaliappen (2014) observed the psychometric properties of the organizational strategies and performance scales which were stated to consist of competitive strategy, market orientation, innovation strategy and organizational performance. It was determined that organizational strategies and performance measures can be useful in examining strategy and performance.

According to the study's research and examination of the literature, it was determined that there were 2 key manifest variants or observable variables related to firm performance. Many scholars have studied these manifest variants or observable variables effects on innovation from which the researchers have synthesized the research to include financial performance, and non-financial performance in this study (de Waal, 2007; Kaplan & Norton, 1992; Škrinjar, Bosilj-Vukšić, & Indihar-Štemberger, 2008; Hilman & Kaliappen, 2014; Zuriekat, Salameh, & Alrawashdeh, 2011).

Organization Survival

Organizational survival has been argued to be a primary goal or objective every organization should have. In a survey of corporate board member policies and practices by Korn/Ferry International, management succession was stated as the third most important issue on the heels of financial results and strategic planning (Rothwell, 2010).

Bennet and Bennet (2011) proposed a new model for organizations that enables them to react more quickly and fluidly to today's fast-changing, dynamic business environment: the Intelligent Complex Adaptive System (ICAS). ICAS is a new organic model of the firm based on recent research in complexity and neuroscience, and incorporating networking theory and knowledge management, and turns the living system metaphor into a reality for organizations. There are eight characteristics of the ICAS: organizational intelligence, unity and shared purpose, optimum complexity, selectivity, knowledge centricity, flow, permeable boundaries, and multi-dimensionality. Technology enables connectivity, and the ICAS model takes advantage of that connectivity by fostering the development of dynamic, effective and trusting relationships in a new organizational structure.

Tolulope (2009) discovered in Nigeria that the ceramics industry's spatial distribution of the industries as well as the performance is determined by different factors. Gender lopsidedness was observed among ceramic wares producers with time commitments to production by manufacturers not long enough for firm profitability. Additionally, the production and the management systems of small□scale ceramic industries in South-Western Nigeria are hindered by many other factors.

According to the study's research and examination of the literature, it was determined that there were 3 key manifest variants or observable variables related to organization survival. Many scholars have studied these manifest variants or observable variables effects on innovation from which the researchers have synthesized the research to include financial management, management and succession planning in this study (Bennet & Bennet, 2011; Rothwell, 2010; Tolulope, 2009).

From the above conceptual review and development, the researchers have developed the following 5 hypotheses for the study (Figure 1):

Proposed Research Hypotheses Model
H1: Innovation has a direct effect on Organization Survival.
H2: Innovation has a direct effect on Firm Performance.
H3: Business Strategies have a direct effect on the Firm Performance.
H4: Business Strategies have a direct effect on Organization Survival.
H5: Firm Performance has a direct effect on Organization Survival.

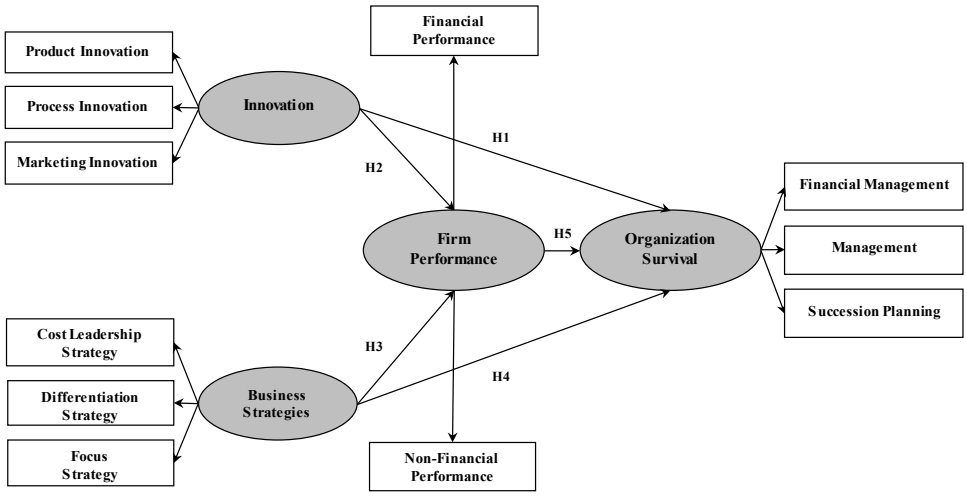


Figure 1: Conceptual Framework

FINDINGS

Methodology

This research aims to model the structure of the factors influencing the survival of the industrial ceramics industry of Thailand, so the researchers wish to determine the details and procedures from the methods below:

The approach used in the study

For this study the researchers used both quantitative and qualitative research from both primary and secondary data. The researchers have determined the following steps for this study:

Secondary Data Research

This was comprised of published research, internet materials, media reports, and data which has been cleaned, analyzed and collected for a purpose other than the needs assessment, such as academic research or an agency or sector specific monitoring reports (Acaps, 2012).

Therefore, secondly data is a research tool for development of the variables and the structural equation model in understanding the survival determinants of the Thai ceramic industry.

The Quantitative Research Study

Quantitative research will be performed from the primary data by collecting a questionnaire from the target sample. The questionnaire to be used to collect data is structured and written and a realistic, easy-to-understand format with

are deemed to be reliable and reasonable. Further reliability validation will be undertaken as follows:

Review of the questionnaire.

This was conducted by academic scholars to validate the investigation questions and the use of rhetoric and the simplicity and comprehension of the questions. During the question trial period, questions undergo a continual rigorous review and inspection for their clarity and ability to the meet the objectives of the research and to carry out data collection and statistical analysis.

Quantitative research.

Schumacker and Lomax (2010) stated that Structural Equation Modeling (SEM) uses a variety of models to show the relationships between observed variables with the same basic goal of providing a quantitative test of a theoretical model hypothesized by a researcher. Meldrum (2010) further stated that a sample size smaller than 100 should not be used in SEM as it is unreliable. This is consistent with other research on the 'Rule of 100' including Gorsuch (1983), Kline (1979), (MacCallum, Widaman, Zhang & Hong, 1999). No sample should be less than 100 even though the number of variables is less than 20 (Gorsuch, 1974; in Arrindell & van der Ende, 1985). Therefore, using a factor of 20 for each of the 11 variables from the research survey, it is anticipated that a total of 220 samples from Thai industrial ceramic firms are adequate to assure a reliable sample size (Schumacker & Lomax, 2010).

Qualitative research.

Qualitative research will involve confirming the model of the quantitative research. It is a collection of interviews with industry professionals involved in the ceramic industry including entrepreneurs, small and medium sized enterprises (SMEs) and those involved in industry promotion. Qualitative Research is to be undertaken through the use of in-depth interviews with those involved in innovation, including plant managers, production managers and engineering managers. To confirm the model of quantitative research, the sample size for this research will be 10 individuals.

Population and sampling.

The population in this study is 758 operators or managers of ceramic production facilities in Thailand which have been registered and licensed by the Thai Department of Industrial Works within the Ministry of Industry (DIW, 2011).

Self-administered questionnaire (SAQ).

For this research, the measurement instrument or questionnaires utilized was prepared from the literature. A self-administered questionnaire (SAQ) is being used as it is exploratory in nature and serves as a starting point for other methodologies.

Research quality inspection tools.

The research will be conducted to determine the quality and reliability of the instruments used in the research. Tools used to measure quality are divided into 2 phases including content validity and reliability (Hale & Astolfi, 2014). The research is divided into two phases.

Phase I consists of an inspection by 5 experts.

Ceramic plant operators	2 managers
Mid-level SME professionals	2 managers
Ceramic industry academic	1 Professor

Questionnaires are constructed as a tool to measure concept definition and practice using a 5-Point Likert Scale (Likert, 1970). This research will conduct Confirmatory Factor Analysis (CFA) and subsequently reliability analysis to measure Cronbach's alphas (Cronbach, 1951) for this scale items to ensure internal consistency. Multi-item measures were developed based on Cronbach's alpha >0.68. This study will then calculate Cronbach's alphas for each construct. If the value is below 0.50, the research question will be cut off. This is considered highly reliable.

The responses to the questions capturing focal constructs will use a five-point Likert scale (rating statements 1-5; 1 = strongly disagree and 5 = strongly agree) (Likert, 1970).

Phase II

Phase II consists of measures to ensure the quality of the questionnaire. Berk (1984) stated that an evaluation of the congruence between items and objectives is the most important assessment during the content validation stage. If there is insufficient evidence that the items are measuring what they are intended to measure, the remaining item analyses are useless. An efficient measure for numerically assessing content experts' evaluations of items is the index of item-objective congruence (Rovinelli & Hambleton, 1977), in which ratings from content specialists are obtained in order to evaluate the match between test items and the table of specifications (Berk, 1984). For this study, 5 experts in their related fields were chosen with items having an IOC index higher than 0.5 being considered acceptable. Additionally, the index of Item-Objective Congruence (IOC) developed by Rovinelli and Hambleton (1977) will be employed to carry out the screening of questions to a group of 10 initially in the pilot study. The research will then proceed to select items that have an IOC index higher than 0.5, which will be considered acceptable.

Data Collection

Primary data.

Primary data will come from a collection of factors influencing the survival of ceramic industry enterprises within Thailand.

Secondary data.

By studying theories and concepts related to the research from various sources, including books, articles, research papers, instruction manuals, etc.

Data Analysis and Statistical Methods Used

Quantitative research is currently envisioned using the partial least squares (PLS) statistical method and hypothesis testing with PLS-Graph software (Chin, 2001), which analyses the display and model structure associated with the observed manifest variables with latent variables.

Analysis of quantitative data.

The analysis of quantitative data will be conducted using statistical analysis as follows:

1. An analysis will be conducted by descriptive statistics by characterizing the frequency, percentage, mean and standard deviation.
2. An analysis will be conducted using structural equation modeling (SEM) to determine the relationship of the factors influencing the survival of ceramic industry enterprises in Thailand.

Analysis of qualitative data.

To confirm the results of the quantitative analysis are credible and the findings reliable, the researchers will conduct interviews with those involved as professionals, entrepreneurs and SME managers in ceramic industry enterprises in Thailand.

CONCLUSIONS

Ceramics is as old as civilization itself but yet is a craft that is being used in the most advanced disciplines of technology, construction, aerospace, medicine, nanotechnology, etc. In all areas, innovation is a key player in the firm's survival as can be seen from the over 8,000 patents for structural ceramic since 1980, mostly aerospace related. Bringing the products to market using sound strategic decisions with a strong financial sheet are also keys to the firm's survival. From the research thus far and through case studies such as with Thailand's SCG Group, the researchers see the strategic importance of research & development and innovation on group competitiveness and even survival. Big companies 'consume' smaller companies as they become weak and non-competitive. Government policy can hinder or help companies grow and prosper.

Everywhere you look in the world; ceramics is part of our life and what we call 'civilization'. It has been that way since humans settled into villages and started 'homes'. Now it will be part of our move into space and new frontiers. Ceramics is an exciting and extremely interesting industry and the researchers hope to continue their journey in the discovering of the companies and technology in this amazing industry.

In Thailand the research thus far for the industrial ceramics industry has seen the requirement for firms to become more adapt and embrace innovation and long-term business strategy to maintain their both their short-term and long-term competitiveness and industry sustainability. Therefore, this will help new entrepreneurs of ceramic enterprise have sufficient knowledge of innovation and business strategies on the effective of the organization for the ultimate survival of the ceramic industry's future.

REFERENCES

Acaps (2012). Qualitative and Quantitative Research Techniques for Humanitarian Needs Assessment: An Introductory Brief, May 2012. Retrieved from http://tinyurl.com/krnh24h

Arrindell, W. A., & van der Ende. J. (1985). An empirical test of the utility of the observations-to-variables ratio in factor and components analysis. *Applied Psychological Measurement*, 9, 165 - 178.

ASEAN Ceramics (2013). Thailand – Thailand's World's #1 tile producer. Retrieved from http://tinyurl.com/pc8wc8d

Bennet, A., & Bennet, D. (2011). *Organizational Survival in the New World.* New York, NY: Routledge. ISBN-10: 0750677120

Berk, R. A. (1984). Conducting the item analysis. In R. A. Berk, Ed., Aguide to criterion-referenced test construction (pp. 97-143) Baltimore,MD: The Johns Hopkins University Press

Ceramic World Review (2014). Large sizes, efficiency & green technologies • SCG goes on thinking "big". Retrieved from http://tinyurl.com/heradbp

Chin, W.W. (2001). *PLS-Graph User's Guide-Version 3.0*, Soft Modeling Inc., Houston, TX, USA.

Chong, A.Y.L., Chan, F.T.S., Ooi, K.B., & Sim, J.J. (2011). Can Malaysian firms improve organizational/innovation performance via SCM?, *Industrial Management & Data Systems*, 111: 3, 410 – 431. http://dx.doi.org/10.1108/02635571111118288

CiAdvanced (2015, November 23). Multiple Factors Driving Growth in Global Ceramic Market Size; Advanced Ceramics to Advance 9% through 2022. Retrieved from http://tinyurl.com/j4wqjwh

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika* 16(3): 297-334.

Dachyar, M. & Fatkhurrohman (2011). The Effect of Innovation Factors to Customer Loyalty by Structural Equation Model, *World Academy of Science, Engineering and Technology*, 52. http://tinyurl.com/h7fkuee

De Waal, A. A. (2007). The Secret of High Performance Organizations, Management Online Review, ISSN 1996-3300. Retrieved from http://tinyurl.com/jufx5tj

DIW (2011). Department of Industrial Works. Retrieved from http://www.diw.go.th/hawk/default.php

Drucker P.F. (1985). *Innovation and Entrepreneurship*, London: Pan Books Ltd.

Freeman, C. & Soete, L. (1997). *The Economics of Industrial Innovation*, 3rd edition. Cambridge MA: MIT Press. ISBN: 9780262561136. Retrieved from http://tinyurl.com/j99aj5e

Gorsuch, R. L. (1983). *Factor analysis (2nd ed.).* Hillsdale, NJ: Erlbaum.

Hale, C.D. and Astolfi, D. 2014. Measuring Learning and Performance: A Primer Third Edition. Retrieved from http://tinyurl.com/q7dqhmv

Hilman, H. & Kaliappen, N. (2014). Construct validation on organizational strategies and performance dimensions using confirmatory factor analysis, *ASEAN Journal of Management Research*, 4, 3. Retrieved from http://tinyurl.com/hmfmpmq

Johnson, G., Whittington, R., Scholes, K. & Pyle, S. (2011). *Exploring strategy*: text & cases.

Harlow: Financial Times Prentice Hall.

Kaplan, R.S., & Norton, D.P. (1992). Using the Balanced Scorecard as a Strategic Management System, *Harvard Business Review*, July-August. Retrieved from http://tinyurl.com/ozdnzdy

Kline, P. (1979). *Psychometrics and psychology*. London: Acaderric Press.

Korea JoongAng Daily (2015, May 13). These days, ceramic means much more than pottery. Retrieved from http://tinyurl.com/zk57vkg

Likert, R. (1970). *A Technique for the Measurement of Attitudes*, In: Attitude Assessment, Summers, G.F. (Ed.). 149-158. Chicago, IL., USA.: Rand-McNally and Company.

Lemon, M. & Sahota, P.S. (2004). Organizational culture as a knowledge repository for increased innovative capacity. *Technovation* 24(6), 483–498. Retrieved from http://tinyurl.com/goxej48

Lo, M-H., & Han, D. (2014). Exploring Competitive Strategies of China Ceramic Tile Industrial Cluster in Global

Economy, *Open Journal of Social Sciences*, 2, 11-18. http://dx.doi.org/10.4236/jss.2014.23003. Retrieved from http://tinyurl.com/zl7455p

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong S. (1999). Sample size in factor analysis. *Psychological Methods*, 4, 84-99.

MarketsandMarkets (2014, May 15). Advanced Ceramics Market Worth $9.5 Billion by 2020.

Retrieved from http://tinyurl.com/gwjfm67

Meldrum K. (2010), Structural Equation Modeling: Tips for Getting Started with Your Research, *Contemporary Approaches to Research in Mathematics, Science, Health and Environmental Education*, 1-5. Retrieved from http://tinyurl.com/hxxoslr

Meskendahl, S. (2010). The influence of business strategy on project portfolio management and Its success—a conceptual framework. *International Journal of Project Management*, 28(8), 807□817.

Mutlu, B. & Er, A. (2003). Design Innovation: Historical and Theoretical Perspectives on Product Innovation by Design, 5th European Academy of Design Conference, Barcelona,

Spain, April. Retrieved from http://tinyurl.com/z5kv4hm

Okpara, O. (2007). The value of creativity and innovation in entrepreneurship, *Journal of Asia Entrepreneurship and Sustainability*, 3, 2. Retrieved from http://tinyurl.com/zega9a8

Porter, M. E. (1985). The Competitive Advantage: *Creating and Sustaining Superior Performance*. NY: Free Press.

Porter, M.E. (1990). The Competitive Advantage of Nations. *Harvard Business Review*, 68, 73- 93.

Porter, M. E. (1996). What is strategy?. *Harvard Business Review*, November-December.

Retrieved from http://tinyurl.com/oaarmj6

Rothwell, W.J. (2010). Effective Succession Planning: Ensuring Leadership Continuity and Building Talent from Within - 4th Edition. New York: American Management Association,. Retrieved from http://tinyurl.com/zukgdum

Rovinelli, R.J. & Hambleton, R.K (1977). On the use of content specialists in the assessment of criterion-referenced test item validity. Dutch Journal of Education Research, 2: 49-60.

SCG (2014). SCG reports operating results in 2013, striving towards ASEAN expansion and VA products development. Retrieved from http://tinyurl.com/jpatjmp

Schumacker, R.E. & Lomax, R.G. (2010). A Beginners Guide to Structural Equation Modeling - Third Edition. New York: Routledge. Retrieved from http://tinyurl.com/z2sdwtr

Seedee, R., Sulaiman, M., & Ismail, I. (2009). Best business practices and performance in ceramics industry in Thailand Best business practices and performance in ceramics industry in Thailand, 9th Global Conference on Business & Economics. October 16-17,Cambridge University, UK. ISBN: 978-0-9742114-2-7. Retrieved from http://tinyurl.com/hsgcruj

Škrinjar, R., Bosilj-Vukšić, V., & Indihar-Štemberger, M. (2008) "The impact of business process orientation on financial and non□financial performance", *Business Process Management Journal*, 14: 5, 738 – 754. doi:10.1108/14637150810903084.

Tanwar, R. (2013). Porter's Generic Competitive Strategies, *Journal of Business and Management*, 15, 1 (Nov. - Dec. 2013), 11-17. Retrieved from http://tinyurl.com/jdnj6ne

Tikul, N. & Srichandr, P. (2010). Assessing the environmental impact of ceramic tile production in Thailand, Journal of the Ceramic Society of Japan, 118, 1382, (October) 887-894. http://doi.org/10.2109/jcersj2.118.887. Retrieved from http://tinyurl.com/zf3p8e2

Tolulope, L.A. (2009). Small-scale ceramic enterprises in South-Western Nigeria. *Journal of Enterprising Communities*: People and Places in the Global Economy, 3(3), 317-333.

Vicari, A. & Schiavo, A. (2015, July 30). Innovations-Moving Structural Ceramics into the Mainstream, Machine Design. Retrieved from http://tinyurl.com/hm7wlhy

Wasserman, S. (2015, August 18). Can a Ceramic Be Both Hard and Ductile? UCLA Researchers Hope So., Engineering.com. Retrieved from http://tinyurl.com/zftpw4q

Wiriyapong, N. (2015, December 28). Siam Cement Group chief confident his successor can rise to the challenges of a new regional business era. Bangkok Post. Retrieved from http://tinyurl.com/znqsnwv

Zuriekat, M., Salameh, R., & Alrawashdeh, S. (2011). Participation in Performance Measurement Systems and Level of Satisfaction, *International Journal of Business and Social Science*, 2: 8, 159-169. Retrieved from http://tinyurl.com/jcdfhqf

OKUL ÖNCESI EĞITIM KURUMUNA DEVAM EDEN 60-72 AYLIK ÇOCUKLARIN PROSOSYAL DAVRANIŞLARININ ÇEŞITLI DEĞIŞKENLER AÇISINDAN İNCELENMESI

Öğr. Gör. Ali ÖZCAN
Pamukkale Üniversitesi
aliozcan@pau.edu.tr

Bu çalışmanın amacı, cinsiyet, kardeş sayısı, doğum sırası, annenin çalışıp çalışmaması, anne ve babanın eğitimi ve ailenin aylık gelirinin 60-72 aylık çocukların prososyal davranışlarını nasıl etkilediğini incelemektir. Bu amaca yönelik olarak 89 kız ve 112 erkek olmak üzere toplam 201 okul öncesi eğitim kurumuna devam eden çocuğa Olumlu Sosyal (Prososyal) Davranış Ölçeği ve çocukların ailelerine demografik bilgilerini belirlemek için kişisel bilgi formu uygulanmıştır. Elde edilen veriler bağımsız gruplar t-testi, tek yönlü varyans analizi (One-Way ANNOVA) kullanılarak istatistik analizlerden geçirilmiştir. Analiz sonuçlarına göre çocukların olumlu sosyal (prososyal) davranış puanlarında doğum sırası, kardeş sayısı ve annenin çalışması değişkenlerinde anlamlı bir fark bulunmazken; cinsiyet, anne ve babanın eğitim durumu ve ailenin aylık gelir durumu değişkenleri arasında anlamlı bir fark bulunmuştur.

OKUL ÖNCESİ DÖNEM ÇOCUKLARININ ANNELERİYLE OLAN İLİŞKİLERİ İLE SOSYAL DUYGUSAL UYUM DÜZEYLERİNİN İNCELENMESİ

Ceyhun ERSAN
Pamukkale Üniversitesi Kale Meslek Yüksekokulu
Çocuk Bakımı ve Gençlik Hizmetleri Bölümü
ceyhune@pau.edu.tr

Bu çalışmanın amacı 61-72 aylık okul öncesi çocuklarının anneleri ile olan ilişkilerinin sosyal duygusal uyum düzeyleriyle ilişkisini ortaya koymaktır. Bu bağlamda ele alındığında bu araştırma bir ilişkisel tarama çalışmasıdır. İlişkisel tarama modeli iki ya da daha fazla sayıdaki değişken arasında birlikte değişim varlığını ve/veya derecesini belirlemeyi amaçlayan araştırma modelleridir. İlişkisel tarama araştırmalarında değişkenlerin birlikte değişip değişmedikleri, eğer bir değişme varsa, bunun nasıl olduğu öğrenilmeye çalışılır (Karasar, 1999).

Araştırmanın çalışma grubu Denizli Kale İlçe merkezinde okul öncesi eğitim alan 61-72 aylık okul öncesi çocuklarından oluşturulmuştur. İlçe merkezinde yer alan bağımsız anaokulu ve ilkokullara bağlı anasınıflarında eğitim alan tüm çocukların (yaklaşık 160 çocuk) annelerinden ve öğretmenlerinden veri toplanmaya çalışılmıştır. Çocukların anneleriyle ilişkilerinin belirlenmesinde orijinali Pianta (2002) tarafından geliştirilen ve Akgün ve Yeşilyaprak (2010) tarafından Türkçeye uyarlaması yapılan Çocuk Ana Baba İlişki Ölçeği (Child Parent Relationship Scale) kullanılmıştır. Çocuk Ana Baba İlişki Ölçeği'nin Türkçeye uyarlanan versiyonu 2 faktörlüdür; Çatışma ve Olumlu İlişki alt boyutları. Uyarlama çalışması kapsamında ölçeğin iç tutarlık katsayıları (Cronbach alfa) Çatışma alt boyutu için .85; Olumlu İlişki alt boyutu için .73 ve toplam için .73 olarak bulunmuştur. Bu çalışma kapsamında iç tutarlık katsayıları Çatışma alt boyutu için .82; Olumlu İlişki alt boyutu için .71 ve Toplam alt boyut için .71 olarak bulunmuştur. Çalışma kapsamında okul öncesi çocuklarının sosyal duygusal uyum düzeylerinin belirlenmesinde orijinali Önder ve Arkadaşları tarafından geliştirilen ve Işık (2006) tarafından 61-72 aylık çocuklar için uyarlanan "Marmara Sosyal-Duygusal Uyum Ölçeği" kullanılmıştır. Işık (2006)'ın uyarlaması sonucu ölçekte dört alt boyuta ulaşılmıştır. Alt ölçekler ve iç tutarlık katsayıları sırasıyla "Sosyal Yaşamın Gereklerine Uygun Davranma .86", "Sosyal Duruma Uygun Tepki Verme .75", "Akranlarla Etkileşim .78" ve "Sosyal Çevreye Pozitif Yaklaşma .70" olarak bulunmuştur. Bu çalışma kapsamında alt ölçeklere ilişkin iç tutarlık katsayıları benzer sırayla .81; .76; .75 ve .68 olarak bulunmuştur. Çalışma grubundaki çocuklar, anneleri ve öğretmenlerine ilişkin veriler "Kişisel Bilgiler Formu" aracılığıyla toplanmıştır. Çalışmaya ilişkin ölçme araçları 2015-2016 bahar yarıyılında ilçede okul öncesi kurumlarına devam eden 61-72 aylık çocukların öğretmenlerine ve öğretmenler aracılığıyla annelerine ulaştırılmıştır. Çocuk Ana Baba İlişki Ölçeği annelerce Marmara Sosyal duygusal Uyum Ölçeği öğretmenlerce doldurulmuştur. Yaklaşık 160 çocuk annesi ile 7 okul öncesi öğretmeninden veri toplanmıştır. Sadece 102 anne kendilerine ulaştırılan ölçeği doldurarak geri göndermiş ve çalışma 102 çocuk ekseninde tamamlanmıştır. Anneleri tarafından ölçek doldurulmayan çocukların öğretmenlerince doldurulmuş Marmara Sosyal Duygusal Uyum Ölçekleri analize dahil edilmemiştir. Ardından veriler SPSS 16.0 programına yüklenmiştir. Verilerin analizinde Pearson Korelasyon Katsayısından yararlanılmıştır.

Çalışma sonuçlarına göre 61-72 aylık okul öncesi dönem çocuklarının anne çatışma düzeylerinin, sosyal yaşamın gereklerine uygun davranma, sosyal duruma uygun tepki verme, akranlarla etkileşim ve sosyal çevreye pozitif yaklaşma düzeyleriyle aralarında negatif yönde ve istatistiksel olarak anlamlı bir ilişki olduğu anlaşılmıştır. Benzer şekilde çalışma grubundaki çocukların, anne çocuk ilişkisi kapsamında, olumlu ilişki düzeyleriyle, sosyal yaşamın gereklerine uygun davranma, sosyal duruma uygun tepki verme ve sosyal çevreye pozitif yaklaşma düzeyleri arasında pozitif yönde ve istatistiksel olarak anlamlı bir ilişki olduğu anlaşılmıştır. Bununla birlikte çocukların, anne çocuk ilişkisi kapsamında, olumlu ilişki düzeyleriyle akranlarla etkileşim düzeyleri arasında istatistiksel olarak anlamlı bir ilişki bulunamamıştır.

Anahtar Kelimeler: Okul Öncesi Dönem Çocukları, 61-72 Aylık Çocuklar, Anne Çocuk İlişki Düzeyi, Sosyal Duygusal Uyum.

OKUL ÖNCESİ EĞİTİM KURUMLARININ SINIF MEVCUTLARI VE EĞİTİM SÜRELERİ İLE OKUL ÖNCESİ DÖNEM ÇOCUKLARIN SOSYAL DAVRANIŞLARI ARASINDAKİ İLİŞKİNİN İNCELENMESİ

Merve CANBELDEK
Pamukkale Üniversitesi
mcanbeldek@pau.edu.tr

Okul öncesi eğitimi geliştirmek için niceliksel olarak okul sayılarının artırılması önemli bir adımdır. Bunun yanı sıra kurumların niteliklerinin artırılması da çocukların çeşitli alanlardaki gelişimlerinin desteklenmesi için gereklidir. Okul öncesi eğitim kurumlarının niteliğini etkileyen önemli faktörler arasında sınıfların mevcudu ve eğitim süresinin tam gün ya da yarım gün olması yer almaktadır. Bu araştırmanın amacı, okul öncesi eğitim sınıflarının mevcudu ve eğitim sürelerinin çocukların sosyal davranışlarına olan etkilerini incelemektir. İlişkisel tarama modeli ile yapılan çalışmaya okul öncesi eğitimine devam eden 836 çocuk ve 55 okul katılmıştır. Araştırmaya katılan çocukların sosyal davranışları "Okul Öncesi Sosyal Davranış Ölçeği Öğretmen Formu"ve sınıfların özellikleri "Okul Öncesi Eğitim Kurumu Yapısal Kalitesi İçin Bilgi Formu" aracılığı ile ölçülmüştür. Çalışmanın verilerinin analizinde varyans analiz teknikleri kullanılmıştır. Araştırmadan elde edilen bulgular, tam gün okul öncesi eğitimine devam eden çocukların fiziksel saldırganlık, ilişkisel saldırganlık ve depresif duygu düzeylerinin yarım gün eğitim veren kurumlara devam eden çocuklardan daha yüksek olduğunu göstermektedir. Sınıf mevcudunun sosyal davranışa etkisi incelendiğinde; 25 ve üzeri sınıf mevcuduna sahip sınıflarda bulunan çocukların fiziksel, ilişkisel saldırganlık düzeylerinin 10-15, 16-20 sınıf mevcuduna sahip sınıflarda eğitim gören çocuklardan daha yüksek olduğu bulunmuştur. Olumlu sosyal davranış düzeyi 10-15 sınıf mevcuduna sahip olan sınıflarda eğitim gören çocuklarda, 20-24, 25 ve üzeri sınıf mevcuduna sahip sınıflardaki çocuklara göre daha yüksek bulunmuştur. Depresif duyguların ise, 16-20 sınıf mevcuduna sahip olan sınıflardaki çocuklarda daha yüksek olduğu görülmüştür. Çocukların fiziksel saldırganlık, ilişkisel saldırganlık, olumlu sosyal davranışları ve depresif duyguları üzerinde eğitim zamanı ve sınıf mevcudunun istatistiksel olarak anlamlı ortak etkisi yoktur.

ONTOLOJİK BİR DURUM OLARAK BULANTI

(Jean Paul Sartre – Jose Saramago Karşılaştırması)

Arş. Gör. Nuri ÇİÇEK
Aksaray Üniversitesi Fen Edebiyat Fakültesi Felsefe Bölümü
nuricicek@aksaray.edu.tr

Felsefenin soyut ve kavramsal anlatımı ile içerdiği konuların aktarılmasındaki zorluklar felsefe – edebiyat işbirliğini gerekli kılmaktadır. Edebiyatın somut, canlı ve metaforik anlatımı felsefi konuların anlaşılmasına ve anlatılmasına kolaylık sağlamaktadır.

Varoluşçuluk insan hayatını, onun somut varoluşunu sorgularken aynı zamanda, varoluşu yaşayan bireyin bütün evreni sorgulamasına da neden olur. Varoluşçuluk nesnel hakikat yerine öznel hakikati koyarak aktörün bakışından felsefe yapar. Aktörün bakışından yapılan felsefe insandan bağımsız bir anlatımla soyut, kuru ve anlaşılmaz olabilir. Bu yönüyle öznenin kendi hakikatinin, kendi varoluşunun aktarımı canlı, somut, betimsel ve metaforik bir anlatımı zorunlu kılmaktadır. İnsan varoluşunu, mantıksal önermeler ve kavramsal anlatımla ele almak onu nesnel zemine bağlamaya neden olur. Oysa varoluş, onu seçimleriyle, eylemleriyle belirleyen, oluşturan özneden bağımsız bir anlatımla anlaşılamaz.

XX. yy başlarından ortalarına kadar geçen sürede özellikle yaşanan trajik olaylar (ekonomik krizler, savaşlar, göçler..vb) düşünürleri bu trajik olayları anlamlandırma çabasına sevk etmiştir. Düşünürler kendi hakikatlerini (kendi trajedilerini) ele alarak, insanın dünya içindeki yerini ve amacını belirleme, insana anlam yükleme çabasına girmişlerdir. Bu çaba ve varoluşu anlamlandırma sürecinde düşünürler insanların yaşadıkları sosyal ve psikolojik problemleri de analiz ederek insanların problemlerine çözüm sunmayı denemişlerdir.

XX. yy felsefesinin ve varoluşçuluğun önemli filozoflarından Jean Paul Sartre varoluşa anlam verme sürecinde 'Bulantı' adlı eserinde *Bulantı* olgusunu işlemiştir. XX. yy edebiyatının önemli yazarlarından Jose Saramago'da 'Çatıdaki Pencere' ve 'Yitik Adanın Öyküsü' adlı eserlerinde *Bulantı* olgusunu işlemiştir. Bu bildiride edebiyatçı-düşünür örneği Jean Paul Sartre ve Jose Saramago'da *Bulantı* olgusunu ele alarak, somut insan varoluşuna dair tespitler üzerine bir karşılaştırma ve değerlendirme yapılacaktır.

Anahtar Kelimeler: Felsefe-Edebiyat İlişkisi, Jean Paul Sartre, Jose Saramago, Varoluşçuluk, Bulantı

OTİZMLİ ÇOCUKLARIN ANNE VE BABALARIYLA OLAN SOSYAL ETKİLEŞİMSEL DAVRANIŞLARININ KARŞILAŞTIRILMASI

Özcan Karaaslan
Marmara Üniversitesi, Atatürk Eğitim Fakültesi
ozcanka@gmail.com

Ebeveynler çocuklarının var olan gelişimsel potansiyellerini başarıya ulaştırmaları için onları destekleyerek çocuklarının gelişiminde önemli bir oynamaktadırlar (Heath, 2005, syf. 115). Bazı araştırmacılara researchers (Örneğin, Heath, 2005; Kelly & Barnard, 2000) göre, ebeveyn-çocuk etkileşimi ile çocukların gelişimleri arasında anlamlı bir ilişki vardır. Bu çalışma, otizmli çocukların anne ve babalarıyla olan sosyal etkileşimsel davranışları arasında farklılık olup olmadığını incelemeyi amaçlamaktadır. Otizm tanısı almış olan çocuklardan 30 anne-çocuk ve 30 baba-çocuk ikilisinden veri toplanmıştır. Serbest oyun sırasında çocukların gelişimlerine uygun olan oyuncaklarla hem annelerin çocuklarıyla hem de babaların çocuklarıyla olan etkileşimleri video kamerayla kayıt altına alınmıştır. Tüm videolar, Ebeveyn Davranışını Derecelendirme Ölçeği ve Çocuk Davranışını Derecelendirme Ölçeği Türkçe versiyonu kullanılarak analiz edilecektir. Bulgular, Türk annelerinin otizmli çocuklarına karşı Türk babalara kıyasla daha yönlendirici olmayan yani yanıtlayıcı davranışlar (responsive) sergilediğini ortaya koymaktadır. Ayrıca hem anne hem de babaların etkileşimsel davranışları ile çocukların sosyal etkileşimsel davranışları arasında ilişki bulunmuştur.

Anahtar Kelimeler: Baba-çocuk ve anne-çocuk etkileşimi, otizmli çocuklar

A COMPARISON OF SOCIAL ENGAGEMENT OF CHILDREN WITH AUTISM WITH THEIR MOTHERS AND FATHERS

ABSTRACT
Parents play a key role in improvements of their children by supporting them to achieve their developmental potential (Heath, 2005, p. 115). According to some researchers (e.g., Heath, 2005; Kelly & Barnard, 2000), there are significant relationships between parent-child interaction and the child's later development. This study examined the differences between the mothers' and fathers' style of interaction and the engagement of their children with autism. Data were collected from a sample of 30 mothers-child and 30 fathers-child dyads in which all children diagnosed with autism. Both parents with their children were video recorded during free-play time with a set of developmentally appropriate toys. All videos were analyzed with the Turkish versions of the Maternal Behavior Rating Scale and Child Behavior Rating Scale. Findings revealed that Turkish mothers of children with autism are more responsive than fathers and both mothers' and fathers' level of responsiveness was associated with children's engagement.

Key Words: Father-child and mother-child interaction, children with autism

ÖĞRETIM ÜYELERININ ÖRGÜTSEL SAPMA DAVRANIŞLARININ İNCELENMESİ (MUĞLA SITKI KOÇMAN ÜNİVERSİTESİ EĞİTİM FAKÜLTESI ÖRNEĞİ)

Arş. Gör.Burcu TÜRKKAŞ ANASIZ
Mugla Sitki Kocman Universitesi
burcuturkkas@gmail.com

Prof. Dr. Ahmet DUMAN
Mugla Sitki Kocman Universitesi
aduman@mu.edu.tr

Örgütsel sapma davranışı örgütün performansını azaltan olumsuz işyeri davranışları olarak bilinmektedir. Bireyin kendini reddetmesine karşı aldığı ve içsel saygısını artırmasına yönelik kararlar ve uygulamalardır. Robinson ve Bennett'e (1995, 556) göre örgütsel sapma örgütsel normları ihlal eden örgütün ve/veya çalışanların üretkenliğini ve varlığını tehdit eden her türlü kasten yapılan davranıştır.

İlgili literatür incelendiğinde örgütsel sapma davranışlarının daha çok işletmelerde çalışıldığı gözlenmektedir. Tüm örgütlerde olduğu gibi eğitim örgütlerinde de bireylerarası çatışmalar, örgüte yönelik olumsuzluklar yer alabilmektedir. Bu tür olumsuzluklar örgütün bütünlüğünü bozabilmekte, eğitimin kalitesini düşürebilmektedir. Bu bağlamda toplumlara değişim ve gelişim imkânı veren üniversitelerde kasıtlı olarak gerçekleştirilen ve örgütsel performansı etkilediği düşünülen örgütsel sapma davranışının incelenmesinin önemli olduğu düşünülmektedir. Bu araştırma ile Muğla Sıtkı Koçman Üniversitesi eğitim Fakültesi'nde görev yapmakta olan öğretim üyeleri arasında sergilenen örgütsel sapma davranışının türlerini ortaya koymak amaçlanmaktadır. Araştırmadaki veriler nitel desende, yarı yapılandırılmış görüşme formu ile toplanmıştır. Görüşmeler 2015-2016 eğitim- öğretim yılının bahar döneminde Muğla Sıtkı Koçman Üniversitesi Eğitim Fakültesi'nde görev yapan 68 öğretim üyesinden (yardımcı doçent, doçent ve profesör) görev yaptıkları bölümlerin mümkün olduğunca eşit dağılımı dikkate alınarak, altışar öğretim üyesi belirlenerek toplamda 18 öğretim üyesiyle yapılmıştır. Bulgular içerik analizi yöntemiyle yorumlanmıştır. Araştırma sonucunda öğretim üyelerinin unvanlarına göre örgütsel sapma davranışlarının tanımlarının farklılaştığı görülmüştür. Bulgular ilgili literatür ışığında tartışılmıştır.

PRE-SERVICE MATHEMATICS TEACHERS' KNOWLEDGE OF MATHEMATICAL DIMENSION

Res. Ass. Fatih TAŞ
Bartın University
fatihhtass@gmail.com

The aim of this study was to investigate the pre-service mathematics teachers' knowledge of mathematical dimension. In this research was used the case study method of qualitative research design. Participant were pre-service mathematics teachers who were studied in last years of mathematics education undergraduate program from Bartin University.Participants were asked questions related with the concept of dimension and their answers were questioned for their reasons. Participants were asked questions about mathematical dimension semi-structured interviews. The data were analyzed by means of content analysis and has benefited from a descriptive expression.The result indicated that pre-service elementary teachers' do not have necessary knowledge about dimension.

ŞİDDET SÖYLEMLERİNE KARŞI HZ. PEYGAMBER'DE HOŞGÖRÜ VE EĞİTİMİ

Yrd. Doç. Dr. Mustafa KARABACAK
Aksaray Üniversitesi İslami İlimler Fakültesi Öğretim Üyesi
karabacakm67@hotmail.com

ÖZET

"Barış ve esenlik" anlamına gelen İslam'ın, barışçıl yönü ile değil de, savaş ve terörle anılması manidardır. Bu anlamda ileri sürülen âyet/âyetler ve Hz. Peygamber'in uygulamaları az da olsa vardır. Fakat ileri sürülen âyet/âyetler siyak ve sibakı gözetilmeden alınan ve yorumlanan naslardır. Koskoca bir imparatorluk kurmuş olan Hz. Peygamber'in hayatındaki uygulamalar ise kırmızı çizgileri aşmış kişiler için uygulanan ferdî olaylardır. Bu çalışmada bu konudaki âyet/âyetler ve Hz. Peygamber'in uygulamaları tek tek incelenmeyecektir. İslam'ın şiddete izin vermediğine dair âyet/âyetler ve Hz. Peygamber'in sözlerinden ve uygulamalarından örnekler verilerek O'nun hayatında hoşgörünün egemen olduğu vurgulanmaya çalışılacaktır.

Hz. Peygamber'in ahlaki özelliklerinden biri de hoşgörülü olmasıydı. O, herkesi anlayışla karşılar, insanlarla iyi geçinir, kimseye karşı kaba ve kırıcı konuşmazdı. İnsanlara karşı daima hoşgörülü, kimseyi küçümsemez, alay etmez, hatalarını yüzlerine vurmaz ve toplum içinde onları rencide etmezdi. Hz. Peygamber, yanlışları ortaya koyarken, yanlış yapanı değil, yapılan hatayı ön plana çıkarırdı.

Hz. Peygamber, hoşgörüyü insanlar arasında tek taraflı değil, karşılıklı uyulması gereken bir davranış biçimi olarak ifade etmiştir. O bir hadisinde; "*Hoşgörülü davran ki, sana da hoşgörü ile davranılsın*." buyurmuştur.

Herkese karşı hoşgörüyle davranan Hz. Peygamber kötülüğe kötülükle karşılık vermemiştir. Hatta kaba ve görgüsüzce davrananlara karşı bile affedici, bağışlayıcı ve hoşgörülü olmuştur. Çünkü bu davranış biçimi Allah'ın Müslümanlardan istediği bir tavırdır. Allah Teâlâ, Araf suresi 199. âyette Hz. Peygamber'e hitaben; **"…Sen af yolunu tut. İyiliği emret ve cahillere aldırış etme**." buyurmakta ve hoşgörülü olmanın ne kadar önemli olduğunu vurgulamaktadır.

Anahtar Kelimeler: Hz. Peygamber, İslam, hoşgörü, şiddet, eğitim.

THE DIFFICULTIES EXPERIENCED IN THE MOCK TRIAL WHICH IS A TEACHING METHOD IN ACTIVE CITIZENSHIP EDUCATION: THE EXPERIENCES OF A TEACHER

A. Figen ERSOY
Anadolu Üniversitesi, Eğitim Fakültesi İlköğretim Bölümü Sosyal Bilgiler Öğretmenliği Anabilim Dalı, Öğretim Üyesi,
arifee@anadolu.edu.tr

Ayşegül PEHLİVAN
Anadolu Üniversitesi, Eğitim Fakültesi İlköğretim Bölümü Sosyal Bilgiler Öğretmenliği Anabilim Dalı, Öğretim Üyesi,
aysegulpehlivan@anadolu.edu.tr

Today, societies give a special attention to citizenship education. An effective citizenship education enables students to grow as participating individuals who are knowledgeable and advanced in political and social issues morally and socially. For this purpose, activities that attract the attention of students and in which the students will be actively participating to the communication should be designed in citizenship education. Mock trial is a method that can be used at citizenship education. This research aimed at revealing the experiences of a teacher who implements mock trial in Human Rights, Citizenship and Democracy Course. In this context, the difficulties experienced and the measures taken by the teacher will be evaluated. A teacher teaching at fourth-grade will participated to the research. The teacher has been using the method of mock trial for about 10 years. The research data will be collected by the observations and interviews done in his class in order to determine the teacher's experiences. The data will be analyzed by content analysis. It is expected that the research results will contribute to improve the citizenship education.

THE EFFECT OF CONCEPTUAL CHANGE INSTRUCTION ON UNIVERSITY STUDENTS' ACHIEVEMENT AND UNDERSTANDING OF IMAGE FORMED BY LENS AND SPHERICAL MIRROR

Djanette BLIZAK
Université M'hamed Bougara, Boumerdes
ALGERIA
bdmeriem@yahoo.fr

ABSTRACT
One of the main objectives of teaching sciences is to develop in students a comprehensive understanding of the concepts and changing their misconceptions. This study aimed at testing the effect as used conceptual change instruction to promote conceptual comprehension on achievement in geometrical optics (GO) and university students' misconceptions regarding image formed by lenses and spherical mirrors.
To achieve our objective, a purposeful sample consisted of 305 students in the Biology department at first-year university department, was randomly assigned to represent two groups: the experimental (EG) which was taught OG by conceptual change instruction and utilisation of simple mathematics formulas with conceptions explication and the control group (CG) learned with traditional learning method.
The results from the post-tests showed that there was a significant difference between the control and experimental groups, in OG achievement, in favour of EG, also, the students' misconceptions about spherical mirrors and lens in EG were less than the CG.
Keywords: Geometrical optics, misconceptions and conceptual change.

INTRODUCTION

Many research studies in physics education have pointed out the difficulty of students on geometrical optics (GO). Several researchers (Goldberg & McDermott, 1987; Kaminski, 1989; Palacios et al., 1989; Heywood 2005; Blizak et al., 2009; Blizak & Chafiqi, 2014) in many countries have been focused on students' misconceptions about some concepts like formation of images, refraction, reflection, propagation of light, colours, shadow and vision. The students' misconceptions are produced from prior learning and everyday experiences. In addition, they resistant to change, they are main obstacles for getting a better understanding, and achievement in GO courses. The students' difficulties with light as an entity in space are pointed out as a problem in image construction (Palacios et al., 1989). They think that a single light ray transported only one point of the image (Kaminski, 1989). Viennot (1996) showed that the students in the secondary school have the idea of travelling image, because when we cover a portion of the lens the students believe that part of the image will disappear. She, also, indicated that student's difficulty with imagery problem persists after secondary school and that the trouble of secondary and university students it's with the materialization of the light ray.
Also, Goldberg & McDermott (1987) indicated that a significant number of students believed that an observer can see an image only if it is on the same line along the object and his vision, and for different observers it would be different positions for image. Also, they thought the lens is not necessary so that the image exists on the screen.
Galili & Hazan (2000) also reported that many students predicted that half the image stays in the mirror whether it is observed or not and the image moves from the object towards the mirror, where it stays. It seems that students do not use the reasoning about cones of light.
Traditional instruction has not been successful for changing or eliminated students' misconceptions (Blizak & Chafiqi, 2014). Teachers in traditional methods for GO mainly use of algorithms with little instruction of the underlying concepts, especially in the case of image formed by lens and mirrors. Also, many students solve the numerical problems without learning the concept. One possible solution for this problem is to use simple mathematics formula with more instruction and information about the nature of the image and the relation between image formed and object.
Dunn and colleagues (2002) have shown that there is a significant relation between instructional methods used by teachers and learning achievement. In this regard, the appropriate instructional methods would take in consideration the students` preconception and facilitate conceptual change. Also, teacher would focus on the students' acquisitions of understandings. The conceptual change instructional can facilitate the understanding of concepts. It is defined as a learning process that allows the passage of the initial knowledge of students to scientific knowledge (Megalakaki & Fouquet, 2009). In this approach, the conditions for conceptual change: dissatisfaction, intelligibility, plausibility, and fruitfulness (Posner et al., 1982), should be taken into consideration by teachers. Eryılmaz (2002) study indicated that the conceptual change discussion was a powerful tool for reducing the number of misconceptions and was significantly effective in increasing students' achievement.

This study aimed at testing the effect as used conceptual change instruction to promote conceptual comprehension on university students' achievement in geometrical optics (GO) compared to traditional instruction.
The students' understanding of image formed by lens and spherical mirror after treatment was investigated through the qualitative analyses of the students' answers.

RESEARCH QUESTIONS

Our research questions, in this study, are:

- Is there any effect of conceptual change instruction on students' GO achievement scores?
- Is there any effect of conceptual change instruction on students' understanding of image formed by lens and spherical mirror?

MATERIALS AND METHOD

The population of the study consists of a total of 305 students from Department of Biology in Faculty of Sciences in Boumerdes University. Of the students sampled, 92% were female, 8% were male. The average age of the students was 19.68 years with a standard deviation of 3.23 years.
In the second semester of 2013/2014 university year, A GO misconception test (GOMT) was applied for 268 students from the total sample in order to investigate the students` misconceptions before teaching and using them in conceptual change instruction in GO.
In the second semester of 2014/2015 university year, there were 67 students randomly assigned to control group CG (35 students) and experimental group EG (32 students).
The experimental group was taught using conceptual change instructional treatment where the misconceptions investigated before are taken into account, while the control group was taught using traditional method.
During the treatment, the same content material about GO are covered and the same problems were solved in both groups experimental and control. The design of this study is given by concept maps showed in figure 1.

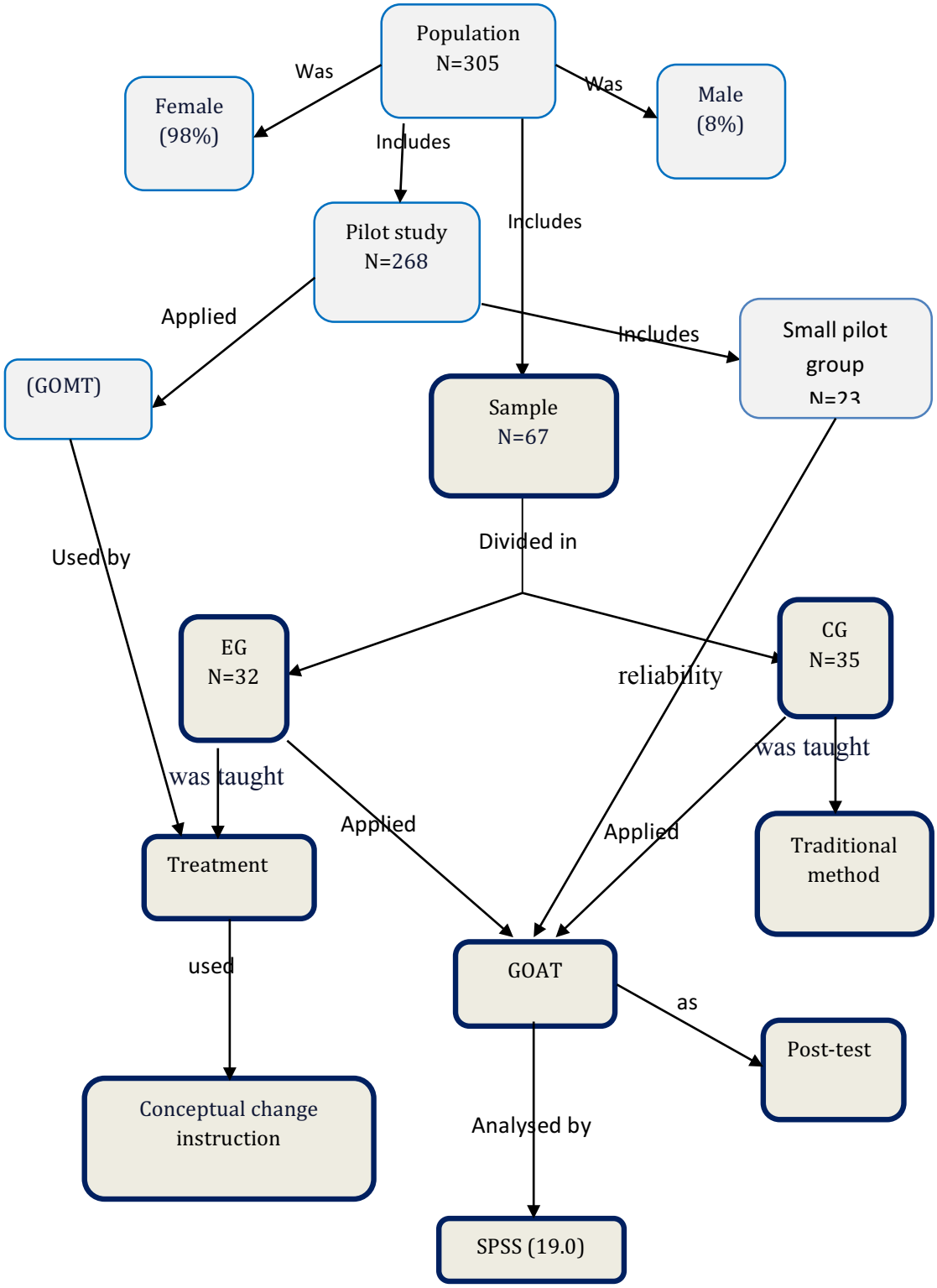


Figure 1. Concept map for research design of the study

The GO achievement test (GOAT) was developed as data collection scale has been used. The GOAT was prepared by the contribution of the physics formation team in Faculty of Sciences at Boumerdes University. 10 multiple choice questions and 2 problems were included in GOAT. The distribution of the questions according to the GO is as indicated in table 1.

To determine the internal consistency reliability of the GOAT, we have randomly chosen a small pilot group (23 students) from the population of the pilot study. The Cronbach alpha coefficient value was (α=0.79), which is considered to be acceptable.

Table 1: The distribution of the questions in achievement test

	Number of question and problem	Subject	Note
multiple choice questions	Q1,	Propagation of light	1 point
	Q2	Propagation of light	1 point
	Q3	Propagation of light	1 point
	Q4	Reflection of light (plan mirror)	1 poin
	Q5	Reflection of light (Spherical mirror)	1 point
	Q6	Dispersion of light	1 point
	Q7	Lens	1 point
	Q8	Vision	1 point
	Q9	Vision	1 point
	Q10	Shadow	1 point
Problems	Problem1	Image formed by spherical mirror (concave and convex)	5 points
	Problem2	Image formed by lens (convergent and divergent)	5 points
Total score			20 points

In conceptual change instruction the teacher:

- use simple lens formulate (1/f=1/p+1/q);
- show the construction of the image with many light rays (Figure 2-a);
- encourages students to work in small groups (2 or 3 students) to construct the image of an object in the different possible cases (different lenses or mirrors and different positions of the object)insist on the understanding of some conceptions such vision and propagation of light.

In traditional teaching method the teacher use:

- use conjugate lens equation (1/f=1/OA+1/OA`);
- construction of the image with 3 light rays only (Figure 2-b).

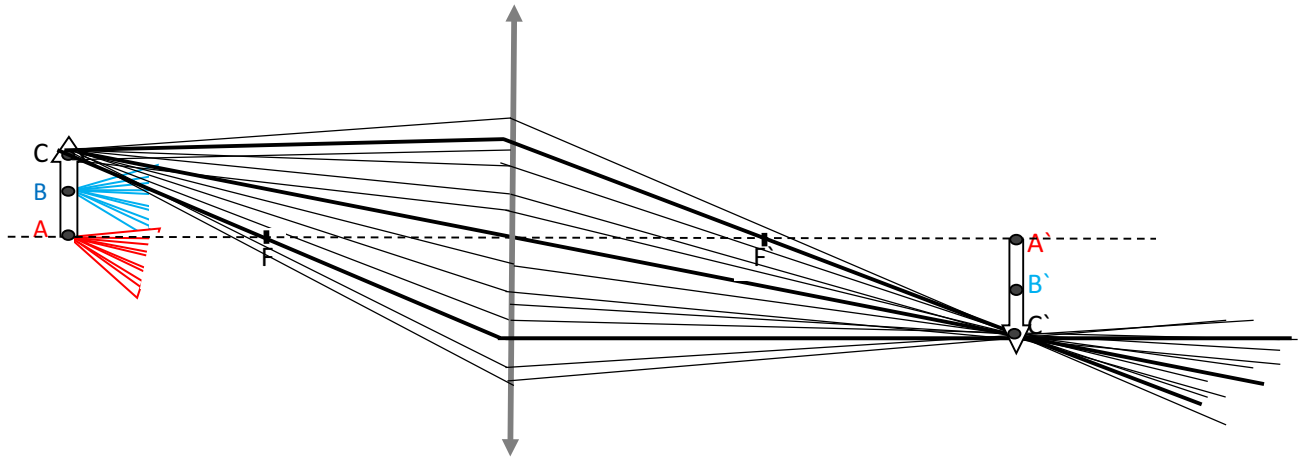


Figure 2-a.C of the image with many light rays

After treatment, the GOAT was administered under standard conditions as post test to the CG and EG at the end of second semester. The objective of the post test was to assess the effect of treatment using conceptual change instructions on students' GO achievement.

The GOAT, that we have built, was done in the language of instruction (French).
The data were compiled and analyzed using SPSS 19.0 statistical analysis program for Windows computer software. The results of the analysis were used to answer the research questions, by using average and t-test. Significance level was taken as 0.05. The value of each correct answer at multiple choice questions has been accepted as'1' point and 5 points for the both problems. The maximum score is 20 (see table 1).

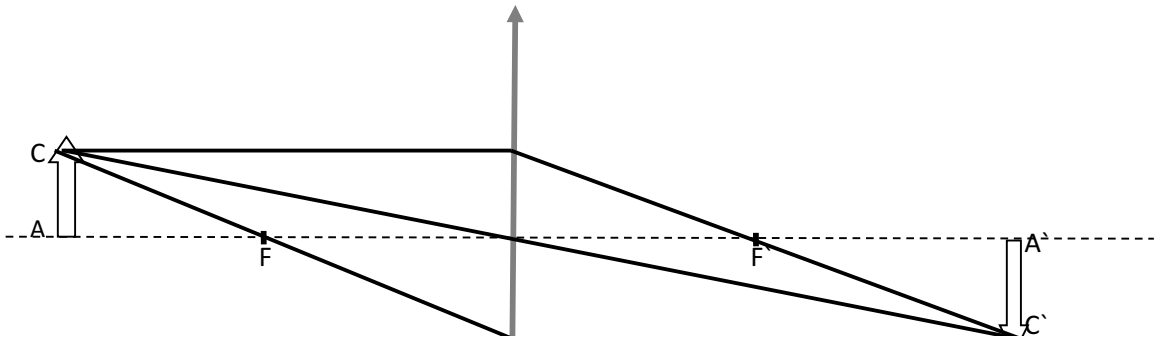


Figure 2-b. Construction of the image with 3 light rays

FINDINGS

The qualitative analysis of students` responses at GOMT has shown that students in first year university have many misconceptions about GO concepts (see Table 2). All these misconceptions have been found in another study (Blizak, & Chafiqi 2014; Blizak et al., 2009; Kaminski, 1989; Goldberg & McDermott, 1987). They have been taken into account in the conceptual instruction, by teacher, in order to change or remove them.

Table 2: Student's misconception before treatment

GO Misconception
➢ Light is not conceived as moving from one point to another with a finite speed. ➢ Light travels from the eyes to the object. ➢ Light is not necessary to see since we can see a little in a dark room. ➢ Light always passes straight through transparent material (without changing direction). ➢ A person can see more of his or her mirror image by moving further back from the mirror. ➢ Shadows can be conceived as an image, or as something belong to an object ➢ A shadow is a `reflection' (reproduction) of an object. ➢ The stronger the source of light, give the bigger the shadow. ➢ The bigger the source of light, give the smaller the shadow. ➢ Objects are seen because they are bathed in light. ➢ The mirror image of an object is located on the surface of the mirror. ➢ To be seen in a mirror, the object must be directly in front of the mirror or in the line-of-sight from the observer to the mirror. ➢ The image of an object placed to the side of a plane mirror does not exist for any observer. ➢ A plane mirror forms real images. ➢ The convergent lens increases the speed of the light ➢ Blocking part of the lens surface would block the corresponding part of the image. ➢ An image can be seen on the screen regardless of where the screen is placed relative to a lens. ➢ To see a larger image on the screen, the screen should be moved further back. ➢ The size of an image depends on the size (diameter) of the lens used to form the image. ➢ Images can be in two places. ➢ Lenses are not necessary to form images.

Findings have been given regarding the research questions to be answered related to main purpose of the research. The first research question in this study was: "is there any effect of conceptual change instruction on students' achievement scores in the case of GO?"

To give answer to this question a post test mean scores of the students instructed with conceptual change instruction (EG) and those taught with the traditional science instruction (CG) in terms of students' achievement of GO, was used. The results were shown in Table 3.

The post-GOAT total means scores were compared using independent samples t test to found whether there was a statistically significant mean difference between EG and CG in the case of GO.

As shown in table 3, there was a statistically significant mean difference between the EG (M =9.98, Sd=3.01) and CG (M = 6.96, Sd =3.34) totals scores in favour of the experimental group [$t(65)=3.83$, $p<0.05$] . Furthermore,

Table 3 shows that the scores of the EG were consistently higher than those of the CG while the standard deviations were lower, for all subscales.
We recall that the maximum possible scores are:

- questions (multiple choice questions) = 10;
- probleme1 (about the images formed by concave and convex mirrors) =5;
- problem2 (about the images formed by convergent and divergent lenses) = 5
- GO achievement post-test = 20 (total score).

Table 3: Descriptive statistics related to students' GOAT, in the experimental and control groups.

Group	**EG**			**CG**			**Samples t-test**		
Measures	N	Mean	SD	N	Mean	SD	**t**	DF	P
post-GOAT (questions)	32	4,6875	1,42416	35	3,5429	1,40048	**3,315**	65	**,002**
post-GOAT (problem 1)	32	2,6406	1,37509	35	1,5286	1,42428	**3,245**	65	**,002**
post-GOAT (problem 2)	32	2,8125	1,07576	35	1,9000	1,20538	**3,257**	65	**,002**
post-GOAT (total)	32	9,9844	3,10173	35	6,9571	3,34174	**3,833**	65	**,000**

The second question to be answered in this study was: "is there any effect of conceptual change instruction on students' understanding of image formed by thin lens and spherical mirrors?"

The histogram, in Figure 3, clearly shows the difference between mean scores of problem1 and problem2 of the EG and the CG after treatment. The Table 3 shows that the mean scores of the problem 1 using spherical mirrors in the EG is 22.24% higher than that in the CG and the mean of the problem 2 using thin lens, in the experimental group, is 18.25% higher than that in the CG.

The students in the experimental group have better understood, the formation of image by lenses and by mirrors, than the students of the control group. It is very clear that the use of conceptual change instruction had a positive effect on understanding the formation of image and also to eliminate some misconceptions in GO.

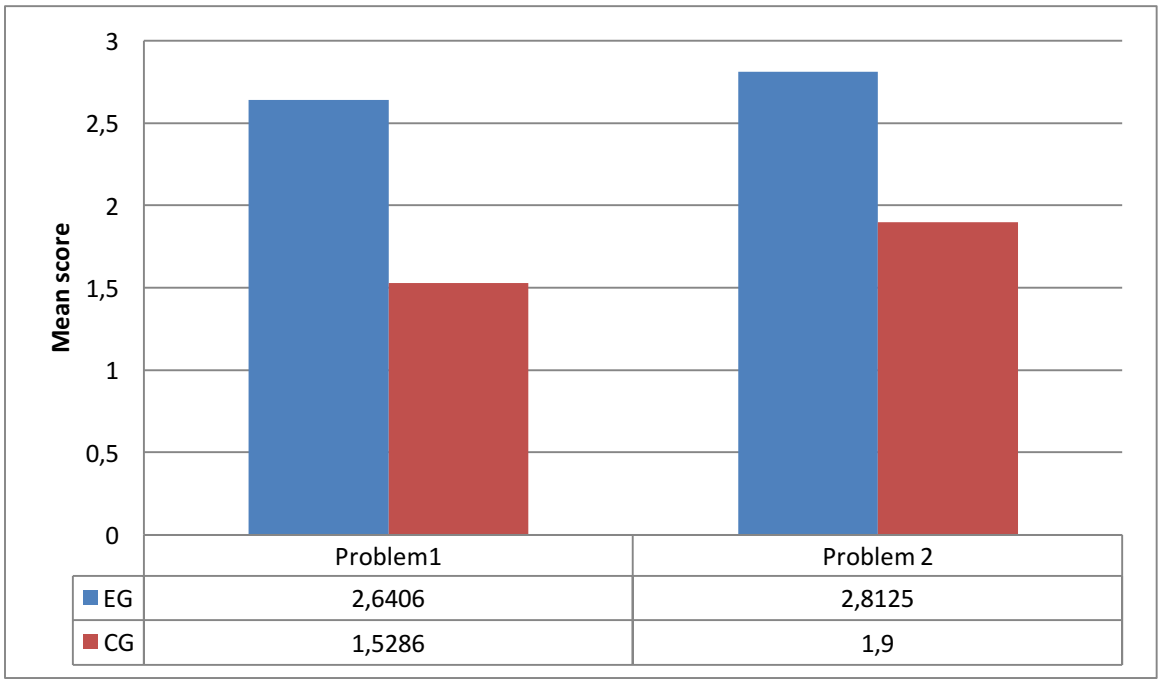


Figure 3. The difference between mean scores of problem1 and problem2 of the EG and CG

DISCUSSION AND CONCLUSION

The main purpose of this study was to recognize the effect of conceptual change instruction on university students' achievement and understanding of image formed by lens and a spherical mirror. Before giving any instruction about GO, the university students in first year at Biology department were examined in order to their understanding of GO concepts. It was found that the students have many misconceptions in the field of GO; about propagation of light, vision, and formation of the image. All theses misconceptions have been investigated in previous studies (Viennot, 1996; Galili & Hazen, 2000; Blizak & Chafiqi, 2014; Kaltakci-Gurel, 2016).

Inquiry EG, which was taught by using conceptual change instruction about image formation, had a significantly higher post-test mean scores on the achievement test than the just traditionally taught group (CG). This confirms the results obtained by many studies in science education, concerning the non effectiveness of the use of traditional teaching strategies (Berger & Karabenick, 2011; Elcin & Sezer, 2014).

The students who were taught by using a simple equation with more concepts explanations about image formed by thin lens and spherical mirrors had higher mean scores on the problems than the students teaches by habitual method where the alternative conceptions of GO are highly resistant to change. This result is in accord with Ogunsola-Bandele (1996). He signals that many students might be able to perform well on quantitative questions without understanding of the underlying concepts. The quantitative questions in physics assessment should always include supplemented which requires the students to explain and discuss concepts and their applications. Also, Von Aufschnaiter (2006) argues that the quality of understanding of the concepts is more important than their amount or accuracy.

Teaching GO using conceptual change instruction and taking students' misconceptions into account appeared to be successful in students' understanding of conceptions related to the image formed by the lens and mirrors.

Following this research, several perspectives are possible to develop teaching strategies integrating conceptual change.

REFERENCES

Berger, J. L., & Karabenick, S. A. (2011). Motivation and students' use of learning strategies: Evidence of unidirectional effects in mathematics classrooms. Learning and Instruction, 21(3), 416-428.

Blizak, D., Chafiqi, F., & Kendil, D. (2009). Students misconceptions about light in Algeria. In Education and Training in Optics and Photonics (p. EMA5). Optical Society of America.

Blizak, D., & Chafiqi, F. (2014). Determination of University Students' Misconceptions about Light Using Concept Maps. Procedia-Social and Behavioral Sciences, 152, 582-589.

Dunn, R., Beaudry, J. S., & Klavas, A. (2002). Survey of research on learning styles. California Journal of Science Education, 2(2), 75-98.

Elcin, M., & Sezer, B. (2014). An Exploratory Comparison of Traditional Classroom Instruction and Anchored Instruction with Secondary School Students: Turkish Experience. Eurasia Journal of Mathematics, Science & Technology Education, 10(6), 523-530.

Eryilmaz, A. (2002). Effects of conceptual assignments and conceptual change discussions on students' misconceptions and achievement regarding force and motion. Journal of Research in Science Teaching, 39(10), 1001-1015.

Galili, I., & Hazan, A. (2000). Learners' knowledge in optics: interpretation, structure and analysis. International Journal of Science Education, 22(1), 57-88.

Goldberg, F. M., & McDermott, L. C. (1987). An investigation of student understanding of the real image formed by. Am. J. Phys, 55(2), 2.

Heywood, D. S. (2005). Learning and Teaching About Light: Some pedagogic implications for initial teacher training. International Journal of Science Education 27(12), 1447-1475.

Kaltakci-Gurel, D., Eryilmaz, A., & McDermott, L. C. (2016). Identifying pre-service physics teachers' misconceptions and conceptual difficulties about geometrical optics. European Journal of Physics, 37(4), 045705.

Kaminski, W., (1989). Conceptions des élèves (et autres) sur la lumière. Bulletin de l'union des physiciens, n° 176, p. 973-996.

Megalakaki, O., & Fouquet, N. (2009). Conceptions naïves de la digestion chez les enfants de 7 à 10 ans. Enfance, 2009(2), 159.

McDermott, L. C. (1993). How we teach and how students learn-A mismatch?.American journal of physics, 61, 295-295.

Palacios, F. J. P., Cazorla, F. N., & Madrid, A. C. (1989). Misconceptions on geometric optics and their association with relevant educational variables.International Journal of Science Education, 11(3), 273-286.

Posner, G. J., Strike, K. A., Hewson, P. W., & Gertzog, W. A. (1982). Accommodation of a scientific conception: Toward a theory of conceptual change. Science education, 66(2), 211-227.

Ogunsola-Bandele, M. F. (1996). Mathematics in Physics-Which Way Forward: The Influence of Mathematics On Students' Attitudes to the Teaching of Physics.

von Aufschnaiter, C. (2006). Process based investigations of conceptual development: An explorative study. International journal of science and mathematics education, 4(4), 689-725.

Viennot, L. (1996). Raisonner en physique: la part du sens commun. De Boeck Supérieur.

The Effect of Motivation on the Strategy Use and Learning Achievement of the Tertiary Level EFL Learners in a Turkish Context

Ali Şükrü ÖZBAY
Faculty of Letters, Karadeniz Technical University, Trabzon, Turkey
ozbay@ktu.edu.tr

Ahmet Mutlu AKYÜZ
Institute of Social Sciences, Gumushane University, Gümüşhane, TURKEY
aakyuz@gumushane.edu.tr

ABSTRACT
It is a long consensus by now that foreign language learning in Turkey still occupies a very important place in terms of various factors such as an educational necessities, tools for free enterprise in foreign countries or as an aid to economic prosperity especially after 80s. With all these in mind, however, serious criticisms are directed to the actualisation of this goal by various circles regarding the failure to teach it in the desired levels. Thus, the purpose of this study is to examine the impact of the several dimensions of learning strategies (time management, organizing learning, resource management, active involvement and coping strategies) on foreign language learners' achievement and also to find out a possible moderator effect of intrinsic and extrinsic motivation in this relationship. Purposive sampling methodology was used in the study and the samples were chosen from the English department of a middle size university in the Eastern Black Sea region. The number of the samples was 151. The study lasted for three months and the moderator analysis method was used in an attempt to test the research model. The results suggest that there is a certain relationship pattern among the variables examined and extrinsic and intrinsic motivation types seem to play a role between active involvement and learning achievement variables, and also a full mediation role between the coping strategies and learning achievement variables. It also seems that the findings provide evidence for the mediation effect of extrinsic motivation on the relationship between organizing learning and learning achievement variables. However, no evidence can be obtained regarding the mediation effect of extrinsic and intrinsic motivation variables on the relationship between resource management, time management and learning achievement variables.

Keywords: Strategies, learner achievement, motivation types, moderation model.

INTRODUCTION
In several research studies regarding the foreign language learning and its significance worldwide, a group of researchers such as Chan et al. (2011) concluded that attempts to learn a foreign language is a common practice and is spreading even wider all around the world especially in European Union (EU). Further evidence for the validity of Chan et al`s claim is provided by the European Councils' declaration which was made in Barcelona in 2011. According to this declaration made by the European Council in the closing, it was recommended that "learning of at least two foreign languages from a very early age" is important (p. 1). The early frameworks of the European Council convened in Lisbon in 2000 also stated that EU made recommendations to its citizens to learn speaking a foreign language among the other important skills such as information technology skills, technological culture, entrepreneurship, and social skills (Chan et al., 2011). There is no doubt that communication and its tools have gained considerable significance worldwide in our age as part of the technological innovations. Therefore, the need for communication in the rapidly growing world can further be extended to include the knowledge of languages or at least knowing a second or a foreign language. The need to do so is evident if we carefully consider the fact that the modern societies today have dedicated themselves for preparing the ground for the creation of suitable conditions for the teaching and learning foreign languages as well as all other branches of science due to the requirements of their social, cultural, economic and scientific development. Furthermore, it is important to notice that many new ideas are quickly multiplying and renewing not only about knowledge but also about learning a foreign language in our world. Accordingly several teaching-learning theories and strategies that are shaped by these new ideas are considered seriously and put into practice widely (Hamzadayı, 2010).

One example of these teaching-learning theories is the "cognitive language learning" approach and according to Yavuz and Şimşek (2008) cognitive language learning approach and its emphasis on understanding of the structure of a foreign language occupies an important place. The theory presupposes that when an appropriate level of evaluation on the language structures in meaningful situations in provided, it is possible automatically to develop an ease use of language while using it. This means that such traditional learning theories as conditioning, creating new habits and memorization techniques in behaviourism will be replaced by the learning of the rules and meaningful exercises. With all these theories and their successful implementation of foreign language teaching in

nation-wide scale, it is expected to receive positive results on the issue. For all these to happen, though, it seems that there is a need for using effective ways to motivate both teachers and learners alike. The reason for doing so is also necessary in order to avoid from failure to motivate learners who tend to learn a foreign language by applying wrong methods, which caused prejudices in against the foreign language learning (Arslan and Akbarov, 2010). For all these reasons stated above, it seems that motivation for foreign language learning is very important and is seen as a major problem in Turkey.

Learning Strategies and Learner Motivation

It is often recommended that foreign language learners should be aware and use certain learning strategies successfully (Oxford, 1994). One of these strategies is willingness, which means having a strong drive to communicate. Others are being potentially uninhibited and should not be afraid of making mistakes while learning. They should also focus on looking for patterns and should not miss any opportunities to practice as well as pay attention to others' speech in an attempt to learn pronunciation and to correct their mistakes. The close relationship between learning strategies and learning achievement and their potential to support learning is, according to Ehrman and Leaver, (2003), evident especially after the integration and application of both cognitive and metacognitive strategies (Rahimi and Katal, 2012); (O'Malley and Chamot, 1990).

Oxford`s (1996) division of cognitive learning strategies into five dimensions (organizing learning, coping strategies resource management, time management and active involvement) are important for foreign language learners. As part of the cognitive learning strategies, Dornyei and Malderez (1997) stated that foreign language learning process can best be supported by group activities which require active involvement in the learning activities and thus increasing the achievement. While active involvement includes rehearsal, inferencing, self-monitoring, and calling upon others for help, organizing learning represents the learning strategies of elaboration and organization, and calling upon other individuals for help. Resource management deals with fixing a time and a suitable atmosphere to study a foreign language and the coping strategies consist of memorization (rehearsal), guessing from context, and inference. Finally time management reflects both time pressures on the learners and the need to be efficient in learning process." On the basis of these ideas, the following hypothesis was posited:

H_1: Learning Strategies will increase Learning Achievement (LA).
H_{1a}: Active Involvement (AI) will increase Learning Achievement (LA).
H_{1b}: Organizing Learning (OL) will increase Learning Achievement (LA).
H_{1c}: Resource Management (RM) will increase Learning Achievement (LA).
H_{1d}: Coping Strategies (CS) will increase Learning Achievement (LA).
H_{1e}: Time Management (TM) will increase Learning Achievement (LA).

Factors affecting the choice and achievement of learning strategies are many and they can be listed as motivation (Root, 1999; Krishnan et al., 2013; Dörnyei, 1998; Tuan, 2012), age (Kormos and Csizer, 2008), gender (Oxford and Ehrman, 1995; Tercanlioglu, 2004), culture (Horwitz, 1999), learning styles (Bailey et al., 2000), beliefs (Ariogul et al., 2009), attitudes (Ushida, 2005) and etc.

Among all these factors given above, it is perhaps the "motivation" the most significant one in learning a foreign language since motivated learners are willing to use more of learning strategies. According to Zhao (2012) "motivation concerns the direction and magnitude of human behaviour and it can be defined by answering why people decide to do something, how hard they are going to pursue it and how long they are willing to sustain the activity" (p.100). It is also known that motivation has a multi-componential structure and there are various motivation theories with such components as socio-psychology, socio-culture (Krishnan et al., 2013), and socio-education (Ushida, 2005). According to Bernaus (1995), "motivation is possibly the main factor affecting students' foreign language acquisition, which is followed by socio-cultural factors" (p. 21). According to a study by Zubairi and Sarudin (2009), "both extrinsic and intrinsic motivation can be used to explain the importance of attitudes and beliefs for enrollment, success and attrition rates in foreign language classes" (p. 3). No doubt that motivation holds a crucial role in the learning process as well as affect the outputs of the learning process which is why it is largely regarded as a mediating role in the learning process. In addition to the hypotheses posited so far, the following hypotheses were tested in the scope of the study.

H_2: Learning Strategies will increase Learners' Extrinsic Motivation (EM).
H_{2a}: Active Involvement (AI) will increase the Learners' Extrinsic Motivation (EM).
H_{2b}: Organizing Learning (OL) will increase the Learners' Extrinsic Motivation (EM).
H_{2c}: Resource Management (RM) will increase the Learners' Extrinsic Motivation (EM).
H_{2d}: Coping Strategies (CS) will increase the Learners' Extrinsic Motivation (EM).
H_{2e}: Time Management (TM) will increase the Learners' Extrinsic Motivation (EM).

H_3: Learning Strategies will increase Learners' Intrinsic Motivation (IM).
H_{3a}: Active Involvement (AI) will increase the learners' intrinsic motivation (IM).
H_{3b}: Organizing Learning (OL) will increase the learners' intrinsic motivation (IM).
H_{3c}: Resource Management (RM) will increase the learners' intrinsic motivation (IM).
H_{3d}: Coping Strategies (CS) will increase the learners' intrinsic motivation (IM).
H_{3e}: Time Management (TM) will increase the learners' intrinsic motivation (IM).
H_4: Learners' Motivation will increase Learning Achievement (LA).
H_{4a}: Learners' Extrinsic Motivation will increase Learning Achievement (LA).
H_{4b}: Learners' Intrinsic Motivation will increase Learning Achievement (LA).

The research model (Figure 1) used in the scope of the study was designed based on the previous literature and the theoretical assumptions and suggested that the five dimensions of learning strategies would be effective on foreign language students' learning achievement and the extent of learners' motivation play an mediator role in this relationship. The basic assumption in the study is based on the premise that EFL students who consistently evaluate their learning strategies depending on the level of their motivation will develop learning achievement and depending on the level of motivation, their learning achievement will increase in return. In this framework, it was expected that the level of learners' extrinsic and intrinsic motivation as mediating variables would explain the relation between the five dimensions of learning strategies and foreign language students' learning achievement. The following additional hypotheses were also tested in the scope of the study;

H_5: Learners' motivation will mediate the relationships between learning achievement and learning strategies
H_{5a}: Learners' extrinsic motivation will mediate the relationships between learning achievement and learning strategies and
H_{5b}: Learners' intrinsic motivation will mediate the relationships between learning achievement and learning strategies

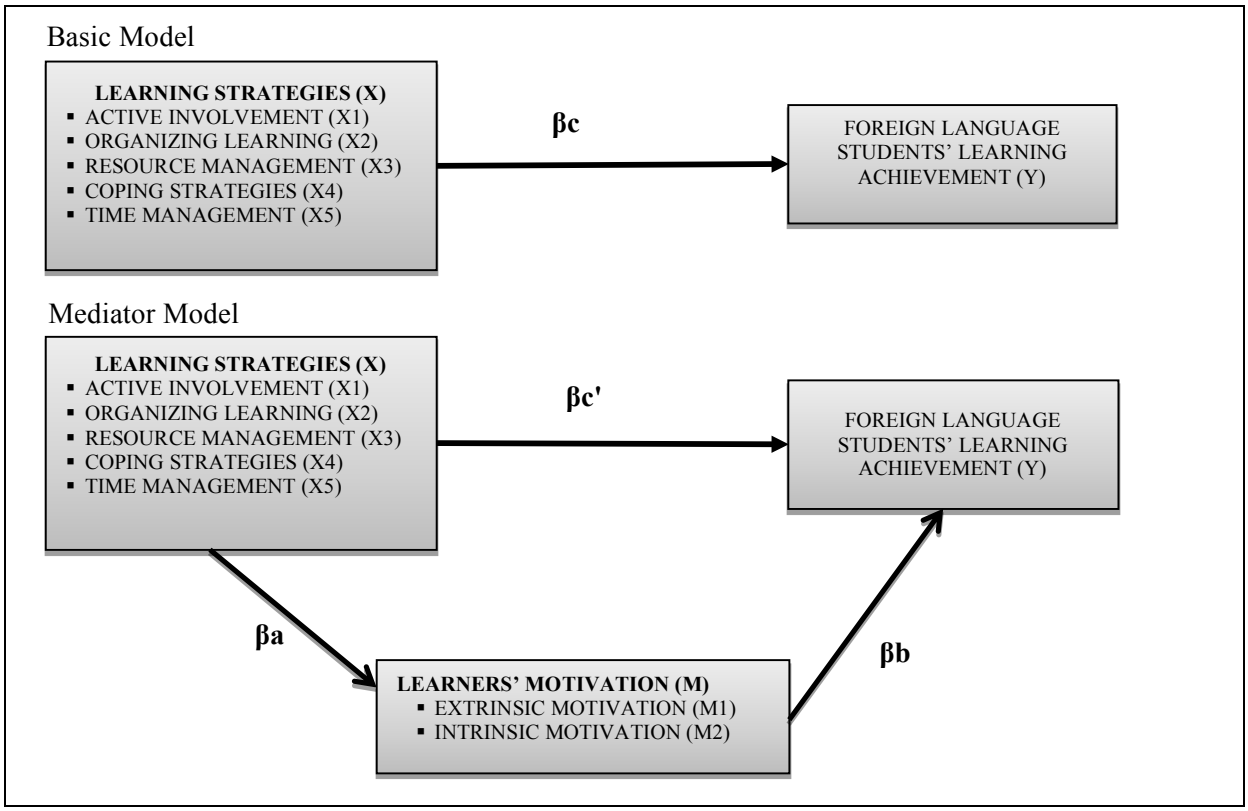


Figure 1: Research Model

DATA ANALYSIS
In order to be test the mediator model, multiple linear regression analysis was used. Analysis steps recommended by Baron and Kenny (1986) and also employed by several other investigators (*for example* Okan and Akyuz, 2015; Okan et al, 2015) were followed.

Within the framework of mediator model that was designed to test the above premises, *Total effect (βc)* can be tested independently both as *direct effect (βc')* of independent variable (learning strategies) on dependent variable (foreign language students' learning achievement), and *indirect effect (βa.βb)* the effect defined upon the learning motivation.

Total effect within the model displays the sum of direct and indirect effects (βc = βc '+ βa.βb) (Okan and Akyuz, 2005). When this equation is interpreted, the emergence of a mediator relationship may propose two different situations. First is that if the indirect effect (βa.βb) and the total effect (βc) are equal to each other, then the direct effect (βc') given in the mediator model will not be meaningful. This is accepted as a precise or complete mediation (Okan and Akyuz, 2015) and which will be acknowledged as an exact relationship defined upon the variable "learners' motivation". Second is that if the indirect effect (βa.βb) is lower than the total effect (βc), partial mediation relationship emerges. In this case, this situation can be explained as part of a relationship between learning strategies and foreign language students' learning achievement (Okan and Akyuz, 2015). .

Sampling Process

The samples of the study were the tertiary level EFL students who are studying in KTU Faculty of Literature, Department of Western Languages and Literature, in Turkey. The Simple Random Sampling Method was employed for sample selection. In the sampling process, randomly selected sample students were asked to fill questionnaire form. Following this step, 151 sample tertiary EFL students from various classes accepted answering the questionnaire and thus became the samples for the study (Table 1).

Table 1: Demographic Characteristics of the Staff in the Sample

		Frequency	Percentage (%)
Gender	Woman	109	72,2
	Man	42	27,8
Years	Pre. Year	30	19,9
	1st Year	71	47,0
	2nd Year	43	28,5
	3rd Year	3	2,0
	4th Year	4	2,6
	Total		100

In Table 1, it is seen that the majority of respondents (72.2%) were male and almost half (47.0%) were studying in their 1st Year.

The Scales Used in the Study, Reliability and Validity Analysis

As a means of collecting data for the study, survey method was employed. The questionnaire form is comprised of three main parts. The first part of the questionnaire contains questions asking for the demographic characteristics such as gender and year of study included. In the second part, there is one question for measuring foreign language students' learning achievements. In the last part of the questionnaire form, there are 37 questions. First 20 of these questions are intended to measure the five dimensions that are Active Involvement (8 questions), Organizing Learning (5 questions), Resource Management (2 questions), Coping Strategies (3 questions), and Time Management (2 questions) of Learning Strategies. And the remaining 16 questions are intended to measure the concept of Learners' Motivation. Both extrinsic and intrinsic dimensions have 8 questions each one. In third part of the questionnaire, a five-point Likert-type response scale was used and the samples answered questions ranging from 1 (strongly disagree) to 5 (strongly agree).

Questions were adapted from the study of Oxford (1996) to measure the five dimensions of the learning strategies. Questions were gathered under five different factors which were presenting five dimensions of the learning strategies independent variable in our study.

Learners' motivation scale was obtained from the study of Zubairi and Sarudin (2009). In this scale there were two dimensions such as extrinsic motivation of learners (eight questions) and intrinsic motivation of learners (eight questions). Also, mean of the foreign language students' academic grades were used to measure of their learning achievement. Exploratory factor analysis (EFA) was employed for the purpose of measuring the structural validity of the scales in this study. Cronbach's Alpha Method was also employed within the framework of the study in order to evaluate the internal consistency of the scale items.

The results of EFA and reliability analysis applied to demonstrate factor structure of the questions of learning strategies independent variable were given in Table 2 below. Principal Component Method was employed as Factor Derivation Method by referencing Okan and Akyuz (2015) in applied EFA.

Table 2: Results of Exploratory Factor Analysis, Confirmatory Factor Analysis and Reliability Analysis for Foreign Language Learning Strategies

Items		ACTIVE INVOLVEMENT	ORGANIZING LEARNING	RESOURCE MANAGEMENT	COPING STRATEGIES	TIME MANAGEMENT
AI1. When I read something in English, I usually read it more than once.		,794				
AI2. I say or write new expressions in English repeatedly in order to practice them.		,665				
AI3. I always go back over a test to make sure I understand everything.		,718				
AI4. I always try to evaluate my progress in learning English.		,946				
AI5. When studying for a test, I try to determine which concepts I don't understand well.		,521				
AI6. I learn from my mistakes in using English by trying to understand the reasons for them.		,504				
AI7. Whenever I have a question, I ask my teacher about it or try to find the answer in another way.		,933				
AI8. I actively look for people with whom I can speak English.		,935				
OL9. I always try to notice the similarities and differences between English and Turkish.			,596			
OL10. When I learn a new grammar rule, I think about its relationship to rules I have learned already.			,530			
OL11. When I study for my English course, I pick out the most important points and make charts, diagrams, and tables for myself.			,656			
OL12. I make summaries of what I have learned in my English class.			,853			
OL13. I try to find the meaning of a word by dividing it into parts that I understand.			,621			
RM14. I have a regular place set aside for studying.						,613
RM15. I arrange my schedule to make sure chat I keep up with my English class.						,844
CS16. When learning new English words, I say them over and over to memorize them.				,844		
CS17. When I do not understand a word in something I am reading, I try to guess its meaning from context.				,665		
CS18. I try to look for patterns in English without waiting for the teacher to explain the rules to me.				,787		
TM19. I often find that I don't spend much time studying English because of other activities.					,826	
TM20. When studying for a test, first I think about what the most important points are, instead of just reading everything over.					,836	
Reliability Analysis	Cronbach's Alpha*	,890	,684	, 707	,793	,495
EFA: Explained Variance	% of Variance	32,955	11,930	8,674	6,858	5,558
	Total Variance Explained (%)	65,975				
EFA: KMO and Barlett's tests	Kaiser-Meyer-Olkin (KMO) test	,779				
	Barlett's Test of Sphericity	x^2=2160,60 (p<,000)				

* Cronbach's Alpha was computed based on standardized items

As seen in Table 2, as a result of EFA, questions of the five dimensions of learning strategies variable are collected under five different factors. The obtained factor describes 65,975 % of the total variance. The results of the applied Bartlett's Test of Sphericity (x^2=2160,600; P<,000) and KMO Sample Suitability Test (,779) is the evidence for the appropriateness of the data to the factor analysis. The results of the applied reliability analysis show that the reliability of the obtained five factors was an acceptable level (α_1=,890; α_2=,684; α_3=,495; α_4=,707; α_5=,793).

The results of the EFA and reliability analysis for the scale of Learners' Motivation were given below in Table 3. Principal Component Method was employed as Factor Derivation Method in EFA. "Varimax Orthogonal Factor Rotation Method" was selected in applied factor analysis. According to Table 3, variables in our study were gathered under two factors as a result of applied EFA. The two-factor structure describes 75,794 % of the total variance. The results of the applied Bartlett's Test of Sphericity (x^2=3117,289 P<,000) and KMO Sample Suitability Test (,903) give evidence for the appropriateness of the data to the factor analysis.

The results of the applied reliability analysis show that the reliability of the obtained two factors was an acceptable level (α_1=,952; α_2=,931).

Table 3: Results of Exploratory Factor Analysis, Confirmatory Factor Analysis and Reliability Analysis for Learners' Motivation Scale

Items		**EXTRINSIC MOTIVATION**	**INTRINSIC MOTIVATION**
		EFA	EFA
MER1. I will need English for my future career.		,813	
MER2. I think it will make me a more knowledgeable person.		,778	
MER3. I think it will someday be useful in getting a job.		,826	
MER4. Other people will respect me more if I have knowledge of a foreign language.		,730	
MER5. My lecturer(s) encouraged me to learn a foreign language.		,929	
MER6. I need to complete a foreign language requirement to graduate.		,801	
MER7. My friend(s) encouraged me to learn a foreign language.		,953	
MER8. People will think highly of me.		,931	
MIR9. I learn a foreign language because it will allow me to meet and converse with a variety of people.			,809
MIR10. I learn a foreign language because I will be able to participate in the activities of other cultural groups.			,412
MIR11. I learn a foreign language because I enjoy meeting and listening to people who speak other languages.			,918
MIR12. I learn a foreign language because learning a foreign language is an enjoyable experience.			,532
MIR13. I learn a foreign language because if I were visiting a foreign country, I would like to be able to speak the language of the people.			,946
MIR14. I learn a foreign language because it is important for everyone to learn a foreign language.			,909
MIR15. I learn a foreign language because I want to read the literature of another culture in the original language.			,883
MIR16. I learn a foreign language because I would really like to learn many foreign languages.			896
Reliability Analysis	Cronbach's Alpha*	,952	,931
EFA: Explained Variance	% of Variance	58,213	19,487
	Total Variance Explained (%)	75,794	
EFA: KMO and Barlett's tests	Kaiser-Meyer-Olkin (KMO) test	,903	
	Barlett's Test of Sphericity	x^2=3117,289 (p<,000)	

* Cronbach's Alpha was computed based on standardized items

Findings

Pearson's correlation coefficients between the variables and descriptive statistics of the variables employed in the study were given in Table 5 below. Five Dimensions of the Learning Strategies show significant and positive correlations with the Learning Achievement (Active Involvement: r=,553 P<,01; Organizing Learning: r=,540 P< ,01; Resource Management: r=,365 P<,01; Coping Strategies: r=,436 P<,01; Time Management: r=,382 P<,01) variable discussed as the dependent variable of this study.

Learning strategies had significant and positive relationship with both Extrinsic (Active Involvement: r=,377 P<,01; Organizing Learning: r=,376; P< ,01; Coping Strategies: r=,429 P<,01; Time Management: r=,211 P<,01) and Intrinsic Motivation (Active Involvement: r=,411 P<,01; Organizing Learning: r=,222 P<,01; Resource Management: r=,168 P<,05; Coping Strategies: r=,385 P<,01; Time Management: r=,188 P<,05) variables except one factor.

Table 5: Descriptive Statistics of Variables and Pearson's Correlation Coefficients between the Variables

Variables	$\bar{X}$	SD	AI	OL	RM	CS	TM	ME	MI	LA
AI	3,701	,575	1							
OL	3,246	,662	,442**	1						
RM	3,218	,893	,366**	,354**	1					
CS	3,682	,742	,339**	,266**	,109	1				
TM	3,586	,826	,199*	,356**	,092	,289**	1			
EM	4,323	,825	,377**	,376**	,133	,429**	,211**	1		
IM	4,159	,752	,411**	,222**	,168*	,385**	,188*	,533**	1	
LA	3,357	,545	,553**	,540**	,365**	,436**	,382**	,627**	,617**	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Extrinsic and Intrinsic Motivation dimensions also discussed as mediator variables had significant and positive relationship with Learning Achievement (Extrinsic Motivation: r=,627 P<,01; Intrinsic Motivation: r=,617 P<,01). The correlations between the mediator variables and the dependent variables were analysed and it was seen that all of these coefficients were positive and significant.

Analysis of the correlation matrix is a significant issue in order to identify the multicollinearity problem. With the aim of avoiding the multicollinearity problem, correlation coefficients between the variables must not be higher than ,80. Based on this premise, a multicollinearity problem was not observed between the variables.

As it is stated above, total effect (βc) can be tested separately. The first way of finding the total effect is using Model-1. This gives the relationship between learning strategies (as independent variable) on foreign language students' learning achievement (as dependent variable).

In Table 6, the findings of the analysis are summarized. Coefficients that are seen in Table 6 under the column of Model-1 demonstrate that there are positive and significant relationships between AI (β= ,291, P <,01), OL (β= ,252, P <,01), RM (β= ,132, P <,05), CS (β= ,209, P<,05) and TM (β= ,162, P<,05). Based on these results which are compatible with our theoretical expectations, the first condition is provided. It can be said that the overall impacts between all five dimensions of the Learning Strategies and Learning Achievement is significant. Within this framework, it is understood that hypothesis H_{1a}, H_{1b}, H_{1c}, H_{1d}, and H_{1e} are supported.

Table 6: The Mediator Effect of Dimensions of Learners' Motivation in the Relationship between Learning Strategies and Learning Achievement

Dimensions of Variables		Model 1 Learning Achievement	Model 2 EM	Model 3 IM	Model 4 Learning Achievement
Learning Strategies	Active Involvement (AI)	291**	,191*	,306**	,147*
	Organizing Learning (OL)	,252**	,224*	-,011	,195**
	Resource Management (RM)	,132*	-,050	,027	,137*
	Coping Strategies (CS)	,209*	,307**	,266**	,046
	Time Management (TM)	,162*	,009	,051	,144*
Learners' Extrinsic Motivation (EM)					,269**
Learners' Intrinsic Motivation (IM)					,301**
F		28,763**	11,449**	9,149**	40,873**
Adjusted R Square		,481	,258	,214	,650

* p<,05; ** p<,01

Total effect can also be measured by finding the sum of direct and indirect effects (βc = βc '+ βa.βb). This is the second condition. According to Model-2, Model-3, and Model-4 which are needed to measure the direct and indirect effects. Model-2 and Model-3 are needed to find out the mediation effect for obtaining significant relationship between dimensions of Learning Strategies and Learners' Motivation. And according to the findings, there is an increase in the perception of three dimensions of the Learning Strategies which cause statistically significant increase both at Learners' Extrinsic Motivation (AI: β= ,191, P <,05; OL: β= ,224, P <,05; CS: β= ,307, P<,01) and two dimensions the Intrinsic Motivation (AI: β= ,306, P <,01; CS: β= ,266, P<,01). In this context, hypothesis H_{2a}, H_{2b}, H_{2d}, H_{3a}, and H_{3d} are also supported. And also Model-4 is needed to get the direct effect. Coefficients which are under the Model-4 column show a part of the mediation effect. It is understood that there is a significant relationship between dimensions of Learning Strategies and Learning Achievement (AI: β= ,147 p<,05; OL: β= ,195 p<,05; RM: β= ,137 p<,05; TM: β= ,144 p<,05) and also a relationship between Learners' Extrinsic & Intrinsic Motivation and Learning Achievement (EM: β= ,269 p<,01; IM: β= ,301 p<,01). According to these results it is also seen hypothesis H_{4a} and H_{4b} are supported.

CONCLUSION

The obtained relationship pattern that was observed reveals that extrinsic motivation and intrinsic motivation variables play a partial mediation role between Active Involvement and Learning Achievement variables, and also a full mediation role between the Coping Strategies and Learning Achievement variables. The results can provide evidence only for the mediation effect of Extrinsic Motivation on the relationship between Organizing Learning and Learning Achievement. However, it cannot provide any evidence for any of the mediation effect of Extrinsic Motivation and Intrinsic Motivation variables on the relationship between Resource Management, Time Management and Learning Achievement.

REFERENCES

Ariogul, Sibel; Dalim Cigdem Unal; Irem Onursal (2009). "Foreign language learners' beliefs about language learning: A study on Turkish university students". *Procedia Social and Behavioral Sciences*, 1500–1506.

Arslan, Mustafa ve Azamat Akbarov (2010). "Türkiye'de yabancı dil öğretiminde motivasyon-yöntem sorunu ve çözüm önerileri", *Selçuk Üniversitesi Edebiyat Fakültesi Dergisi*, Yıl/ Year:, Sayı: 24, 179–191.

Bailey, Phillip; Anthony J. Onwuegbuzie; Christine E. Daley (2000), "Using learning style to predict foreign language achievement at the college level", *System*, 28, 115-133.

Baron, R. M. & D. A. Kenny (1986). The Moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 6, 1173-1182.

Baş, Gökhan (2012) "The effect of teaching learning strategies in an English lesson on students' achievement, attitudes, and metacognitive awareness", *Journal of Theoretical Educational Science*, 5(1), 49-71.

Bernaus, Mercè (1995) "The role of motivation in the learning of English as a foreign language", BELLS: Barcelona English Language and Literature Studies, Vol. 6, 11-21.

Chan, Wai Meng; Kwee Nyet Chin; Titima Suthiwan (2011). Foreign language teaching in Asia and beyond: current perspectives and future directions, Walter de Gruyter, Boston.

Demir, Ahmet ve Fatma Açik (2011). "Türkçenin yabancı dil olarak öğretiminde kültürlerarası yaklaşım ve seçilecek metinlerde bulunması gereken özellikler", *TÜBAR-Türklük Bilimi Araştırmaları,* Sayı: 30, 51-72.

Dörnyei, Zolt'n (1998). "Motivation in second and foreign language learning", *Language Teaching*, 31(03), 117 135.

Dornyei, Zolt'n and Angi Malderez (1997). "Group dynamics and foreign language teaching", *System*, Vol. 25, No. 1, 65-81.

Ehrman, Madeline and Betty Lou Leaver (2003). "Cognitive styles in the service of language learning", *System*, 31, 393–415.

Hamzadayı, E. (2010). "Bütünleştirilmiş Öğrenme-Öğretme Yaklaşımının Okuduğunu Anlama ve Yazılı Anlatım Becerilerine Etkisi". *Gaziantep Üniversitesi Sosyal Bilimler Dergisi*, 9(3), 631-668.

Horwitz, Elaine K. (1999), "Cultural and situational influences on foreign language learners' beliefs about language learning: a review of BALLI studies", System, 27, 557-576.

Kormos, Judit and Kata Csize'r (2008). "Age-related differences in the motivation of learning English as a foreign language: attitudes, selves, and motivated learning behavior", *Language Learning*, 58:2, 327–355.

Krishnan, K.Sarojani Devi; Qusai Ali Khalaf Al Lafi and Zahid Hussain Pathan (2013), "Motivational factors that impact English language learning in an arab model school, jordan: an empirical investigation", *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)*, 4(6), 867-871.

O'Malley, J.M., and Chamot, A.U. (1990). Learning strategies in second language acquisition. Cambridge: Cambridge University Press.

Okan, Tarhan and Ahmet Mutlu Akyüz (2015). "Exploring the relationship between ethical leadership and job satisfaction with the mediating role of the level of loyalty to supervisor", *Business and Economics Research Journal,* 6(4), 155-177.

Okan Tarhan; Sarı Selcen; Tülay İlhan Nas (2014). "Yönetim kurulu yapısı ile finansal performans arasındaki ilişkide uluslararası çeşitlenmenin aracılık etkisi", *YÖNETİM: İstanbul Üniversitesi İşletme İktisadı Enstitüsü Dergisi*, 77, 39-78.

Oxford, Rebecca L. (1996). Language learning motivation: pathways to the new century, Second Language Teaching Curriculum Center, USA.

Oxford, Rebecca L. and Madeline E. Ehrman (1995). "Adults' language learning strategies in an intensive foreign language program in the United States", System, Vol. 23, No. 3, 359-386.

Rahimia, Mehrak and Maral Katal (2012). "Metacognitive strategies awareness and success in learning English as a foreign language: an overview", *Procedia - Social and Behavioral Sciences*, 31, 73-81.

Root, Elizabeth (1999). Motivation and learning strategies in a foreign language setting: a look at a learner of Korean, Center for Advanced Research on Language Acquisition, University of Minnesota.

Tercanlioglu, L. (2004). "Exploring gender effect on adult foreign language learning strategies", *Issues in Educational Research*, 14(2), 181-193.

Tuan, Luu Trong (2012), "An Empirical Research into EFL Learners' Motivation", *Theory and Practice in Language Studies*, Vol. 2, No. 3, 430-439.

Ushida, Eiko (2005). "The Role of Students' Attitudes and Motivation in Second Language Learning in Online Language Courses", *CALICO Journal*, 23 (1), 49-78.

Yavuz, Mehmet Ali ve Meliha R. Şimsek (2008). "Yabancı dil ögretim yöntemlerinin eytişimsel incelemesi", *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, Cilt: 10, Sayı: 4, 47-64.

Zhao, Lei (2012) "Investigation into Motivation Types and Influences on Motivation: The Case of Chinese Non-English Majors", *English Language Teaching*, Vol. 5, No. 3, 100-122.

Zubairi, Ainol Madziah and Sarudin, Isarji (2009). "Motivation to learn a foreign language in Malaysia", *GEMA Online Journal of Language Studies*, 9 (2). 73-87.

THE EFFECT OF STRATEGY INSTRUCTION ON STUDENT SUCCESS

Abdulkadir DURMUŞ
Anadolu University, Turkey
adurmus@anadolu.edu.tr

ABSTRACT
This study aimed to find out the effect of direct and indirect teaching of learning strategies on student success. The study was conducted at Anadolu University School of Foreign Languages (AUSFL) in 2015 - 2016 Academic Year Spring Term. Participants of the study were 40 English prep class students from two different classes at B level. 20 of these students formed experimental group and the other 20 control group through random selection. The study was conducted in two steps. First, mostly preferred learning strategies of the students were identified through "Learning Strategies Scale" developed by Güven (2008). Then, the least two preferred strategies were identified according to the scale, and these strategies were taught students from experimental group through direct and indirect teaching for three weeks. The least commonly used strategies were found to be Organizing Strategies and Comprehension Monitoring Strategies. After the completion of instruction for three weeks both experimental and control groups were given an achievement test and significance of the difference between the two groups were analyzed through Mann-Whitney U test through SPSS 22.0 program. Results of the study revealed that there was a significant difference between control and experimental group in terms of success.
Key words: Learning Strategies, Strategy teaching, GSE, Language teaching

INTRODUCTION

Uniqueness of the individual is prioritized in today's understanding of education, and each individual's having his or her own unique approach to learning is emphasized. The effect of those approaches is reflected on the performances of individuals in their own learning processes. For this reason, in order to provide a qualified learning environment, various learning styles and strategies should be supported in a comprehensive way, and appropriate to individual differences, as stated by Gencel (2007). Within this framework, the effect and significance of learning strategies appear in a distinct way. Güven (2004) stated that learning strategies were important in terms of having learners reach the information resources in the fastest way, and Erdem (2005) considered learning strategies important in terms of their providing learners become aware of their own learning types and facilitating them develop autonomous learning skills, and stated that in order to follow effective ways in terms of choosing what to learn, what to acquire, how to organize and how to integrate the information, learners would need learning strategies. Özer (2002) indicated that in addition to enabling students learn in an easy and permanent way, learning strategies fulfilled some other significant functions such as having the students become conscious learners, increasing productivity in learning, having them qualified with independent learning skills, helping learning within a motivated and enjoyable manner and providing a basis for preparations for post-school learning activities.

Leaning strategies have been defined within various perspectives in literature. Özer (1998) defined learning strategies as each one of the techniques facilitating a learner's independent learning; and including behaviors and ideas that help an individual pursue an effective information processing during the learning. As for Tay (2004), he defined learning strategies as efforts for adopting the information learners receive during their learning process or individual studies and preparations in a meaningful interpretation through some mental processes. Sünbül (1998) explained learning strategies as techniques, principles or habits that show the approaches of learners towards a task or situation and help them accomplish their own learning tasks in an autonomous way. Güven (2008) defined learning strategies as techniques students use to solve problems in the learning process or the operations that enable students to learn on their own. Şahin and Uyar (2013) defined learning strategies as necessary methods and techniques that are required for a permanent and effective learning. Senemoğlu (2015) defined learning strategies as operations that are used by learners to learn on their own through some behavioral and mental processes including some cognitive strategies such as storing and remembering, and directive and executive cognitive processes; that are used by learners.

As it can be seen in abovementioned definitions, the most common expression preferred by the researchers was *independent learning* or *learning on their own*. Based on this perspective, learning strategies can be defined as unique, learner-specific operations developed to help learners get maximum efficiency in the process of receiving and remembering information on their own.

Learning strategies have been classified in various forms by different researchers in literature. Senemoğlu (2015) classified learning strategies in the framework of cognitive and executive cognitive processes as attention strategies, strategies for storing in short term memory, strategies for increasing coding, strategies for remembering and strategies for monitoring comprehension. Gagne and Driscoll (1988; cited in Sübaşı, 2000; Güven, 2004)

based their classification of learning strategies on information processing theory as well. They classified learning strategies in five groups such as attention strategies, strategies for enhancing short term memory, strategies for increasing coding, strategies for remembering, and monitoring strategies. Weinstein and Mayer (1986) classified learning strategies as rehearsal, elaboration, organizing, comprehension monitoring and affective strategies (cited in Güven, 2004, 2008; Erdem, 2005). This classification has been reported to be the most preferred one in literature by various researchers (Güven, 2004, 2008; Tay, 2004; Erdem, 2005). Weinstein and Mayer's classification of learning strategies was described as in the follow in literature: *Rehearsal Strategies* require mental repetitions that enable one to learn and remember the information exactly as it had been stored in the memory. Rehearsal strategies are the earliest learned strategies. They are learned in nursery school for basic learnings, and prepare learners for coping with more complex learning situation they might come across in advance. Activities such as underlying the important parts in a text, note taking with exactly the same expressions in the text, copying the material, and memorizing requires rehearsal strategies (Özer, 1998; Güven, 2004; Erdem, 2005).

Elaboration Strategies are the strategies that help learners develop relationship between newly learned information and previously learned knowledge which is stored in long term memory. In other words, they are the strategies that provide meaningful learning for learners by setting relationship among information units. Building mental images, using newly learned items in the sentences, creating analogies, summarizing, productive not taking, and asking and answering questions on one's own can be listed among elaboration strategies (Özer, 1998; Güven, 2004; Erdem, 2005).

Organizing Strategies are the strategies that help learners reorganize the information to be learned. They are used in accompany with elaboration strategies. Grouping, interpreting terms or ideas together, examining information by dividing into pieces, identifying main idea of a text on a subject or catching details deducing from main idea, reorganizing a material to make it more meaningful require the usage of organizing strategies. Particularly, identifying main idea and supporting details of a text or idea, building mind maps and tabulation and scheduling are mentioned among significant organizing strategies in the process of learning (Özer, 1998; Güven, 2004; Erdem, 2005).

Comprehension Monitoring Strategies help learners go into their own learning processes, and organize, perform and monitor their learnings, and if needed change their learning tactics as a result of this reflection. In order these strategies to be used affectively, students are expected to be aware of their own cognitive structures and metacognition. Identifying and defining the problems related to learning, concentrating on and leading one's reactions, self-reinforcement and evaluation, and error correction and creating solutions are activities that require comprehension monitoring strategies (Özer, 1998; Güven, 2004; Erdem, 2005). Deriving from this information, students using comprehension monitoring strategies can be said to be the ones who pursue their own learnings in an effective and successful way.

Affective Strategies help learners overcome some motivational and affective barriers they encounter occasionally during their learning. They have important role in the appearance of effective learning. These strategies help creating suitable internal and external conditions for learning, and pursuing consistent learning. Being alert to external distractors that might hinder learning, staying focused, self-motivation, choosing a silent place to study in order to get rid of external distractors, identifying priorities while studying in order to manage time effectively, developing positive self-reinforcers, and developing a timetable are among affective strategies (Özer, 1998; Sübaşı, 2000; Güven, 2004; Erdem, 2005).

How to teach learning strategies to students is among the significant issues as well as the learning strategies. Demirel (1993) stated that the scope of an effective instruction should be teaching students how to learn, remember, think and motivate themselves, and to achieve this, teachers were recommended to consider the aims related to both learning processes and products, and make efforts to fulfil both aims. Teaching how to learn through instruction, in other ways teaching how to use learning strategies, might affect student characteristics and coding process during the instruction. Özer (1998) indicated that students be taught some knowledge and skills about learning strategies prior to strategy instruction. Özer (1998) listed the knowledge and skills that should be taught students as in the framework of three dimensions including *learning strategies and their characteristics* which aimed to answer questions such as what the learning strategies are, what the differences and similarities among them are, and what kind of students they are suitable for; *how to use learning strategies* aiming to answer questions such as how each learning strategy is used or implemented and what should be taken into consideration to receive maximum benefit from strategies; *Where to use learning strategies* that aimed to find out answers for the questions where each learning strategy should be used more effectively and which learning strategy is more appropriate for an identified aim. Özer (1998) suggested two approaches in teaching learning strategies; direct or indirect instruction. Direct instruction requires independent instruction or teaching learning strategies as class subjects in

a direct teaching. On the other hand, indirect instruction of learning strategies is conducted spontaneously in accordance with the subject that requires strategy usage. The teacher can either directly inform students about the strategy or just have them use the strategy correctly as a result of various rehearsals.

There are various studies in literature on identification, classification, instruction and usage levels of learning strategies; examination of learning strategies regarding some variables such as gender, education level, various school subjects and learning types. Efe, Özturan Sağırlı, Ünlü, & Kaşkaya (2009) conducted a study based on the classification of Weinstein and Mayer on senior and junior students studing at primary school mathematics, science, social sciences and class teaching departments aiming to find out relationship among the learning strategies they used and their departments, genders and class levels. The strategiesused in the study were grouped under five titles such as rehearsal, elaboration, organizing, comprehension monitoring and affective strategies. Results of the study revealed that girls used all types of strategies women than men. As for departments, there was significant difference in terms of rehearsal, elaboration and affective strategies. Similarly Şahin and Uyar (2013) conducted a study on education faculty students to find out the learning strategies they used, and whether their academic success differed in terms of using learning strategies or not. Results of the study revealed that the most frequently used strategies were rehearsal, elaboration, attention, metacognition, affective and recalling strategies. The fact that academic success of students changed in accordance with the strategies they used was another finding of the study.

Demir (2013) aimed to find out the strategies eighth grade students used while studying grammar subjects in Turkish lessons. Results of the study showed that students used rehearsal strategies, mental rehearsal strategies, grouping strategies, mental support strategies, remembering strategies and executive cognitive strategies very often but they hardly ever used articulation, organization and motivation strategies. Tay (2004) conducted a study to find out how secondary school students used elaboration strategies in social sciences lessons and found out that students usually preferred explicit and implicit repetition, coding, articulation, organizing and memory strategies in social sciences lessons.

Çalışkan and Sünbül (2011) conducted a study to find out the effect of instruction of learning strategies on metacognitive knowledge, using metacognitive skills and student success. The results of the study revealed that strategy instruction increased strategy awareness, metacognitive knowledge, and it was effective in using metacognitive skills. It was suggested in the study that in order to have students gain metacognitive skills, cognitive skills should be taught first. Yeşilyurt (2013) aimed to find out the awareness level of teachers on learning strategies and found out that teachers were relatively aware of learning strategies, however, their awareness level was not high enough for the implementation of teaching learning strategies to students.
There are various studies on language learning strategies in literature as well. Most of these studies were based on the classification made by Oxford (1990) and Strategy Inventory for Language Learning (SILL) developed by Oxford (1990) Ünal, Onursal-Ayırır and Arıoğul (2011) conducted a study to find out how university students studying English, German and French at prep classes used strategies through SILL, and as a result of their study, they found out that students should be taught memory strategies, cognitive strategies and affective strategies. Demirel (2012) aimed to find out learning strategies university students used while learning English, and whether those strategies had a significant difference in terms of gender and academic success. She found out that students used language learning strategies at moderate level in general, and compensation strategies were preferred the most and memory strategies the least. Moreover, it was found out that girls used strategies more than boys, and the more the use of language learning strategies increased, the more academic achievement was observed.
As it can be understood from the studies mentioned above, studying on the research on learning strategies in literature, it would be seen that most of the studies focused on identification of learning strategies and how those strategies were used by learners in different fields. Compared to the amount of the studies conducted on learning strategies, it was observed that the number of the studies focusing on direct and indirect instruction of learning strategies remained relatively limited.

THE STUDY

This study aimed to identify learning strategies used by students studying at English prep class in 2015 – 2016 academic year spring term at Anadolu University School of Foreign Languages (AUSFL) and find out the least used learning strategies. Moreover, the study aimed to conduct direct and indirect strategy teaching towards the least used strategies and find out whether strategy instruction had a significant contribution to student success. Furthermore, considering the findings of the study, suggestions that would contribute to the betterment of the curriculum in AUSFL were made. Within the light of these aims the following questions were asked as research questions of the study:

1. How much do the students use learning strategies?
2. Which strategies are the least preferred ones by the students?

3. Does the direct and indirect instruction towards strategy usage affect student success significantly?

Considering its aim, present study is designed both as descriptive and quantitative research. Learning strategies preferred by students were identified and described through descriptive statistics and as for quantitative research, results of the achievement test applied to both experimental and control groups were analyzed to find out whether there was a significant difference between two groups or not. At the beginning of the study, participants were given Learning Strategies Scale and as a result of this, the least two preferred strategies were identified. Then, experimental and control groups were identified through random selection, and the least preferred strategies were taught through direct and indirect strategy teaching for three weeks (six hours a week) to experimental group. Since the students at the same level at AUSFL have to follow the same syllabus, and since all the students at the same level have to enter the same exams, in order not to aggrieve the students, the routine syllabus of the students was followed and topics in the course book were covered. Strategy instruction was organized in accordance with these topics and it was supported with some supplementary materials. The school administration and other teachers of these groups were informed about the study. At the end of the study both experimental and control groups were applied an achievement test consisting of questions that required usage of organizing and comprehension monitoring strategies.

Participants

Participants of the study were 40 students, 21 of whom were males and 19 females, aged between 18 and 22 studying at English prep class B level at AUSFL in 2015 – 2016 academic year spring term. The students were placed in either C or B level according to the results of the placement test that had been applied at the beginning of fall term of 2015 – 2016 academic year. The ones who successfully completed C level, and the ones who failed at B level were settled in B level in spring term by school administration. Participants of the students were among those students.

Data Collection Tool

"Learning Strategies Scale" that was developed by Güven (2004) and revised by Güven (2008) was used to find out learning strategies of participants. The scale is organized as a five point Likert-type scale. The scale consisted of 35 items related to elaboration, comprehension monitoring, organizing, affective and rehearsal strategies. Cronbach Alpha reliability value of the scale was found as.87

Another data collection tool used in the study was the achievement test which included questions that required the use of organizing strategies and comprehension monitoring strategies prepared by the researcher. The test consisted of 65 questions including multiple choice questions measuring some reading skills such as main idea and supporting details, inference questions and deictic expressions; open ended questions; gap filling, matching and odd word out questions measuring vocabulary knowledge. The test comprised the subjects that were covered in syllabus. The test was scored out of 100, and each question had the same value.

Data Analysis

In order to find out the learning strategies and thus the least preferred learning strategies preferred by students, calculations of frequency, percentage and arithmetic mean were used. Can (2016) and Büyüköztürk (2016) suggested nonparametric tests, such as Mann-Whitney U test for the cases in which the number of data or participants could not meet the normality distribution. Considering their suggestions, Mann-Whitney U test was used to find out whether there was a significant difference between experimental and control group after strategy instruction. Data were analyzed through SPSS 22.00 package program.

FINDINGS and DISCUSSION

First step of the study was to find out the frequency of the usage of learning strategies by the students. All of the participants (n=40) were given Learning Strategies Scale, and as a result of this, the most frequently preferred learning strategies were found to be affective (87%) and rehearsal (75%) strategies whereas the least preferred ones were organizing (17%) and comprehension monitoring (50%) strategies. Table 1 shows the answers of the students for each item in the scale with frequencies and percentages. These findings have some similar results with the studies conducted in literature before. Using the first version of the scale, Güven (2004) found out that students used elaboration and comprehension monitoring strategies the most; and rehearsal and organizing strategies the least in her study. Findings of this study showed parallelism with present study regarding the least use of organizing strategies. However, affective strategies were found to be among the least preferred strategies in Güven's (2004) study. The reason for this difference was thought to be the difference between the participants of two studies in terms of age, education level and learning experiences as the participants of Güven's study were first, second, and third class high school students wheras the participants of the present study were university students. Moreover, the number of the participants in both studies were quite different; Güven (2004) had 880 participants in her study.

Table 1: Distribution of the answers of the students to Learning Strategies Scale and percentages for each strategy

Strategy	ItemNo	1		2		3*		In Group (%)
		N	%	N	%	N	%	
Elaboration	1	28	**70**	10	25	2	5	70
	2	19	**47,5**	16	40	3	12,5	
	3	9	22,5	10	25	21	**52,5**	
	4	23	**35**	8	20	9	22,5	
	5	15	37,5	16	**40**	9	22,5	
	6	32	**80**	4	10	4	10	
	7	9	22,5	7	17,5	24	**60**	
	8	24	**60**	9	22,5	7	17,5	
	9	35	**87,5**	2	5	3	7,5	
	10	26	**65**	7	17,5	7	17,5	
Comprehension Monitoring	11	3	7,5	8	20	29	**62,5**	50
	12	22	**55**	8	20	10	25	
	13	9	17,5	12	30	19	**47,5**	
	14	15	**37,5**	14	35	11	27,5	
	15	8	20	8	20	24	**60**	
	16	20	**50**	9	22,5	11	27,5	
	17	23	**57,5**	9	22,5	8	20	
	18	0	0	4	10	36	**90**	
Organizing	19	8	20	12	30	20	**50**	17
	20	10	25	8	20	22	**55**	
	21	12	30	10	25	18	**45**	
	22	19	**47,5**	11	27,5	10	25	
	23	14	35	9	22,5	17	**42,5**	
	24	6	15	9	22,5	25	**62,5**	
Affective	25	32	**80**	4	10	4	10	87
	26	31	**77,5**	3	7,5	6	14,5	
	27	34	**85**	3	7,5	3	7,5	
	28	24	**60**	9	22,5	7	17,5	
	29	16	40	4	10	20	**50**	
	30	19	**47,5**	9	22,5	12	30	
	31	22	**55**	8	20	10	25	
Rehearsal	32	15	**37,5**	13	32,5	12	30	75
	33	23	**57,5**	7	17,5	10	25	
	34	25	**62,5**	9	22,5	6	15	
	35	11	27,5	8	20	21	**52,5**	

*1: Definitely suitable for me and Suitable for me; 2: Somehow suitable for me; 3: Unsuitable for me and Definitely unsuitable for me

Demir (2013), Şahin and Uyar (2013) and Çalışkan and Sünbül (2011) also found out organizing strategies among the least preferred strategies. Findings of the study revealed that students preferred affective strategies the most

which was considered surprising because affective strategies were also among the least preferred strategies in literature. The reason for this was thought to be related to the educational background of the students. Participants of the study had entered university entrance exam almost one year before the study. This exam was so demanding that it required high concentration, motivation, self-discipline, and stress-overcoming skills to be successful. Thus, the participants of the study were thought to develop those skills and hence affective strategies while preparing for the exam. Deriving from the findings of the study it can be said that students were still actively using affective strategies.

Having identified the strategies used by the students, direct and indirect strategy instruction on organizing strategies and comprehension monitoring strategies to experimental group which was randomly selected was conducted. The instruction lasted three weeks. At the end of the instruction, both experimental and control groups were given the achievement test. The scores of both experimental and control group students are shown in Table 2.

Table 2: Achievement Test scores of experimental and control group

Experimental Group		Control Group	
Student	Score	Student	Score
1	83	1	49
2	69	2	59
3	67	3	31
4	86	4	40
5	47	5	43
6	64	6	37
7	67	7	50
8	68	8	72
9	66	9	42
10	52	10	56
11	76	11	54
12	68	12	48
13	36	13	64
14	40	14	67
15	58	15	71
16	82	16	27
17	64	17	23
18	64	18	44
19	66	19	37
20	68	20	50

The results of Mann-Whitney U test comparing the scores of achievement test are given in Table 3. Mann-Whitney U test results revealed that there was a significant difference between experimental and control group ($p<.05$). These results were parallel with the results of Çalışkan and Sünbül's (2011) and Şahin and Uyar's (2013) findings. Deriving from the results of the present study which were supported by the findings of the previous studies in literature, it can be said that direct or indirect strategy instruction has positive contributions to student success.

Table 3: Mann-Whitney U test results comparing the scores of achievement test

Group	N	Mean Rank	Sum of Ranks	U	P*
Exp.	20	26,3	526	84	0,002
Control	20	14,7	294		

*p<.05

CONCLUSION

Findings of the study revealed that students respectively preferred affective, rehearsal, elaboration, comprehension monitoring and organizing strategies. Within the light of these findings, direct and indirect instruction towards organizing and comprehension monitoring strategies were conducted. Findings of the study showed the effectiveness of direct and indirect strategy instruction. The least preferred strategies were focused in present study, however, the other strategies are recommended to be taught through direct instruction occasionally.

The sampling of the study's being limited to 40 students (20 for experimental and 20 for control group) from B level; its lasting for only three weeks; and not being able to give a follow up test to students due to time constraint were among the limitations of the study. Despite these limitations, studies of more comprehensive and long term strategy instruction with larger samplings from different settings such as other levels for AUSFL are thought to provide positive contributions for strategy usage, and hence success of students. Moreover, since the present study revealed the positive effects of strategy instruction on student success, direct or indirect strategy instruction is suggested to be added in the curriculum of Anadolu University School of Foreign Languages (AUSFL). Furthermore, while preparing the syllabi and supplementary materials, for the program in AUSFL, embedding some directions and guidelines for direct and indirect strategy instruction considering required strategies is recommended as this will create an awareness for teachers in terms of strategy teaching. Finally, considering the variety of educational backgrounds of the teaching staff at AUSFL, a needs analysis on strategy instruction is recommended and as a result of this analysis in service trainings on strategy instruction are thought to be useful in terms of the effectivity of teaching.

REFERENCES

Büyüköztürk, Ş. (2016). *Sosyal Bilimler için Veri Analizi El Kitabı* (22. b.). ANkara: Pegem Akademi.
Can, A. (2016). *SPSS ile Bilimsel Araştırma Sürecinde Nicel Veri Analizi* (4. b.). Ankara: Pegem Akademi.
Çalışkan, M., & Sünbül, A. M. (2011). Öğrenme Stratejileri Öğretiminin Yürütücü Biliş Bilgisine, Yürütücü Biliş Becerilerini Kullanmaya ve Başarıya Etkisi (İlköğretim 6. Sınıf Türkçe Dersi Örneği). *Kuram ve Uygulamada Eğitim Bilimleri, 11*(1), 133-153.
Demir, T. (2013). Türkçe Derslerinde Dilbilgisi Konuları Öğrenilirken Kullanılan Öğrenme Stratejileri Üzerine bir Değerlendirme. *Adıyaman Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 6*(11), 167-206.
Demirel, M. (1993). Öğrenme Stratejilerinin Öğretimi. *Eğitim ve Bilim, 12*(88), 52-59.
Demirel, M. (2012). Üniversite Öğrencilerinin Kullandıkları Dil Öğrenme Stratejileri. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 43*, 141-153.
Efe, N., Özturan Sağırlı, M., Ünlü, İ., & Kaşkaya, A. (2009). Öğrenme Stratejilerinin Çeşitli Değişkenlere göre İncelenmesi. *Erzincan Eğitim Fakültesi Dergisi, 11*(2), 227-238.
ERdem, A. R. (2005). Öğrenmede Etkili Yollar: Öğrenme Stratejileri ve Öğretimi. *İlöğretim-Online, 4*(1), 1-6.
Gagne, R. M., Briggs, L. J., & Wager, W. W. (1992). *Principles of Instructional Design.* Orlando: Harcourt Brace College Publishers.
Gencel, İ. E. (2007). Kolb'un Deneyimsel Öğrenme Kuramına Dayalı Öğrenme Stilleri Envanteri III'ü Türkçeye Uyarlama Çalışması. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 9*(2), 120-139.
Güven, M. (2004). *Öğrenme Stilleri ile Öğrenme Stratejileri Arasındaki İlişki* . Eskişehir: Anadolu Üniversitesi.
Güven, M. (2008). Development of Learner Strategies Scale: Study of Validation and Reliability. *World Applied Sciences Journal, 4*(1), 31-36.
Oxford, R. (1990). *Language learning strategies: What every teacher should know.* New York: Newbury House.
Özer, B. (1998). Öğrenmeyi Öğretme. A. Hakan içinde, *Eğitim Bilimlerinde Yenilikler* (s. 146-164). Eskişehir: Anadolu Üniversitesi.
Özer, B. (2002). ilköğretim ve Ortaöğretim Okullarının Eğitim Programlarında Öğrenme Stratejileri. *Eğitim Bilimleri ve Uygulama, 1*(1), 17-32.
Senemoğlu, N. (2015). *Gelişim, Öğrenme ve Öğretim; Kuramdan Uygulamaya* (24. b.). Ankara: Yargı Yayınevi.
Sübaşı, G. (2000). Etkili Öğrenme: Öğrenme Stratejileri. *Milli Eğitim Dergisi.*(146), 1-4.
Sünbül, A. M. (1998). *Öğrenme Stratejilerinin Öğrenci Erişi ve Tutumlarına Etkisi (Yayımlanmamış Doktora Tezi).* Ankara: Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü.
Şahin, H., & Uyar, M. (2013). Öğrenme Stratejileri Kullanımının Akademik Başarıya Yansımaları. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 13*(1), 164-177.
Tay, B. (2004). Sosyal Bilgiler Dersinde Anlamlandırma Stratejilerinin Yeri ve Önemi. *GAzi Üniversitesi Kırşehir Eğitim Fakültesi, 5*(2), 1-12.
Ünal, D. Ç., Onursal-Ayırır, İ., & Arıoğul, S. (2011). İngilizce, Almanca ve Fransızca Öğrenen Üniversite Öğrencilerinde Yabancı Dil Öğrenme Stratejilerinin kullanımı. *Hacettepe Üniversitesi eğitim Fakültesi Dergisi, 41*, 473-484.
Yeşilyurt, E. (2013). Öğretmenlerin Öğrenme Stratejilerine İlişkin Algıladıkları Farkındalık Düzeyi. *Türkiye Sosyal Araştırmalar Dergisi, 17*(1), 113-135.

THE IMPACT OF PUBLICLY FUNDED ENTREPRENEURSHIP PROJECTS LED IN HIGHER EDUCATION CONTEXTS: A CASE-STUDY

Carlo GIGLIO, Ph.D.
Research Fellow in Creativity and Innovation
Lecturer on contract in Innovation Management and Project Management
Department of Mechanical, Energy and Management Engineering
University of Calabria, Italy

ABSTRACT
This paper deals with the assessment of entrepreneurship education outcomes coming from projects led in higher education contexts. In particular, it proposes a project-study in order to identify group-level factors and sub-factors involved in a publicly funded entrepreneurship project, and to capture the corresponding impacts. The methodological approach combines the literature review for the identification of the above mentioned factors and sub-factors with the adoption of a panel of experts for an overall qualitative assessment of project's impacts. The main findings highlight how the project at hand is considered as highly relevant under different perspectives of analysis. It has proved to be relevant in terms of increasing regional economic growth, improving life and health expectancy as well as living standards, reducing social costs and pollution rates on a regional scale, and increasing corporate performance.

INTRODUCTION
Entrepreneurship is generally considered as a key factor fostering economic growth and development, especially in regional contexts of analysis. In addition, universities and other research-related institutes play a key role in creating and/or improving entrepreneurial opportunities (Laukkanen, 2000) by means of researching, developing and transferring new technological solutions. Moreover, a further concept, which is worthy of attention, is about teaching efforts led in universities. In fact, some studies (Laukkanen, 2000) emphasize how entrepreneurship education is as important as the above mentioned activities in order to develop entrepreneurial initiatives on a regional scene. Hence, it is worth paying attention to entrepreneurship education for those scholars interested in both the entrepreneurship and education fields. Such a remark is even more relevant when it comes to consider the relative importance of research, development, technology transfer and education in successful entrepreneurial paths. In fact, education has proved to be the most relevant factor since it acts as both the dominant and starting point for successful entrepreneurial activities born in higher education contexts (Laukkanen, 2000). In addition, entrepreneurial education increases entrepreneurial intention (Maresch, Harm, Kailer, & Wimmer-Wurm, 2016). Such a research results has been demonstrated in different contexts, though different entrepreneurship education efforts take place in each setting. Recent studies in Spanish universities (Iglesias-Sánchez, Jambrino-Maldonado, Peñafiel Velasco, & Kokash, 2016) have proved further such a result by adopting the Ajzen's influential model in order to identify also the main improvements about the study programmes design, which may increase the entrepreneurial intention of university students. Other studies (Grimaldi, Kenney, Siegel, & Wright, 2011) have showed how universities in the United States affect the commercialization of research, which is intended to be the end result of educational efforts associated with entrepreneurial intentions. Recent researches (Afriyie & Boohene, 2014) conducted in Africa have showed how entrepreneurship education has proved to be also an additional solution in order to alleviate the effects of labour market saturation in other industries. As a matter of fact, it is an alternative solution to the employment of people as civil servants. Such an evidence from African countries and, in particular, from Ghana, emphasizes how educating people in the field of entrepreneurship means also developing an entrepreneurial culture, especially for university students (Afriyie & Boohene, 2014), which may become job creators rather than job seekers. Moreover, such an effort may lead in the long run also to decrease unemployment and increase economic growth and development on a regional level (Afriyie & Boohene, 2014). Though recent studies conducted by the OECD (2013) have shown significant cross-country differences about individual's awareness related to the supporting role of entrepreneurship education, entrepreneurial intention is still influenced relevantly by it across countries. A comparative survey-driven research involving all education levels in the United States and in France (Carayannis, Evans, & Hanson, 2003) has led to understand how American students are more positive than French ones concerning entrepreneurship education impact. In the United States, innovation-oriented entrepreneurship programmes have been designed in order to help today's students succeeding within innovative, product-focused, cross-disciplinary teams (Bilén, Kisenwether, Rzasa, & Wise, 2005). Some universities in Sweden (Rasmussen & Sørheim, 2006) have shown how a learning-by-doing, hence practical, approach towards entrepreneurship education may represent an alternative response in order to increase motivation and competence of learners with entrepreneurial intentions. Moreover, universities themselves are moving towards a paradigmatic shift leading them to become entrepreneurial

universities. Such a phenomenon has been detailed in a case-study (Martinelli, Meyer, & von Tunzelmann, 2008) by analyzing university-industry collaborations and faculty attitudes concerning Sussex University in the United Kingdom. Field researches conducted in Italy (Fini, Grimaldi, Santoni, & Sobrero, 2011) have identified university-level support mechanisms as key actors concerning regional social capital, regional financial development, the existence of a regional business educator, regional public R&D expenses and regional innovative performance. Other studies (Bercovitz & Feldmann, 2006) have emphasized how economic, social and political influences affect the ability of universities to generate new knowledge and to transform the existing one into successful commercial solutions. Such a result is also associated with a significant contribution to economic growth and prosperity (Bercovitz & Feldmann, 2006). Moreover, the entrepreneurial orientation of European academic organizations help regions and nations achieving competitive advantages in emerging knowledge-intensive fields of economic activity (Van Looy, Landoni, Callaert, van Pottelsberghe, Sapsalis, & Debackere, 2011). In particular, antecedents of entrepreneurial effectiveness of universities are related to the size and the disciplines of universities, and also to the R&D intensity of the local business environment (Van Looy, Landoni, Callaert, van Pottelsberghe, Sapsalis, & Debackere, 2011).

THE STUDY

The proposed case-study considers a publicly funded research project (Giglio, Carrozzino, Ceravolo, & Cosma, 2012), which is geared to the development and commercialization of an advanced vehicle pooling platform. Some university students and recent graduates in management engineering at the University of Calabria (Italy) have realized such an entrepreneurship project, thus leveraging mainly their attitudes, knowledge, competences and skills acquired and developed throughout their entrepreneurship-oriented study programme. Therefore, the application of the research framework to the project-study at hand is fully compliant with the entrepreneurship education theory.

The main objective of this study is analyzing entrepreneurship education end results concerning the design and implementation project of a vehicle pooling platform realized by means of public funds. As a preliminary step, it is geared also to identify group-level factors and sub-factors involved in such a higher education entrepreneurship project, and to capture the corresponding impacts. Under a methodological perspective, this paper is geared to provide field scholars with an integrated approach, which is based on both the literature review and panel of experts in order to perform a qualitative evaluation of project's outcomes.

Literature review emphasizes the adoption of a broader perspective of analysis (Palmieri & Giglio, 2013; Palmieri & Giglio, 2014; Palmieri & Giglio, 2015a; Palmieri & Giglio, 2015b; Palmieri & Giglio, 2015c; Giglio & Palmieri, 2016a; Giglio & Palmieri, 2016b; Giglio & Palmieri, 2016c) for capturing all possible outcomes of innovative entrepreneurial initiatives. The theoretical framework relies also on the identification of factors and sub-factors (Table 1) involved in group-level interactions, which are considered as key elements affecting the overall impact of entrepreneurship projects. Such factors and sub-factors have been detected by means of a four-step selection process adapted from previous studies in the same field (Giglio, 2014; Giglio, 2015; Giglio, 2016) in order to provide the panel of experts with a wider slant of analysis. Each factor and sub-factor has been evaluated under different perspectives, thus providing an assessment of the related impact in terms of economic growth and development (EGD), life/health expectancy and living standards (LHE), social costs and pollution rates (SCP), and corporate performance (COP). The panel of experts involved in this study has been selected by analyzing knowledge and seniority of panel members in the field (Giglio, 2014; Giglio, 2015; Giglio, 2016).

Table 1: Factors and sub-factors adapted from (Giglio, 2014; Giglio, 2015; Giglio, 2016).

Factors	Sub-factors
Trust	Team integrity
	Team trustworthiness
	Team spirit
	Friendly atmosphere
	Sharing confidence
Network ties and density	Social relationships
	Personal relationships
	Close friendship
	Time spent communicating
Transactive memory system	K specialization available
	Different background available
	K specialization required
	Suggestion acceptance

	Trusted knowledge
	Efficient information retrieval
	Team coordination
	Team integration
Individual commitment	Group-task attraction
	Group-task similarity/closeness
	Social acceptance/integration
	Social relationships
Group cohesiveness	Inclination to stick together
	Frequency of communications
	Awareness of connected task
	Willingness to work together
Collective mind/Creative Synthesis	Shared vision
	Interrelation efforts
	Team decision-making
	Coordination understanding
Idea sharing	Team sharing confidence
	Individual sharing confidence
Idea generation	Idea generation
Divergent input/Team composition	Background uniqueness
Divergent thinking/Idea Centrality	Ideas labelled as divergent
	Independent idea generation
	Relevance of divergent ideas
Knowledge sharing	Documents sharing
	Techniques/methods sharing
	Expertise/know-how sharing
	Know-where/-whom sharing
Knowledge generation	Knowledge generation
Innovation stage identification	Concept search
	Concept selection
	Concept testing
	Concept development
Team performance	Deliverables quality
	Team goal achievement
	Team process success rate
	Efficient time management
	Meeting deadlines
	Effective teamwork
Physical environment	Inspiring/creative workplace
	Physical spaces for C, K and I

FINDINGS

The qualitative assessment conducted by the panel of experts has taken into account the above mentioned factors, on the one side, and their association with the level of impact ("L"=low, "M"=medium, "H"=high) of the entrepreneurship project at hand, on the other side. Overall results related to factors-impact relationships are shown in Tables 2.

Table 2: Results of the qualitative assessment.

Factors	Level of impact on EGD	Level of impact on LHE	Level of impact on SCP	Level of impact on COP
Trust	H	L	L	H
Network ties and density	H	L	L	H
Transactive memory system	L	L	H	H
Individual commitment	H	L	L	H
Group cohesiveness	H	L	L	H
Collective mind/Creative Synthesis	M	H	H	H
Idea sharing	H	H	H	H
Idea generation	H	H	H	H
Divergent input/Team composition	H	M	M	H
Divergent thinking/Idea Centrality	H	M	M	H
Knowledge sharing	H	H	H	H
Knowledge generation	H	H	H	H
Innovation stage identification	H	L	L	H
Team performance	H	L	L	H
Physical environment	H	L	L	H

Findings have shown how macroeconomic - i. e. EGD - and corporate - i. e. COP - performance are strongly influenced by all activities and efforts put in the design and implementation process of the entrepreneurship project at hand. As a matter of

fact, creativity-based, knowledge-based and innovation-based sessions play a key role in determining the success or the failure of such an entrepreneurial initiative. The reason behind is that team members developing an innovative business are obliged to share and utilize creative ideas and knowledge within the group of designers and developers, otherwise they will not be able to realize a working prototype/product and, hence, they will not be able to commercialize it. Moreover, they risk to be unable to understand and satisfy customers' needs.

In addition, knowledge-related factors play a significant role also in determining the level of impact on life/health expectancy and living standards. In fact, improving such elements requires knowledge generation and application rather than improving individual and group performance, building strong ties and cohesiveness within the team, and increasing personal commitment and motivation.

Likewise, the impact in terms of social costs and pollution rates (SCP) depends on the same knowledge-related factors and sub-factors affecting the LHE aspects. As a matter of fact, SCP-related problems impacting safety, security and environmental protection can be (partially) solved by means of sharing and applying existing knowledge to them.

CONCLUSIONS

This paper proposed an integrated approach in order to capture the outcomes of an entrepreneurial project led by students previously involved in entrepreneurship-oriented study programmes. Therefore, it proposes also a qualitative assessment of the impact of such project under a wider perspective of analysis that is in terms of corporate performance, social costs and pollution rates, economic growth and development, and life/health expectancy and living standards.

In particular, the proposed platform is considered a key solution at the urban, regional, national and international levels. In fact, Galizzi (2004) has shown how road congestion is responsible for expenses equal to 130 billion Euro per year. Moreover, it also responsible for 23,52% of CO_2 emissions in Europe, and also for the increase of 6% of fuel price and pollution rates in Europe. Social costs related to such a phenomenon will account for 4% of Europe's Gross Domestic Product (G.D.P.). Hence, such an entrepreneurial solution may reduce financial loss and provide new investments attraction, which, in turn, may increase the overall G.D.P.. In addition, national health systems will have less burden and will reduce their financial loss, too. Therefore, health expectancy and living standards will be increased correspondingly. Under a corporate perspective, developing a working and useful innovative solution means also improving corporate performance.

Under the methodological perspective, this study proposes a new integrated approach for the assessment of entrepreneurship education outcomes. Such an approach combines the literature review, which is aimed at identifying the main group-level dynamics and interactions affecting the success or failure of the case-study at hand, with the panel of expert, which is geared to provide a wider qualitative assessment covering all possible impacts of the project. This paper provides also the first application of the proposed approach to a real-world case-study.

REFERENCES

Afriyie N., & Boohene, R. (2014). *Entrepreneurial Education and Entrepreneurial Culture among University of Cape Coast Students in Ghana*. Athens Journal of Education (n. 1:4, pp. 309-321).

Bercovitz, J. & Feldmann, M. (2006). *Entprepreneurial Universities and Technology Transfer: A Conceptual Framework for Understanding Knowledge-Based Economic Development*. Journal of Technology Transfer (n. 31, pp.175-188).

Bilén, S. G., Kisenwether, E. C., Rzasa, S. E., & Wise, J. C. (2005). *Developing and Assessing Students' Entrepreneurial Skills and Mind-Set*. Journal of Engineering Education (April 2005, pp.233-243).

Carayannis, E. G., Evans, D., & Hanson, M. (2003). *A cross-cultural learning strategy for entrepreneurship education: outline of key concepts and lessons learned from a comparative study of entrepreneurship students in France and the US*. Technovation (n. 23, pp.757-771).

Fini, R., Grimaldi, R., Santoni, S., & Sobrero, M. (2011). *Complements or substitutes? The role of universities and local context in supporting the creation of academic spin-offs*. Research Policy (n.40, pp. 1113-1127).

Galizzi, M. M. (2004). *The Economics of Car-Pooling: A Survey for Europe*. International Workshop on Highways: Costs and Regulation. University of Bergamo, Italy.

Giglio, C. (2014). Pr*ofiling the Innovation Management discipline: a comprehensive perspective focused on Creativity-based vs Knowledge-based innovation strategies*. PhD thesis diss., University of Calabria, Italy.

Giglio, C. (2015). *Unlocking value from a vehicle pooling start-up initiative: a stakeholder perspective*. 10th International Forum on Knowledge Asset Dynamics - IFKAD. Bari, Italy.

Giglio, C. (2016). *Analyzing student contributions to innovative start-ups: an integrated approach*. Proceedings of the 7th International Conference on Intercultural Education, EDUHEM 2016, 15-17 June 2016, Almeria, Spain. In Procedia – Social and Behavioral Sciences, Elsevier (forthcoming).

Giglio, C., Carrozzino, G., Ceravolo, R., & Cosma, A. M. I. (2012). *Social MOBility – SMOB*. Social Innovation project (PON04a3_00164) - vehicle pooling platform "CityRide" funded by the E.U. and the Italian Ministry of Education, University and Research (MIUR). Winner of the tender notice D.D. n. 84/Ric. – March 2nd, 2012 "Smart Cities and Communities and Social Innovation" - "Research&Competitiveness 2007-2013" – Convergence Regions - National Operational Programme.

Giglio, C. & Palmieri, R. (2016a). *A comparison of intercultural student communities in Online Social Networks*. Proceedings of the 7th International Conference on Intercultural Education, EDUHEM 2016, 15-17 June 2016, Almeria, Spain. In Procedia – Social and Behavioral Sciences, Elsevier (forthcoming).

Giglio, C. & Palmieri, R. (2016b). *Analyzing informal learning patterns in Facebook communities of international conferences*. Proceedings of the 7th International Conference on Intercultural Education, EDUHEM 2016, 15-17 June 2016, Almeria, Spain. In Procedia – Social and Behavioral Sciences, Elsevier (forthcoming).

Giglio, C. & Palmieri, R. (2016c). An ICT solution for shared mobility in universities. In A. Abraham, K. Wegrzyn-Wolska, A. E .Hassanien, V. Snasel, A. M. Alimi (Eds.), *Advances in Intelligent Systems and Computing* (n. 427, pp.205-215). Springer.

Grimaldi, R., Kenney, M. Siegel, D. S., & Wright, M. (2011). *30 years after Bayh–Dole: Reassessing academic entrepreneurship*. Research Policy (n. 40, pp.1045-1057).

Iglesias-Sánchez, P. P., Jambrino-Maldonado, C., Peñafiel Velasco, A. & Kokash, H. (2016). *Impact of entrepreneurship programmes on university students*. Education + Training (n. 58:2, pp.209-228).

Laukkanen, M. (2000). *Exploring alternative approaches in highlevel entrepreneurship education: creating micromechanisms for endogenous regional growth*. Entrepreneurship & Regional Development (n. 12:1, pp.25-47).

Maresch, D., Harm, R., Kailer, N, & Wimmer-Wurm, B. (2016). *The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs*. Technological Forecasting & Social Change (n. 104, pp. 172-179).

Martinelli, A., Meyer, M., & von Tunzelmann, N. (2008). *Becoming an entrepreneurial university? A case study of knowledge exchange relationships and faculty attitudes in a medium-sized, research-oriented university*. Journal of Technology Transfer (n. 33:2, pp. 259-283).

OECD (2013). Culture: The role of entrepreneurship education. In *Entrepreneurship at a Glance 2013*. OECD Publishing.

Palmieri, R. & Giglio, C. (2013). *Seeking the stakeholder-oriented value of innovation: a CKI perspective*. 8th International Forum on Knowledge Asset Dynamics - IFKAD. Zagreb, Croatia.

Palmieri, R., & Giglio, C. (2014). *Seeking the stakeholder-oriented value of innovation: a CKI perspective*. Measuring Business Excellence, (n. 18:1, pp.35-44).

Palmieri, R., & Giglio, C. (2015a). *Informal Learning in Online Social Network Environments: An Evidence from an Academic Community on Facebook*. The Turkish Online Journal of Educational Technology (Special Issue 2 for INTE 2015, pp.279-287).

Palmieri, R., & Giglio, C. (2015b). *Using Social Network Analysis for a Comparison of Informal Learning in Three Asian-American Student Conferences*. The Turkish Online Journal of Educational Technology (Special Issue 1 for INTE 2015, pp.698-703).

Palmieri, R., & Giglio, C. (2015c). *Visualizing Social Network Data: a comparative study of Asian-American student conferences*, 2nd International Workshop on Social Networks Analysis, Management and Security - SNAMS 2015 - in conjunction with the 3rd IEEE International Conference on Future Internet of Things and Cloud - FiCloud 2015. Rome, Italy.

Rasmussen, E. A. & Sørheim, R. (2006). *Action-based entrepreneurship education*. Technovation (n. 26, pp.185–194).

Van Looy, B., Landoni, P., Callaert, J., van Pottelsberghe, B., Sapsalis, E., & Debackere, K. (2011). *Entrepreneurial effectiveness of European universities: An empirical assessment of antecedents and trade-offs*. Research Policy (n.40, pp.553-564).

THE RELATIONSHIP AMONG STATISTICS SELF-EFFICACY SCORES,DEMOGRAFIC CHARACTERISTICS AND EDUCATION LEVEL OF POSTGRADUATE STUDENTS (MASTERS DEGREE,PHD DEGREE)

Colak S*, Guzelordu D**, Colak T**, Bamac B** Sivri I**, Colak E*, Aksu E**,
Tasdemir R**,Tekin Orha A**,Son M*
Kocaeli University, School of Physical Education and Sport*
Kocaeli University School of Medicine Anatomy Department**
srpclk@gmail.com

ABSTRACT

Nowadays, statistics have been into economy, education, sport, politics and research areas like all parts of human life.Especially, statistics using in education and research areas. Feeling confident about using statistics make easier graduate and post-graduate students' academic life in university.The purpose of this study is to evaluate the statistic self-efficacy belief(SSEB) levels of masters and doctorate students and to determine whether there is a significant relationship between students' education levels and their demographic characteristics, including age, gender, region of origin, and place of residence. 43 masters (%74.1) and 15 doctorate students (%25.9) totally 58 post-graduate students attended to this study. 39 of this study participators(%67.2) are male (age average is 30.10 ± 5.409) and 19(%32.8) female (age average is 28.16 ± 5.025). We applied Information Collection Survey and Statistical Self-Efficacy Belief scale(SSEB) to participants. 36 of participants came from Marmara region(%62.1) We identify that there is no significant difference between masters and doctorate students, but ten answers given to the questions of survey. According to these datas, higher SSEB values of post-graduate students will increase both their academic success and their self-reliance about statistics usage.

INTRODUCTION

Statistics defination is inventory in Turkish. Statistics defined data collection, table graphics summary and result interpretation for specific purpose. Statistics is covered explanation of this results integrity, generalisation of pattern result for populace, research of features relation, projection of various topics, test adjustment and rules of observation.(Turkcebilgi,2015)

Self-efficacy is defined as personal achivement about problem solution capability by Bandura(1977). Person implemented problem resolution according to self-efficacy when problem occured. So self-efficacy is personal work complition and achivement. Social psychology implemeted self-efficacy at different disciplines.(Akkoyunlu and Orhan,2003,Lev ,1997). Statistics self-efficacy research is limited.

It can be determined as the confidence of statistic self-efficacy as "personal statistic capability assessment". The individuals that has high self-confidence of statistic capability must be considered as to have more motivation and success. If we think the importance of research in people's lives that in post-graduate education in nowadays, we can understand more about how a very important part of in their success is of the self-efficacy belief on statistics.

Purpose Of The Study

Purpose of the study is especially according to the literature, post-graduate students' confidence of personal statistic assesment and the result classification based on student demographic features such as age, gender, hometown and educational level, relation statistic during academical life.

Research Questions

1-) What is the relations between university postgraduate student SSEB and demographical features?

2-)What is the student level of SSEB?

3-)What is the relations university postgraduate student SSEB and educational level?

MATERIAL AND METHOD

58 postgraduate participants attend to our study. 39 of participants are male (Age avarage 30.10± 5.409), 19 participants are female(Age avarage 28.16 ± 5.025).

Data Collection

Research data source is data collection survey and SSEB scale. The reliability of survey questionnaire is related to consistency of measuring, repetable and balanced .(Erdoğan,1998) Related to this, self-efficiancy for statistics are prepared as articles, asked to professionals if they were relevant. Content validity confirmed by specialists' opinion and named as SSEB scale.

Data Collection Survey

This survey covered age, gender, location they came from and educational level.

Confidence of Statistics Self Efficacy Scale

This scale measured self sufficient with 16 line items defined by researcher.Each question score between 1 to 5 points.(1:Never, 2:Bit, 3:partly, 4:often, 5:always)(Colak, 2013)

Statistical Analyses

The data were analysed using the SPSS package(SPSS for Windows V15.0, SPSS Chicago IL, USA). The means and standard deviations of all the measurements were calculated. The differences between group means were determined using a non –paramatric test for independent samples (Mann-Whitney U test). A *p* value of 0,05 was considered statistically significant (Colak ,2013)

RESULTS:

Table 1:

	Male n:39(%67,2)	**Female n:19(%32,8)**	**Total n:58**	**p* value**
Age(years)	30.10±5.409	28.16 ± 5.025	29.47±5.322	0,160
SSEB	47.82±5.558	50.32±6.490	48.64±5.940	

Values are given as mean±SD

*Significant differences.

Research attendies 58 postgaduate student %67.2(n:39) male (Age avarage 30.10± 5.409) %32.8 (n:19), female (Age avarage 28.16 ± 5.025) (Table-1).

Table 2:

Region	**Frequency**	**Percent(%)**	**SSEB**
Marmara	36	62.1	49.00±6.32
Black Sea	5	8.6	48.60±3.57
Mediterranean	5	8.6	51.20±5.35
Aegean	3	5.2	44.33±10.01
Central Anatolian	2	3.4	48.50±2.12
Eastern Anatolian	3	5.2	48.00±1.73
Southeastern Anatolian	3	5.2	44.00±5.56

Research group coming from %62.1 (n:36)Marmara, %8.6(n:5) Black Sea, %8.6 (n:5) Mediterranean, %3,4(n:2) Central Anatolian, %5.2(n:3) Aegean, %5.2(n:3) Eastern Anatolian, %5,2(n:3)Southeastern Anatolian at post-graduate education(Table-2).

Table 3:

	Frequency	**Percent(%)**	**SSEB**	p* value
Master	43	74.1	49.05±5.60	0.432

Doctorate(PhD)	15	25.9	47.47±6.88

*Significant differences.

%74.1 (n:43) of participants are master (Age avarage 28.95+\- 5.473) and %25.9(n:15) is doctorate(Age avarage 30.93+\- 4.728).(Table -3) Only %67.2 of participants have known statistics before their post-graduate education.

Table 4 –Relationship between answers given to survey questions and education levels (post-graduate and doctorate) evaluated with Wilcoxon test as accepting $p<0,05$

Questions	**SSEB mean (Master)**	**SSEB mean (Doctorate)**	**P value**
1	3,44±1,14	2,27±1,16	**0,002**
2	4,16±0,94	3,93±1,28	0,704
3	3,84±1,23	2,93±1,28	**0,014**
4	3,63±1,21	2,47±1,06	**0,004**
5	2,56±1,14	3,07±1,48	0,270
6	2,09±1,01	2,87±1,45	0,072
7	2,37±1,17	3,07±1,16	0,051
8	2,49±1,24	2,80±1,47	0,534
9	2,35±1,21	2,93±1,16	0,072
10	2,53±1,42	3,47±1,45	**0,036**
11	3,63±1,04	2,40±1,18	**0,001**
12	2,70±1,16	1,87±1,06	**0,021**
13	1,79±0,94	2,60±1,05	**0,010**
14	4,26±0,81	3,53±1,30	**0,046**
15	3,84±1,06	2,87±1,55	**0,032**
16	3,37±1,25	4,40±0,98	**0,005**

1: I feel safe while applying statistics, 2:It makes me happy when ı learn new things about statistics, 3: I try to solve problems that encountered while applying statistics ownself , 4: I think it is easy to use statistical in studies, 5: I feel forced when I need to to learn something new about statistics, 6:If I am obliged to use statistics related my job I feel trouble, 7: I often have trouble while applying statistics, 8: I'm afraid of making mistakes can not be corrected while applying statistics, 9: Statistics are too complicated issue for me, 10:If not required I don't apply statistics ownself, 11:I believe I can finish my work faster with using statistics, 12: I would say I was a good statistics practitioner, 13:I would have panic when I have statistics problems,14: I believe everyone can learn to use statistics if they are willing to learn, 15: I believe I have the ability to meet my needs of statistics, 16:When I encounter a problem while applying statistics I would absolutely take help from someone

Master and doctorate groups are compared in terms of statistics, using the answers they give to the SSEB survey. As result there is significant difference between the doctorates and master in 1, 3, 4, 10, 11, 12, 13, 14, 15 ve 16 th questions($p<0.05$) (Tablo4) but in 2, 5, 6, 7, 8 and 9 th questions there is not a significant difference between them. ($p>0.05$) (Table4).

DISCUSSION:

Statistics word's usage origin is Aristotle time line. At that time, State defined total military and financinal level via statistic. Begining of the 17th century, statistical was not improved. The first step came John Graunt with statistic analyse ' Political Arithmatic' is life statistic, insuarence and economical statistic to be covered William

Petty book (1623 -1687) in the same century (Otrar 2015). Statistics is the branch of scientific method which deals with the data obtained by counting or measuring the properties of populations of natural phenomena. In this defination 'natural phenomena' includes all the happenings of external world, whether human or not'(Kendall and Stuart 1943,Smith 2011)

Kayhan and Koca (2004) study investigated master and doctorate thesiss at Mathematic Departmant. The Mathematic researchs are in 'cognitive format', mathematical subjects and educational method according to this study. This is demostrated mathematic and statistic importance for education life and posteducate life. (Kayhan and Koca 2004). This study explain correction posteducaturel student self-sufficient and related study based on statistics.

Statistic working type increased at university academic life. Postgraduate student used statistic for assignment completion, research, thesis study.

Statistics keeps big place in life of computer century population. Statistic is must for research. Statistic given reliability to self-sufficient increase for postgraduate student. Student will use statistic which is help academic life.

REFERENCES:

Bandura,A.(1977).*Self efficacy: Toward a unifying theory of behaviour change*. Psychol.Review,

Türkçebilgi (2015), Türkçe genel başvuru sitesi, http://www.turkcebilgi.com/istatistik

Bandura A (1977). *Self-efficacy: Toward a unifying theory of behaviour change.* Psych. Review,

Akkoyunlu B, Orhan F (2003). *Bilgisayar ve Öğretim Teknolojileri Eğitimi (BÖTE) Bölümü Öğrencilerinin Bilgisayar Kullanma Öz Yeterlik İnancı ile Demografik Özellikleri Arasındaki İlişki*. TOJET,

Lev, E.L. (1997). *Bandura's theory of self-efficacy: Applications to oncology*. Scholarly Inquiry for Nursing Practice,

Erdoğan, İrfan. (1998) *SPSS Kullanım Örnekleriyle Araştırma Dizaynı ve İstatistik Yöntemleri*,

Colak S. "*The relationship among computer self-efficacy scores, demographic characteristics, and grades in computer courses of students at the school of physical education and sports*." *Educational Research and Reviews*, 8(8), 374-377, April 2013

Otrar M (2015), http://mustafaotrar.net/istatistik/istatistik-biliminin-kisa-tarihi/

Kendall MG, Stuart A (1943) *The Advanced Theory of Statistics*: Volume 1, Distribution Theory. Charles Griffin & Company, London.

Smith MJ(2011) *Statistical Analysis Handbook* - The Winchelsea Press, Winchelsea, UK.

Kayhan M, Koca OA. (2004), *Research subects ın mathematıcs educatıon*: 2000-2002, Hacettepe Üniversitesi Egitim Fakültesi Dergisi 26 : 72-81.

THE USE OF DIETARY SUPPLEMENT IN INDIVIDUALS INTERESTED IN BODYBUILDING AS AN AMATEUR (EXAMPLE OF TURKEY-ANTALYA)

Neşe Toktaş Torun, Kıvanç Şengel, Kemal Alparslan Erman, Asuman Şahan
Akdeniz University, School of Physical Education and Sports, Turkey
nesetoktas@akdeniz.edu.tr

ABSTRACT

A total of 110 amateur body builders, 28 women and 82 men, (age average,27.23±8.64, height average 175.54±8.33 cm, weight average 73.97±13.30 kg), non-professionally interested in body building, who attend sports centers in Antalya, have volunteered to participate in the study conducted with the purpose of determining the use of dietary supplement in individuals non-professionally interested in body building. 41.8% of the individuals participating in the study use dietary supplement. There is statistically significant difference ($p<0.05$) between women and men in using dietary supplement. The use of dietary supplement in men is higher. 63.0% of the individuals use dietary supplement to increase body muscle ratio, 39.1% obtain these products from shops selling dietary supplement products, 34.8% from sports centers, and 23.9% from the internet. 58.7% of the individuals have declared that these products were recommended by their trainers. There is no statistically significant difference ($p>0.05$) in the number of those satisfied with their body fat ratio and body muscle ratio, and those not satisfied, based on using dietary supplement. The most widely used product is whey protein (% 41.2).

Keywords: Dietary Supplement, Amateur Bodybuilding

INTRODUCTION

A dietary supplement is a product which has a dietary component to support diet according to the Dietary Supplement Health and Education Act adopted in 1994 in America. Dietary components can contain substances such as vitamins, minerals, plants or botanies, amino acids, and enzymes, organ tissues, glandular, metabolites. Dietary supplements can be concentrates or extracts of the plants or foods at the same time. Generally, they are sold as tablet, capsule, soft gelatin, liquid, powder and bars. They cannot be classified as medicine (Kreider et al., 2010). Dietary supplements are used for the purposes such as increasing performance, decreasing body fat, increasing muscle mass, providing weight loss, preventing diseases, treating medical problems, increasing immunity, increasing mental activity or awareness, reducing stress; they are advertised and sold (Goston & Correia, 2010).

Sportsmen/women constitute the biggest consumer group of these products and others follow them like the individuals who go to sports centers regularly (Morrison, Gizis & Shorter, 2004). The American Dietetic Association, Canada Dietitians and American Sports Medicine College stated that individuals with a low energy intake and who are in the weight loss program and do not take one or more nutrition in the diet, and feed with high-carbohydrate diets which have low nutritional elements, may need some dietary supplements (Goston & Correia, 2010). Moreover, depending on the fact that dietary supplements contain prohibited substances although it is not indicated in the label or contamination problems take place, unintended doping news continue among the sportsmen/women in terms of the dietary supplement usage (Kratzenstein, Carlsohn, Heydenreich & Mayer, 2016). However, nowadays, the use of dietary supplements is very common by both elite and recreational sportsmen/women (Molinero & Marquez, 2009; Kratzenstein, Carlsohn, Heydenreich & Mayer, 2016).

Bodybuilding is a sport in which physical appearance is important. The objective is to reveal muscle mass and muscle details with a special training and diet program (Van der Ploeq et al., 2001). It is a branch in which the use of the dietary supplement is very common (Goston & Correia, 2010; Spendlove et al., 2015). Most of the individuals interested in bodybuilding as amateur ignore the importance of diet, they believe that dietary supplements are more important in reaching the desired level and they use overdose dietary supplements in the belief that more is better (Guardia, Cavallaro &Cena, 2015). Although there are many studies related to the use of dietary supplement among sportsmen/women (Goston & Correia, 2010), there are fewer studies related to the use of dietary supplement among the individuals going to sports centers and interested in bodybuilding as an amateur. The aim of this study is to identify the prevalence of the use of dietary supplement in individuals interested in bodybuilding as an amateur, reasons for the product use and most used products.

MATERIAL AND METHODS

Participants

28 females (average age 25,71±7,38 years, average height 166,30±6,64 cm, average weight 61,44±9,82 kg), 82 males (average age 27,76±9,01 years, average weight 178,59±6,36 cm, average height 78,10±11,64 kg), 110 individuals in total, who go to sports centers located in the center of Antalya and interested in bodybuilding

at least for one year participated in the study voluntarily. The individuals train 4,34±0,9 days a week, 1,53±0,6 hours a day on average.

Data collection

The study is intended for the assessment of the state and a survey prepared for the objective of the study was used. The questions of the survey were prepared by experts in the subject and the questions contain demographic characteristics of the individuals and information related to bodybuilding sport and the use of the dietary supplement.

The evaluation of the data

Statistical methods such as frequency (f), percentage (%) were used in the evaluation of the data. The chi-square test was conducted to identify the use of dietary supplement by gender and to reveal the relationship between the satisfaction level with the body fat ratio and muscle ratio and the use of the dietary supplement.

FINDINGS

28 females (average age 25,71±7,38 years, average height 166,30±6,64 cm, average weight 61,44±9,82 kg), 82 males (average age 27,76±9,01 years, average weight 178,59±6,36 cm, average height 78,10±11,64 kg), 110 individuals in total, participated in the study. The individuals train 4,34±0,9 days a week, 1,53±0,6 hours a day on average.

50,0% of the individuals who participated in the study stated that they had enough information related to dietary supplement products, 42,7% stated that they had too little information. 42,7% of the individuals obtain information from the fitness instructor, 22,8% obtain from family/relatives/friends and 21,7% obtain it from the Internet/newspaper/television. 90% of the individuals consider that dietary supplements increase performance and 73,3% consider that a person interested in bodybuilding should take a dietary supplement. 49,0% of the individuals answered the question of "Do dietary supplements have a doping effect?" as no, 28,8% answered as undecided and 22,1% answered as yes. While 39,0% of the individuals considered that dietary supplements did not have side effects, 30,0% considered that they had side effects and 31,0% stated that they did not know. 79,6% of the individuals consider that dietary supplements are legal. 42,7% of the individuals answered the question of "Is the natural diet enough for bodybuilding, is it possible to reach the desired level without using a dietary supplement?" as yes, 38,8% answered as no and 18,4% answered as undecided (Table 1).

Table 1. The distribution of the individuals in terms of the knowledge levels related to dietary supplement products

	f	%
The condition of being informed about dietary supplement products		
I have enough information	55	50.0
I have too little information	47	42.7
I have no information	8	7.3
Person/mass media from which information is acquired		
Family/relatives/friends	21	22.8
Fitness instructor	39	42.4
Doctor/pharmacist	6	6.5
Dietitian	3	3.3
Internet/newspaper/television	20	21.7
Books/magazines	3	3.3
Questions/answers related to dietary supplements		
Dietary supplements increase performance		
Yes	90	90.0
No	1	1.0
Undecided	9	9.0
The person interested in bodybuilding needs to use a dietary supplement		
Yes	77	73.3
No	18	17.1
Undecided	10	9.5
The dietary supplements have a doping effect		
Yes	23	22.1
No	51	49.0
Undecided	30	28.8
The dietary supplements have side effects		
Yes	30	30.0
No	39	39.0
Undecided	31	31.0
The use of dietary supplements is illegal		
Yes	4	3.9
No	82	79.6
Undecided	17	16.5
Natural diet is enough for bodybuilding. It is possible to reach the desired level without using a dietary supplement.		
Yes	44	42.7
No	40	38.8
Undecided	19	18.4

41,8% of the individuals who participated in the study use dietary supplement products. 58,7% of the individuals stated that they used dietary supplement products with the recommendation of a fitness instructor, 15,2% stated that they used them with the recommendation of family/relatives/friends, 13% stated that they used them by means of the Internet/newspaper/television. 63,0% of the individuals use the product to increase the muscle ratio and 34,8% stated that they use these products for more than one year. 39,1% of the individuals purchase these products from stores selling sporting products, 34,8% purchase them from sports centers to which they go, 23,9% purchase them from the Internet (Table 2).

Table 2. The distribution of the individuals in terms of the use of dietary supplement products

	f	%
Usage status		
Yes	46	41.8
No	64	58.2
Person/mass media making a recommendation		
Fitness instructor	27	58.7
Doctor/pharmacist	1	2.2
Dietitian	4	8.7
Internet/newspaper/television	6	13.0
Family/relatives/friends	7	15.2
Objective of the use		
Decreasing body weight	1	2.2
Increasing body weight	6	13.0
Increasing the body muscle mass	29	63.0
Decreasing the body fat percentage	6	13.0
Not feeling tired	1	2.2
Healthy life	3	6.5
Place of purchase		
Sports center	16	34.8
Internet	11	23.9
Market	1	2.2
Stores selling sporting products	18	39.1
Duration of the use		
1 month and less	8	17.4
1.1-3 months	15	32.6
3.1-6 months	5	10.9
6.1-12 months	2	4.3
More than a year	16	34.8

There is a statistically significant difference between females and males who participated in the study in terms of the use of dietary supplements ($p<0,05$). The use of the dietary supplement is higher in males (Table 3).

Table 3. The use of the dietary supplement product by gender

	Female (n=28)		Male (n=82)		Total (n=110)		χ^2
The use of the dietary supplement product	f	%	f	%	f	%	5,34*
User	6	21.4	40	48.8	46	41.8	
Nonuser	22	78.6	42	51.2	64	58.2	

* $p<0,05$

There is not a statistically significant difference between the individuals who participated in the study and who are satisfied and dissatisfied with the body fat ratio in terms of the use of the dietary supplement ($p>0,05$) (Table 4).

Table 4. The use of the dietary supplement in terms of being satisfied with the body fat ratio

	Satisfied with weight (n=61)		Dissatisfied with weight (n=49)		Total (n=110)		χ^2
The use of the dietary supplement product	f	%	f	%	f	%	0.60
User	28	45.9	18	36.7	46	41.8	
Nonuser	33	54.1	31	63.3	64	58.2	

There is not a statistically significant difference between the individuals who participated in the study and who are satisfied and dissatisfied with the body muscle ratio in terms of the use of the dietary supplement (p>0,05) (Table 4).

Table 5. The use of the dietary supplement in terms of being satisfied with the body muscle ratio

	Satisfied with the muscle ratio (n=52)		Dissatisfied with the muscle ratio (n=57)		Total (n=109)		χ^2
The use of the dietary supplement product	f	%	f	%	f	%	0.37
User	24	46.2	22	38.6	46	42.2	
Nonuser	28	53.8	35	61.4	63	57.8	

84,8% of the individuals who participated in the study found dietary supplement products healthy and 93,5% stated that they benefited from dietary supplement products. 26,1% of the individuals stated that their muscle ratio increased and 15,2% stated that their fat ratio decreased after using these products. A participant stated that he/she experienced a side effect of acne after using the product (Table 6).

Table 6. The distribution of the individuals in terms of benefiting from dietary supplement products

	f	%
Finding products healthy		
Yes	39	84.8
No	5	10.9
The condition of benefiting from the product		
Yes	43	93.5
No	1	2.2
Benefit obtained		
Increase in the muscle mass	12	26.1
Decrease in the fat percentage	7	15.2
Increase in weight	3	6.5
Increase in strength	1	2.2
Supportive to improvement	1	2.2
Increase in volume	2	4.4
The condition of getting damaged by the product		
Yes	1	2.2
No	44	95.7
Damage observed		
Acne	1	2.2

The most commonly used dietary supplement products are as follows: whey protein (41,2%), branched-chain amino acid (BCAA) (13,2%), products increasing weight (gainer) (10,3%), L-carnitine, glutamine (8,8%), creatine, other amino acids (5,9%), multivitamin (2,9%), zinc-magnesium and Tribulus (Tribulus is used to increase the levels of terrestris, caltrop-testosterone) (1,5%) (Table 7).

Table 7. The distribution of the individuals using dietary supplement products in terms of dietary supplement products that they use

Dietary supplement products used	f	%
BCAA	9	13.2
Whey protein	28	41.2
Creatine	4	5.9
Glutamine	6	8.8
Amino acid	4	5.9
Gainer	7	10.3
ZMA (Zinc-Magnesium)	1	1.5
Tribulus	1	1.5
L-carnitine	6	8.8
Multivitamin	2	2.9

DISCUSSION AND CONCLUSION

The use of the dietary supplement increases gradually among the individuals doing sports both as elite and recreational. There are many studies published related to the use of the dietary supplement among sportsmen/women. While sports type varies by cultural differences, age, and gender, the reports are notified to be between the rates of 40%-88% in the literature (El Khoury & Antonie-Jonville, 2012). There are different results in the studies conducted on the use of the dietary supplement among the individuals going to sports centers to exercise recreationally. It is possible that different countries, regions, the differences of sports centers and the individuals going to the centers, the differences in the type of sports revealed this result (Goston & Correia, 2010).

41,8% of the individuals use a dietary supplement product in this study. 49% of the individuals stated that they used a dietary supplement in a study conducted in Esfahan, Iran with 250 females, 250 males, 500 individuals in total, interested in bodybuilding (Karimian & Esfahani, 2011). 36,8% of 1102 individuals exercising recreationally in sports centers used a dietary supplement in a study conducted in Belo Horizonte in Brazil. Not only the individuals interested in bodybuilding but also all individuals going to the center were evaluated in this study (Goston & Correia, 2010). In the study conducted on 180 males, 149 females, 329 individuals in total, doing sports recreationally and going to sports centers in Greece, the dietary supplement use prevalence was 41,1% (Tsitsimpikou et al., 2011). In the study conducted on 116 males, 84 females, 200 individuals in total, going to the sports center recreationally at the university, 44,2% of the individuals used a dietary supplement (Jackson et al., 2010). In a study conducted on 512 individuals going to sports centers recreationally in Beirut, 36,3% of the individuals used a dietary supplement (El Khoury & Antonie-Jonville, 2012). Dietary supplement prevalences are close to each other in the studies. Different results were obtained in the studies conducted in Turkey. In a study conducted on 235 individuals including both recreational and amateur or professional sportsmen/women benefiting from the sports center in Eskişehir, the dietary supplement use prevalence was 47,2% (Argan & Köse, 2009). This rate was 72,0% in the study conducted on 50 males interested in bodybuilding as an amateur for at least two years in the sports centers in Ankara (Alpar, 2011). 46,7% of 30 individuals doing body building training stated in another study conducted in Ankara that they used a dietary supplement (Coşkun, 2011). 35,0% of 60 individuals exercising for health in Istanbul used a dietary supplement (Demirci, 2012).

58,7% of the individuals stated that they used a dietary supplement product with the recommendation of a fitness instructor, 15,2% stated they used it with the recommendation of family/relatives/friends and 13,0% stated that they used it by means of the Internet/newspaper/television. In a study conducted on 50 individuals doing bodybuilding training as an amateur, 50,0% of the individuals stated that they used a supplement product as a result of their own research, 27,28% stated they used it with the recommendation of a friend and 19,44% stated that they used it with the recommendation of a trainer (Alpar, 2011). In a study conducted on 30 individuals doing bodybuilding training in Ankara, 64,3% of the individuals used the products voluntarily, 21,4% used them with the recommendation of a fitness instructor (Coşkun, 2011). In a study conducted on 60 individuals exercising for health in Istanbul, dietary supplement products were evaluated separately and it was stated that people recommending the products more were doctors and trainers (Demirci, 2012). The individuals use supplement products with their own research, with the recommendation of a fitness instructor or friends in the studies related to the individuals going to sports centers to exercise (Tsitsimpikou et al., 2011). In the studies conducted, a few individuals obtain information related to dietary supplements from health professionals or expert sports dietitians (El Khoury & Antonie-Jonville, 2012).

There is a statistically significant difference between females and males who participated in the study in terms of the use of the dietary supplement ($p<0,05$). The use of the dietary supplement is higher in males. In the studies in which the use of the dietary supplement in individuals exercising recreationally and doing bodybuilding training was examined, the use of the dietary supplement was found to be higher in males, similarly to the study (Brill & Keane, 1994; Jackson et al., 2010; Goston & Correia, 2010; Karimian & Esfahani, 2011; Tsitsimpikou et al., 2011; El Khoury & Antonie-Jonville, 2012). It was stated in the systematic collection and meta-analysis conducted on the use of the dietary supplement in elite and non-elite groups that there is a small difference between males and females. The difference between genders varies by many factors such as research group, sports branch, socio-economic and cultural differences (Knapik et al., 2016).

The most commonly used dietary supplement products are as follows: whey protein (41,2%), branched-chain amino acid (BCAA) (13,2%), products increasing weight (gainer) (10,3%), L-carnitine, glutamine (8,8%), creatine, other amino acids (5,9%), multivitamin (2,9%), zinc-magnesium and Tribulus (Tribulus is used to increase the levels of terrestris, caltrop-testosterone) (1,5%). Protein is one of the most commonly used dietary supplements (Argan & Köse, 2009; Goston & Correia, 2010; Sanchez Oliver, Miranda Leon & Guerra-Hernandez, 2011; Tsitsimpikou et al., 2011; Alpar, 2011; Coşkun, 2011; El Khoury & Antonie-Jonville, 2012; Demirci, 2012). Proteins participate in the synthesis of various body structures and many metabolic processes. However, the muscle mass and strength do not increase just by consuming protein without a well-programmed exercise program (Tarnopolsky, 2004; Campbell et al., 2007). The protein requirement can vary between 1.2-2.2 g/kg/day. It was stated in a compilation published in 2014 that bodybuilding sportsmen/women (not for all of them, in the calorie restricted period) can reach up to 2.3-3.1 g/fat-free mass/kg/day (Helms, Aragon & Fitschen, 2014). Although the effects of the long-term protein consumption upon the requirement are not enlightened completely, there may be side effects such as ketosis, gut, overloading in kidneys, increase in the body fat, dehydration, increase in urinary calcium excretion and loss of the bone mass (Goston & Correia, 2010; Sanchez Oliver, Miranda Leon & Guerra-Hernandez, 2011). The energy intake is important for a positive nitrogen balance in skeletal muscles of the individuals doing weightlifting (Tarnopolsky, 2004; Campbell et al., 2007). Carbohydrate is another important nutritional element. Carbohydrate requirement is 8-10 g/kg/day (Guardia, Cavallaro &Cena, 2015).

63,0% of the individuals stated that they used the product to increase the body mass. In the studies conducted on dietary supplements in the literature, males use dietary products to provide an increase in strength, power, muscle mass and females use the products for health or because of the insufficient nourishment (El Khoury & Antonie-Jonville, 2012; Knapik et al., 2016).

39,1% of the individuals purchase these products from stores selling sporting products, 34,8% purchase them from sports centers to which they go, 23,9% purchase them from the Internet. It was stated in a study in which the protein use prevalence in sports centers was investigated that the individuals purchase proteins from sports centers, stores selling sporting products and shopping centers (Sanchez Oliver, Miranda Leon & Guerra-Hernandez, 2011). In another study conducted on 320 individuals exercising in sports centers recreationally, 67,1% of the individuals stated that they purchase the products from the stores selling sporting products (Tsitsimpikou et al., 2011).

The body image is a concept which indicates an individual's personal perception of his/her body. Some individuals who are not satisfied with their physical appearance or who have a low body image, do bodybuilding to have a more attractive appearance (Coşkun, 2011). In this regard, the fact that there is a difference between the individuals satisfied and dissatisfied with the body fat ratio and muscle ratio in terms of the use of the dietary supplement was investigated in the study and there was no statistically significant difference found ($p>0,05$).

84,8% of the individuals who participated in the study found dietary supplement products healthy and 93,5% stated that they benefited from dietary supplement products. 26,1% of the individuals stated that their muscle ratio increased and 15,2% stated that their fat ratio decreased after using the products. A participant stated that he/she experienced a side effect of acne after using the product.

Although most of the individuals going to sports centers keep the adequate and balanced diet, they believe that the muscle mass and strength cannot increase and their physical performances cannot improve without taking a dietary supplement. The importance of the adequate and balanced diet should be emphasized before using a dietary supplement. There is scientific evidence related to the availability of some dietary supplements and sports nutritions (sports drinks, sports bars, sports gelatins, protein supplements, creatine, caffeine, sodium bicarbonate, β-alanine, nitrate; and if medically recommended calcium, iron, D-vitamin supplement, omega-3, multivitamin-mineral supplements - Thomas, Erdman & Burke, 2016). However, the self-assessment is required on issues such as active component, requirement, dose, timing, the duration of use. The dietary supplements are recommended by evaluating their reliability, efficiency and legality under the supervision of health professionals (doctor, dietitian) who are experts in dietary supplements. There may be prohibited substances in dietary supplements harmful to health or included in the doping list. These substances may not be indicated on the label or there may be a contamination risk. There should be an effective control

mechanism related to dietary supplements and inspections should be conducted. Sportsmen/women, individuals going to sports centers to exercise, fitness instructors and trainers should be trained about dietary supplements.

The study conducted covers sports centers in the center of Antalya. There is a limited number of participants in the study. Especially the number of female participants is considerably low. It is required to have studies conducted across Turkey with a larger sample group in terms of generalizability of the results of the study.

REFERENCES

Alpar, F. (2011). Vücut geliştirme sporcularında beslenme, fiziksel aktivite ve besin takviyesi kullanım durumlarının incelenmesi. *Unpublished master's thesis, Hacettepe University institute of medical sciences*, Ankara.

Argan, M., Köse, H. (2009). Sporcu besin desteklerine (sports supplements) yönelik tutum faktörleri:fitness merkezi katılımcıları üzerine bir araştırma. *Spor Bilimleri Dergisi*, 20(4), 152-164.

Brill, J. B., & Keane, M. W. (1994). Supplementation patterns of competitive male and female bodybuilders. *International Journal of Sport Nutrition*, 4(4), 398-412.

Campbell, B., Kreider, R. B., Ziegenfuss, T., La Bounty, P., Roberts, M., Burke, D., et al. (2007). International Society of Sports Nutrition position stand: protein and exercise. *Journal of the International Society of Sports Nutrition*, 4, 1-7.

Coşkun, M. N. (2011). Vücut geliştirme sporu ile ilgilenen erkek yetişkin bireylerde beden algısının yeme davranışı ve besin tüketimi ile ilişkisi. *Unpublished master's thesis, Başkent University institute of medical sciences*, Ankara.

Demirci, Ü. (2012). Sağlık amacı ile egzersiz yapan kişilerde vücut bileşimi, besin desteği kullanımı, beslenme alışkanlıklarının saptanması. Unpublished master's thesis, Haliç University institute of medical sciences, İstanbul.

El Khoury, D., & Antonie-Jonville, S. (2012). Intake of nutritional supplements among people exercising in gyms in Beirut City. *Journal of Nutrition and Metabolism*, 2012 (2012), 1-12.

Goston, J. L., & Correia, M. I. (2010). Intake of nutritional supplements among people exercising in gyms and influencing factors. *Nutrition*, 26(6), 604-11.

Guardia, L. D., Cavallaro, M., & Cena, H. (2015). The risks of self-made diets: the case of an amateur bodybuilder. *Journal of the International Society of Sports Nutrition*, 12(16), 1-8.

Helms, E. R., Aragon, A. A., & Fitschen P. T. (2014). Evidence-based recommendations for natural bodybuilding contest preparation: nutrition and supplementation. *Journal of the International Society of Sports Nutrition*, 12(11), 1-20.

Jackson, J., Lyons, T. S., Roberts, J. L., Geary, C., & Willimas, J. (2010). Use of nutritional supplementation among üniversity recreation users. *Recreational Sports Journal*, 34, 2-8.

Karimian, J. K., & Esfahani, P. S. (2011). Supplement consumption in body builder athletes. *Journal of research in medical sciences : the official journal of Isfahan University of Medical Sciences*, 16(10), 1347-53.

Knapik, J. J., Steelman, R. A., Hoedebecke, S. S., Austin, K. G., Farina, E. K., & Lieberman, H. R. (2016). Prevalence of dietary supplement use by athletes: Systematic review and meta-analysis. *Sports Medicine*, 46, 103-123.

Kratzenstein, S. C., Carlsohn, A., Heydenreich, J., & Mayer, F. (2016). Dietary supplement use in young elite athletes and school children aged 11 to 13 years:A cross-sectional study design. *Deutsche Zeitschrift für Sportmedizin*, 67, 13-17.

Kreider, R., B., Wilborn, C. D., Taylor, L., Campbell, B., Almada, A. L., Collins, R., et al. (2010). ISSN exercise & sport nutrition review: research & recommendations. *Journal of the International Society of Sports Nutrition*, 7(7), 1-43.

Molinero, O., & Marquez, S. (2009). Use of nutritional supplements in sports: risks, knowledge, and behavioural-related factors. *Nutricion Hospitalaria*, 24(2), 128-34.

Morrison, L. J., Gizis, F., & Shorter, B. (2004). Prevalent use of dietary supplements among people who exercise at a commercial gym. *International Journal of Sport Nutrition Exercise Metabolism*, 14(4), 481-92.

Sanchez Oliver, A., Miranda Leon, M. T., & Guerra-Hernandez, E. (2011). Prevalence of protein supplement use at gyms. *Nutricion Hospitalaria*, 26(5), 1168-1174.

Spendlove, J., Mitchell, L., Gifford, J., Hackett, D., Slater, G., Cobley, S., O'Connor, H. (2015). Dietary intake of competitive bodybuilders. *Sports Medicine*, 45, 1041-1063.

Tarnopolsky, M. (2004). Protein requirements for endurance athletes. *Nutrition*, 20, 662-8.

Thomas, D. T., Erdman, K. A., & Burke, L. M. (2016). Position of the Academy of Nutrition and Dietetics, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and athletic performance. *Journal of the Academy of Nutrition and Dietetics*, 116(3), 501-28.

Tsitsimpikou, C., Chrisostomou, N., Papalexis, P., Tsarouhas, K., Tsatsakis, A., & Janurtas, A. (2011). The Use of Nutritional Supplements Among Recreational Athletes in Athens, Greece. *International Journal of Sport Nutrition and Exercise Metabolism*, 21, 377-84.

Van der Ploeq, G. E., Brooks, A. G., Withers, R. T., Dollman, J., Leaney, F., & Chatterton, B. E. (2001). Body composition changes in female bodybuilders during preparation for competition. *European Journal of Clinical Nutiriton*, 55, 268-77.

THE USE OF MOCK TRIAL IN CITIZENSHIP EDUCATION: A CASE STUDY

A. Figen ERSOY

Anadolu Üniversitesi, Eğitim Fakültesi İlköğretim Bölümü Sosyal Bilgiler Öğretmenliği Anabilim Dalı, Öğretim Üyesi,

arifee@anadolu.edu.tr

Ayşegül PEHLİVAN

Anadolu Üniversitesi, Eğitim Fakültesi İlköğretim Bölümü Sosyal Bilgiler Öğretmenliği Anabilim Dalı, Öğretim Üyesi,

aysegulpehlivan@anadolu.edu.tr

Economic, social, political, cultural and technological developments around the world have increasingly led to a change of citizenship understanding of societies and a citizenship understanding by which different individuals regard themselves to express with regards to their race, language, religion, ethnicity etc. has begun to occur. Based on this understanding, a citizenship education that both assists in fulfilling information, acquiring skills and values to ensure certain obligations and will comply with today's citizenship understanding must be given to the individual. One of the other methods to be used in citizenship education is mock trial. Mock trial teaches how individuals should be treated in a courtroom. In addition, it helps individuals to gain citizenship skills such as critical thinking, freedom of speech and self-expression.

For this reason, implementing these techniques which will contribute to children's upbringing as active and effective citizens is utmost important. This research aims to evaluate the use of mock trial as a teaching method in citizenship education courses. In the research, case study design which is a kind of qualitative research method was used. As a result of the research whose process is still ongoing, how the use of mock trial as a teaching technique in citizenship education courses shapes student behaviours and the problems encountered in the implementation of the mock trial will be determined.

TÜRKİYE'DE AKADEMİK OLMAYAN KURUMLARDA VERİLEN BAĞLAMA EĞİTİMİ VE SORUNLARI (SAKARYA İLİ ÖRNEĞİ)

Sertan DEMİR
Sakarya Üniversitesi
Devlet Konservatuvarı
Türkiye Cumhuriyeti
sdemir@sakarya.edu.tr

ÖZET
Bağlama, Türk halk müziğinin önemli enstrümanlarından biridir. Bu enstrüman, Türk halk müziğinin geleneksel yapısını ve ses sistemini göstermektedir. Türk halkı, bu özellikleri sayesinde hem köylerde hem de şehirlerde bağlamaya fazlaca ilgi ve önem gösterir.

Bu önem ve ilgi sebebiyle, hem akademik kurumlarda hem de akademik olmayan kurumlarda bağlama eğitimi verilmektedir. Konservatuvarların dışında halk eğitimi merkezleri, belediyeler bünyesinde gerçekleştirilen meslek edindirme kursları özel müzik dershaneleri Türkiye'deki bağlama öğrenimi ihtiyacını bir ölçüde karşılamaktadır.

Sakarya ili, göç bölgesidir. Nüfus bakımından Türkiye'nin 22. büyük ilidir. Bu özelliklerinden dolayı, Sakarya'da akademik olmayan kurumlarda verilen bağlama derslerinin, genel hakkında fikir vereceği düşünülmektedir.

Bu konu ile ilgili olarak, alan araştırması, literatür taraması ve kişisel görüşme yöntemleri kullanılmıştır.

Anahtar Kelimeler: Bağlama, bağlama eğitimi, Sakarya.

THE BAĞLAMA EDUCATION AND PROBLEMS IN NON-ACADEMİC INSTITUTIONS IN TURKEY (SAMPLE OF SAKARYA CITY)

ABSTRACT
Bağlama is one of the significant instrument of Turkish folk music. This instrument shows to traditional structure and voice system of the Turkish folk music. Turkish people shows musch interestand importance to bağlama thanks to these characteristic in the villages and cities.

Thanks to these interest and importance, bağlama education is given in academic and the non-academic intitutions. Except conservatories, publice ducations center and vocational courses of municipals meets demand of bağlama education in Turkey, they part fill a gap.

Sakarya is migration zone. Sakarya is twentysecond big city in Turkey. Because of these properties, we think it will give an idea about the general bağlama education in non-academic institution in Sakarya.

With regards to this topic, we used the method of the field research, literatüre search and personal interwiev.

Key words: Bağlama, Bağlama education, Sakarya.

GİRİŞ

Bağlama, bazı dönemlerde farklı isim ve formlarda karşımıza çıksa da, günümüzde farklı millet ve coğrafyalarda da kullanılan bir müzik aletidir.

İlk hallerini "kopuz", "ıklığ", "okluğ" gibi isimlerle gördüğümüz bu enstrüman, Orta Asya'da ortaya çıkmıştır. Konu ile ilgili olarak yapılmış kapsamlı çalışmalardan olan Mahmut Ragıp Gazimihal'in, "Ülkelerde Kopuz ve Tezeneli Sazlarımız" isimli eserinde kopuz isminin ve kullanılışının detaylı bir anlatımı yapılmaktadır. 2000 yıldan fazla zamandır kullanıldığını belirttiğin sazın Çin kaynaklarındaki kullanımını da ekleyen Gazimihal, "Tukiyu (Türk) erkeklerinin düşkünlükle "hyupu" çaldıklarını…" belirtir (Gazimihal;2001:21).

Kopuz, bozuk, saz, bağlama gibi isimlerle anılan bu müzik aleti, günümüzde özellikle Anadolu'da halkın en fazla kullandığı müzik aletidir.

Türkiye'nin, hemen her bölgesinde kullanılan bağlama bu özelliğinden dolayı konservatuvarlar ve müzik dershanelerinde de dersi verilen yaygın enstrümanlardandır.

Kullanımındaki yaygınlıktan dolayı, Sakarya'da verilen bağlama derslerindeki eğitimin incelenmesini hedeflediğimiz çalışmamızda, sorunları belirlemek ve bu sorunların giderilmesi için önerilerde bulunmayı amaçladık.

BAĞLAMA EĞİTMENLERİNİN NİTELİĞİ

Sanat ve spor alanındaki eğitimin, kişinin gelişimine olan katkısı günümüzde aileler tarafından da kabul görmeye başlamıştır. "Çalgı eğitimi, insanların ve toplumların yaşamında ve müziksel, dolayısıyla sanatsal bir takım duyumların alınması ve hissedilmesi sonucu, bazı önemli etkiler yapan bir eğitim alanıdır." (Uslu:1999;42). Özellikle büyükşehirlerde çalgı eğitiminin önemi, duyumların ve hislerin alınmasını sağlayan özel etkiler aileler tarafından fark edilmekte ve çocuklar bu alana yönlendirilmeye çalışılmaktadır.

Her ne kadar okullarda müzik eğitimine yeterince ilgi gösterilmese de okul dışında bilinçli ailelerin de varlığı hissedilmektedir. Öğrencilerin sınav odaklı çalıştırılmasının sonucu olarak düşündüğümüz müzik derslerinin yeterince önemsenmemesi meselesi, asosyal nesillerin yetişmesini engelleme adına da bir devlet politikası olarak acilen ele alınmalıdır.

Sadece müzik derslerinin alınması ile yetinmeyen bilinçli aileler, eğitmenin formasyonunu da sorgulamaktadır. Bu anlamda eğitmenin niteliğinin sorgulanması gerçeği bir otokontrol olarak karşımıza çıkmaktadır. Eğitimin tümünde olduğu gibi müzik eğitiminde de eğitimcinin niteliğinin yüksekliği konusunda, konunun uzmanı akademisyenler hemfikir olmaktadır.

İlknur Okatan konu ile ilgili olarak şu ifadeleri dile getirir :"…, toplumla iç içe yaşayan müzik öğretmenlerinin, müzikte kalite bilincine sahip olmaması halinde, toplumun kaliteli müziğe olan ihtiyacının karşılanabilmesi konusunda büyük bir eksikliğin ortaya çıkacağını ve bu eksikliğin müzik kültürümüz açısından, çok zararlı olacağı endişesini taşıdığımı vurgulamak istiyorum." (Okatan:1999;99).

Mustafa Uslu ise konu ile ilgili olarak; "Geçerli, tutarlı ve düzneli bir çalgı eğitiminin gerçekleşmesi, eğiten ve eğitilenin varlığı ile ilgilidir. Eğitimci olmadan nitelikli bir çalgı eğitiminden söz edilmesi olası değildir. Eğitimde, diğer önemli etkenler ise eğitimi gerçekleştirecek ve sürdürecek araç-gereç ve program konularının olduğu söylenebilir. Çalgı eğitiminde çalgı eğitimcisinin varlığı kadar niteliği de önem taşımaktadır." (Uslu:1999;43) şeklinde düşüncelerini paylaşır.

Müzik öğretmeninin niteliğini arttırmak adına da akademisyenlerin bazı fikirleri mevcuttur. Bunlardan bazılarını şu şekilde sıralamak mümkündür.

"Müzik eğitiminde üstün kalitenin varlığından söz edebilmemiz için, öncelikle, en iyi müzik eğitimcilerinden en iyi müzik eğitimi dersi alabilme fırsatının tüm yurttaşlara verilebilmesi gerekmektedir." (Okatan:1999;106).
Müzik eğitimi dersini alabilme fırsatının ardından Yurga ve Sağer, müzik öğretmeni yetiştirme konusunda, akademik kurumlarda verilecek eğitimini şu başlıklar altında incelemeyi önerirler
"Müzik öğretmeni yetiştirmeyi şu başlıklar altında toplayabiliriz:

- Öğrenci kaynağı,
- Giriş sınavları,
- Kesin kayıt sonrası öğrenci motivasyonu,
- Ders programı,
- Öğretim elemanı sorunu" (Yurga, Sağer;1999;42).

Bu maddelerin iyileştirilmesinin ardından bir müzik eğitimcisinin nitelikleri konusunda ise şu fikirler dile getirilir,"…müzik öğretmenlerinin sahip olabileceği nitelikleri maddeler halinde şu şekilde sıralayabiliriz:

1. Bir müzik öğretmeni öncelikle kendi alanına ilişkin temel bilgileri (ilk, kavram v.b.) ve bu bilgileri alma yollarını (yöntem, teknik v.b.) iyi bilmesi, anlaması, alanındaki bilgileri sürekli araştırıp, geliştirerek daha üst düzeylere çıkarması gerekir. (DAWSON, D. ACAY, S. Müzik Öğretimi, YÖK Yayınları, Ankara, 1997, s 1)
2. Müzik öğretmeni öğrenme öğretme sürecini çok iyi yönetebilmelidir.
3. Müzik öğretmeni rehberlik (öğrenci kişilik) hizmetleri vermelidir.
4. Bir müzik öğretmeni, kişisel ve mesleki özelliklerine dikkat etmelidir." (Somakçı:1999;55).

"Nitelikli müzik eğitimcisi denilmekle şunlar kastedilmektedir:

1. Edindiği mesleğin bütün detayları hakkında bilgili,
2. Düşünceler hakkında bilgili,
3. Sanat olaylarının tümünden haberdar,
4. Gelenek halindeki her türlü yaşam biçimi hakkında bilgili,
5. Doğayı tanıma ve zevk alma duygularına sahip,

Eleştirme ve mukayese yeteneğine erişmiş olmalıdır." (Önaldı:1999;39).

SAKARYA'DA AKADEMİK OLMAYAN KURUMLARDA VERİLEN BAĞLAMA EĞİTİMİNİN İNCELENMESİ

Sakarya ili geneli düşünülerek hazırlanan bu yazı, özelde Sakarya'da akademik bir kurum haricinde verilen bağlama derslerini değerlendirmeye yönelik bir çalışma olsa da, genelde Sakarya dışındaki bağlama derslerinin yaklaşık bir değerlendirilmesinin yapılmasını sağlayacağını düşünmekteyiz.

Sakarya ili bütün ilçeleri ile düşünüldüğü zaman, Sakarya Üniversitesi bünyesinde bulunan 1 Devlet Konservatuvarı ve bu kurumda ders veren öğretim elemanlarının Sakarya Üniversitesi bünyesinde açmış oldukları ders ve kursların haricinde, akademik eğitim başlığı altına alınabilecek bir eğitim yöntemi bulunmamaktadır. Bunların haricinde ise Sakarya'da tespit edebildiğimiz kadarıyla toplamda eğitim verilen 8 adet kurs yeri bulunmaktadır. Bunlar; halk eğitim merkezleri, belediyelerin kursları ve özel dershaneler olarak belirlenmiştir.

Çalışma yöntemi olarak literatür taraması, alan araştırması ve kişisel görüşme yöntemleri kullanılmıştır. Yukarıda bahsettiğimiz merkezlerde ders veren eğitmenlerle ile birebir görüşülerek 13 soruluk bir anket yapılmış ve sonuçları değerlendirilmiştir.

Bağlama eğitimi verilen bu merkezlerin fiziki şartlarının değerlendirilmediği bu çalışmada, ağırlıklı olarak eğitmenlerin pedagojisi ve öğrencilerin genel durumu ölçülmeye çalışılmıştır. Bu ölçülebilme amacına bağlı olarak da yukarıda da bahsettiğimiz 13 soru hazırlanmıştır.

Bulgular ve Yorum

Katılımcılara ilk soruda; "eğitim durumları" sorulmuştur. Ankete katılan 8 bağlama eğitmeninden 5'i bu soruya lisans, 2'si yüksek lisans ve 1'i de ilkokul terk" olarak cevap vermiştir.

İkinci soruda katılımcılara; "Akademik anlamda müzik eğitimlerinin olup olmadığı" sorulmuştur. Ankete katılan eğitmenlerin 6'sı bu soruya evet derken, 2'si hayır cevabı vermişlerdir.

Üçüncü soruda katılımcılara; "2. Soruya hayır demişlerse eğer: Solfej bilgilerinin ne aşamada" olduğu sorulmuştur. Ankete katılan eğitmenlerden 2 tanesi bir önceki soruya "hayır" cevabı verdiği için, bu soru sadece ikisi üzerinden cevaplanmıştır. Bu iki kişiden 1 i solfej bilgisini orta düzey olarak tanımlarken, diğeri solfej bilgisinin olmadığını bildirmiştir.

Dördüncü soruda katılımcılara "2. Soruya evet demişlerse eğer: Eğitim aldığınız kurum hangisidir?"sorusu yöneltilmiştir. Ankete katılan eğitmenlerden 6 tanesi 2. Soruya evet cevabı verdiği için, bu soru sadece bu 6 kişi tarafından cevaplanmıştır. Bu soruyu cevaplayan 6 eğitmenden 5'i Sakarya Üniversitesi Devlet Konservatuvarı'ndan mezun olduğunu belirtirken, 1 kişi ise Afyon Kocatepe Üniversitesi Devlet Konservatuvarı'ndan mezun olduğunu belirtmiştir.

Beşinci soruda katılımcılara "Bağlama eğitimi ile ilgili bir eğitim alıp almadıkları sorulmuştur. Bu soruya ankete katılanların tümü hayır cevabı vermiştir.

Altıncı soruda katılımcılara, Bağlama eğitimleri sırasında kullandıkları bir metodun olup olmadığı ve kullandığı metodların hangileri olduğu" sorulmuştur. Ankete katılan eğitmenlerden 5'i bu soruya "evet" cevabı verirken 3 eğitmen herhangi bir metod kullanmadıklarını belirtmişlerdir. Metod kullandığı belirten 5 eğitmenden 1'i Erdal Erzincan bağlama metodunu, 2'si Zeynel Sönmez Bağlama Metodunu, 3'ü de Savaş Ekici bağlama metodunu kullandığını belirtmiştir. Eğitmenlerden 1 tanesi hem Savaş Ekici hem de Zeynel Sönmez bağlama metodunu kullandığını belirtmiştir.

Yedinci soruda katılımcılara "hem bağlama düzeni hem de karadüzen bağlama eğitimi verip vermedikleri" sorulmuştur. Ankete katılan eğitmenlerden 7'si bu soruya evet cevabı verirken, 1'i sadece bağlama düzeni eğitimi verdiğini ifade etmiştir.
Sekizinci soruda katılımcılara, "karadüzen/bağlama düzeni dersini vermek tercihini nasıl belirledikleri" sorulmuştur. Ankete katılan eğitmenlerden 7'si öğrencinin isteğine bıraktığını belirtirken 1'i bağlama düzeni dersi verdiğini belirtmiştir.

Dokuzuncu soruda katılımcılara, "öğrencinin karadüzen/bağlama düzeni tercihini hocaya bırakma durumunda ne karar verdikleri" sorulmuştur. Bu soruya ankete katılan eğitmenlerden 4'ü bağlama düzenine 4'ü de karadüzen bağlama eğitimine yönlendirdiğini belirtmiştir.

Onuncu soruda katılımcılara, "Bağlama öğrenimi için önerdikleri bir sürenin olup olmadığı" sorulmuştur. Ankete katılan eğitmenlerden sadece bir tanesi bağlama öğrenmek için herhangi bir süre öngörmezken, diğer katılımcılardan 1'i 2 sene, 1'i 3 ay, 5'i de 6 aylık bir süre ders alınmasını öngörmektedirler.

Onbirinci soruda katılımcılara, "Bağlama öğrenmek isteyenlerin çoğunluğunun eğitim durumları" sorulmuştur. Bu soruya ankete katılan eğitmelerden 2'si "karışık" cevabı vererek her eğitim seviyesini kast etmiş, 1'i "orta okul ve lise", cevabı vermiş, 5'i de "lise-lisans" cevabını vermişlerdir.

Onikinci soruda katılımcılara "Bağlama öğrenmek isteyenlerin yaş ortalaması" sorulmuştur. Bu soruya ankete katılan eğitmenlerden 1'i 14-30, 1' orta yaş, 1'i 16-28, 2'si 15-25, 2'si 15-30, 1'i 25-40 cevabı vermişlerdir.
Onüçüncü soruda katılımcılara, "bir öğrenciye haftalık kaç saat ders verdikleri" sorulmuştur. Ankete katılan eğitmenlerin 1'i 1 saat, 3'ü 4 saat, 1'i 1.5 saat, 2'si 2 saat, 1'i de 3 saat ders verdiğini belirtmiştir.

Yukarıda verilen bulgular ışığında veriler yorumlandığı zaman şu sonuçlar ortaya çıkmaktadır.

- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin %62.5'i lisans mezunu, % 25'i yüksek lisans mezunu, yüzde 12.5'i ise herhangi bir okul bitirmemiştir.
- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin % 75'inin akademik anlamda bir müzik eğitimlerinin olduğu, % 25'inin ise akademik anlamda müzik eğitimlerinin olmadığı belirlenmiştir.
- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin, akademik anlamda müzik eğitimi almamış olan % 25'lik kesiminin % 50'si orta düzeyde solfej bilgisine sahip iken, % 50'si ise solfej bilmemektedir.
- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin, akademik anlamda müzik eğitimi almış olan %75'lik kesiminin %83'ü Sakarya Üniversitesi Devlet Konservatuvarı, % 17'si ise Afyon Kocatepe Üniversitesi Devlet Konservatuvarı mezunu olduğu tespit edilmiştir.
- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin % 100'ü bağlama eğitimi ile ilgili bir eğitim almamıştır.
- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin %62.5'i derslerinde metod kullanmakta iken %37.5'i metod kullanmadan ders vermeyi tercih etmektedir.
- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin %87.5'i hem karadüzen hem de bağlama düzeni eğitimi verebildikleri, % 12.5'inin ise sadece bağlama düzeni eğitimi verebildiği tespit edilmiştir.
- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin % 87.5'si karadüzen/bağlama düzeni tercihini öğrenciye bıraktığını belirtirken, %12.5'i ise öğrenciyi bağlama düzenine yönlendirdiğini belirtmiştir.
- Bağlama düzeni veya karadüzen dersi verme tercihinin hocaya bırakılması durumunda Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin % 50'si öğrenciyi karadüzen bağlamayı çalmaya, % 50 si ise bağlama düzeni bağlama çalmaya yönlendirdiği tespit edilmiştir.
- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin bağlama öğrenmek için öngördükleri süreler değerlendirildiği zaman, eğitimenlerin % 71.5'i 6 aylık bir süreyi, % 14'ü 3 aylık bir süreyi, % 14'ü de 2 senelik bir süreyi öngördüğü tespit edilmiştir.
- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi alan öğrencilerin %62,5'i lise-lisans mezunu, %12,5'i ortaokul-lise mezunu, % 12.5'inin ise herhangi bir eğitim seviyesinden olduğu tespit edilmiştir.
- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi alan öğrencilerin %25 'i 15-30 yaş aralığında, %12.5'i 14-30 yaş aralığında, %12.5'i "orta yaş" 40-60 yaş aralığında, % 12,5'i 16-28 yaş aralığında, % 25'i 15-25 yaş aralığında, % 12.5'i de 25-40 yaş aralığında olduğu tespit edilmiştir.
- Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin % 37.5'i 1 öğrenciye haftada 4 saat, % 25'i 2 saat, % 12.5'i 1 saat, % 12.5'i 1.5 saat, % 12.5'i 3 saat ders vermektedir.

SONUÇ

Sakarya'da akademik olmayan kurumlarda verilen bağlama eğitimini genel hatlarıyla incelemeye çalıştığımız araştırmamızda, Sakarya ili genelinde 8 kurumda bağlama dersi verildiğini tespit ettik. Bu kurumlar, özel dershaneler, halk eğitim merkezleri ve belediyelere bağlı kurs merkezleridir.

Bu merkezlerde ders veren eğitmenlerin müzik eğitimi alanındaki yetkinliğini değerlendirmeye çalıştığımız araştırmamızda oldukça ilginç sayılabilecek sonuçlarla karşılaştık. Bu sonuçların yanı sıra, bağlama eğitiminin verilmesi sırasındaki ciddiyet, bağlama derslerine hoca tarafından yaklaşım, Sakarya halkının bağlamaya olan ilgisi gibi konularda da fikir sahibi olduk.

Sakarya'da akademik olmayan kurumlarda verilen bağlama derslerini lisans mezunu eğitmenler vermektedir. Bu eğitmenler lisans eğitimlerini müzik alanında tamamlamışlardır.

Bu eğitmenlerin mezun oldukları okul Sakarya Üniversitesi Devlet Konservatuvarı'dır ve eğitmenlerin bağlama eğitimi formasyonları bulunmamaktadır.

Eğitmenler derslerinde metod kullanmaktadırlar ve tercih ettiği metodlar Savaş Ekici ve Zeynel Sönmez'in hazırladığı bağlama metodlarıdır.

Eğitmenler, her düzenin dersini verebilme yetkinliğine sahip, haftada 4 saat ders vermekte ve en az 6 aylık bir eğitimi öngörmektedirler. Bu 6 aylık eğitim sonunda gelinmesi gereken seviye hakkındaki düşünceleri tespit edilememiş ve bu anlamda öğrenciye uygulanan bir çıktı bulunmamaktadır.

Sakarya'da akademik olmayan kurumlarda bağlama dersi alan öğrenciler ise 14-40 yaş aralığında lise-lisans mezunudurlar.

Bu sonuçlara bakılacak olursa;
Sakarya'da akademik olmayan kurumlarda bağlama eğitimi veren eğitmenlerin % 62,5'inin lisans mezunu olduğu, % 75'inin akademik anlamda müzik eğitimlerinin olduğu, akademik anlamda müzik eğitimi alan eğitmenlerin % 83'ünün Sakarya Üniversitesi Devlet Konservatuvarı mezunu olduğu, hiç birinin bağlama eğitimi üzerine bir eğitimlerinin olmadığı, % 62,5'inin en az bir metoddan faydalandığı, % 87,5'inin hem karadüzen hem de bağlama düzeni dersi verebildiği, % 50sinin bağlama düzenin 5 %0'si ise karadüzen bağlamayı öğrencilerine tavsiye ettiği, % 71.5'inin en az 6 aylık bir bağlama eğitiminin gerektiği konusundaki fikirlerini ve % 37.5'inin 1 öğrenciye haftalık 4 saat bağlama dersi verdiğini tespit ettik.

Sakarya'da akademik olmayan kurumlarda bağlama eğitimi alan öğrencilerin ise % 62,5'inin lise veya lisans mezunu, % 87,5'inin 15-40 yaş aralığında olduğunu tespit ettik.

Sakarya'da akademik olmayan kurumlarda verilen bağlama dersleri, özelde Sakarya ve bölgemiz, genelde ise Türkiye ve dünya sanat hayatına katkı sağlayacağı düşünüldüğü zaman önemsenmesi gereken bir alandır. Bu alanda çalışan eğitmenlerin çoğunun ise Sakarya Üniversitesi Devlet Konservatuvarı mezunları olması fakat bu mezunların bağlama eğitimi alanında bir formasyonlarının olmaması okulumuzda değerlendirilmesi ve yatırım yapılarak eksikliklerinin giderilmesi gereken bir eksikliktir.

Diğer bir öneri ise mevcut durumda, akademik olmayan kurumlarda bağlama dersi veren eğitmenlerin bağlama formasyonu alanında aralıklarla eğitime alınmalarının gerekliliğidir. Bu eğitimler, eğitmenlerin daha verimli ders verebilmeleri ve dersi alanların daha hızlı ve doğru sistemlerle ders alabilmelerine imkân sağlayacaktır.

KAYNAKLAR

Gazimihal, M. R. (2001); *Ülkelerde Kopuz ve Tezeneli Sazlarımız*, Kültür Bakanlığı Yay., Ankara.

Uslu, M. (1999*); Türkiye'de Çalgı Eğitiminin Yaygınlaştırılmasında ve Geliştirilmesinde İyi Çalgı Eğitimcisi Yetiştirmenin Önemi ve Gerekliliği,* 5. İstanbul Türk Müziği Günleri Türk Müziğinde Eğitim Sempozyumu Bildiri Kitabı, Kültür Bakanlığı Yay., Ankara.

Okatan, Ş. İ. (1999*); Müzik Öğretmeni Eğitiminde Kalite Bilincinin Gerekliliği* ,5. İstanbul Türk Müziği Günleri Türk Müziğinde Eğitim Sempozyumu Bildiri Kitabı, Kültür Bakanlığı Yay., Ankara.

Önaldı, Ş. (1999) *Nitelikli Bir Müzik Eğitimcisi ile Sağlanacak Sosyal ve Fizyolojik Gelişme,* 6. İstanbul Türk Müziği Günleri Türk Müziği ve Onun Temel Ögesi Müzik Öğretmeni Sempozyumu Bildiri Kitabı, Kültür Bakanlığı Yay., Ankara.

Yurga, C. & SAĞER, T. (1999); *Türkiye'de Müzik Öğretmeni Yetiştirme* , 6. İstanbul Türk Müziği Günleri Türk Müziği ve Onun Temel Ögesi Müzik Öğretmeni Sempozyumu Bildiri Kitabı, Kültür Bakanlığı Yay., Ankara.

Somakçı, P. (1999); *İyi Bir Müzik Öğretmeninin Nitelikleri*, 6. İstanbul Türk Müziği Günleri Türk Müziği ve Onun Temel Ögesi Müzik Öğretmeni Sempozyumu Bildiri Kitabı, Kültür Bakanlığı Yay., Ankara.

Ekici, S. (2000); *Bağlama İçin Etüdler ve Tezene Çalışmaları,* Gaziantep Üniversitesi Yay., Gaziantep.

TÜRKİYE'DE HUKUK EĞİTİMİNİN PROBLEMLERİ VE ÇÖZÜM ÖNERİLERİ

Yard. Doç. Dr. Abdurrahman SAVAŞ [1]

ÖZET

Hukuk eğitimi hukukun bilim haline geldiği dönemlerden beri önem arzetmektedir. Roma imparatorluğu ve Osmanlı imparatorluğunda da aynı sorunlarla karşılaşılmış ve çözümler üretilmeye çalışılmıştır. Çok masraf gerektirmemesi sebebi ile hukuk fakültelerinin her üniversitede kurulmak istenmesi, öğretim elemanı sayısının yetersizliği, pedagojik açıdan yetersiz öğretim elemanları, öğrenci sayısının çokluğu, az okuyan ve sayısal karakterli öğrenci profili en önemli problemlerdendir.

Anahtar Kelimeler : Hukuk, Eğitim, Pedagoji, Avukat, Öğretim Üyesi

PROBLEMS AND SOLUTION PROPOSALS OF LEGAL EDUCATION IN TURKEY

ABSTRACT

Legal education has been important since the times when law has become a science. In the Roman Empire and the Ottoman Empire, the same problems were encountered and solutions were tried to be produced. Because of the law faculties do not require much expense, set up nearly in every university. Inadequate number of teaching staff, lack of pedagogically inadequate faculty members, a large number of students, and a poorly read and numerically characterized student profile are the most important problems.

Key Words: Law, Education, Pedagogy, Lawyer, Teaching Staff

Hukukun bilim haline geldiği Pax Romana döneminden beri hukuk eğitimi, üzerinde çok tartışılan bir konu haline gelmiştir. Kara Avrupası hukukunun temeli olan Roma Hukukunda, Roma İmparatoru Iustinianus, kendi döneminde de mevcut olan bu problemi çözmek için, orta çağda Corpus Iuris Civilis adı ile anılmaya başlanan bir derleme yaptırmıştır[2]. Dört bölümden oluşan bu derlemenin uygulamaya yönelik olan digesta isimli bölümünün başında "kanunların insanın anlama kapasitesini aşan sonsuz bir karmaşa içinde olduğunu" ifade etmektedir[3]. Bu karmaşık düzenin anlaşılabilmesi, hukuki problemleri çözebilmenin ilk şartıdır. Bu da hukuk eğitimi sayesinde gerçekleşecektir. Bu amaçla İmparator Iustinianus kendi dönemindeki hukuk öğrencileri için açık ve basit bir ders kitabı hazırlanmasını da emreder. Bunun sonucunda Corpus Iuris Civilis'in diğer bir bölümü olan ve hukuka giriş mahiyetindeki bir ders kitabı niteliğindeki Institutiones hazırlanır[4].

Benzer sıkıntıların Türk Hukuk Tarihi içerisinde İslam hukukunun uygulandığı Osmanlı döneminde de olduğu görülmektedir. Mecellenin hazırlanmasında hukukun uygulanması kadar öğretilmesinin kolaylaştırılmak istendiği de söylenebilir. Çünkü Roma hukuku gibi kazuistik

[1] İstanbul Üniversitesi Hukuk Fakültesi Öğretim Üyesi

[2] Umur, Ziya, Roma Hukuku, Ders Notları, 3.Tıpkı Basım, İstanbul 2010, s. 117.

[3] Bkz. Gözler, Kemal, Hukuk Eğitiminde Ders Kitapları Nasıl Olmalıdır? Instıtutıones'in Yaklaşımı, Terazi: Aylık Hukuk Dergisi, Yıl 2, Sayı 15, Kasım 2007, s. 101.

[4] Gözler, 101; Umur, 111.

sistemi benimsemiş olan İslam hukukunda[5] da hukukun anlaşılması kadar öğretilmesi ve uygulanması da önemli problemlerin başında gelmeye başlamıştır. Hatta bir dönem İslam hukukunda etkili olan içtihat kapısının kapandığına/kapatıldığına ilişkin anlayış[6] da esasında hukuk eğitimi ve öğretimi ile ilgili bir sorundur. Bu sorun kazuistik sistemin uygulandığı bir ülkede hukukun uygulanmasına da etki etmektedir. Sistemi iyi bilmeyen, liyakatsiz ve donanımsız hakimlerin benzer olaylarda verdikleri çok farklı kararların hukuka olan güveni sarsması karşısında İslam hukukunun önemli kodifikasyonlarından biri olan Mecelle-i Ahkamı-ı Adliye yapılmıştır[7].

Türkiye Cumhuriyeti'nde de Hukuk Reformu sonrası yeni hukukun öğretilmesinde de aynı problemlerle karşılaşılmıştır. Resepsiyon[8] şeklinde gerçekleşen hukuk reformunun[9] ardından yeni hukukun öğretilmesini ve dolayısıyla da uygulanmasını kolaylaştırmak amacıyla Ankara'da yeni bir hukuk fakültesi açılmıştır.

Hukuk dilinin eskiliği ya da toplumun konuştuğu dilin değişmesi, hukuk fakültelerinin sayısı (azlığı ve çokluğu), hukuk fakültelerindeki ders müfredatları, hukuk fakültelerini tercih eden öğrenci profili, adliyelerdeki hakim, savcı ve avukatlarla ilgili sorunlar günümüzde hukuk eğitimi ve öğretimi ile ilgili olarak pek çok farklı sorunun varlığına işaret etmektedir.

Bu sorunların çözülebilmesi için öncelikle sorunların anlaşılması ve sebeplerinin irdelenmesi gerekmektedir. Daha sonra bu sorunlarla ilgili olarak kısa, orta ve uzun vadeli çözüm önerileri geliştirilmelidir.

Hukuk eğitiminin ilk sorunu, hukuk fakültesini tercih eden öğrenci profilinden kaynaklanmaktadır. Başarılı ve zeki olduğunda şüphe olmayan bu öğrenci profili, üniversite sınav sisteminden kaynaklanan sebeplerle Türkçe- matematik gurubunu seçen öğrencilerden oluşmaktadır. Çok fazla kitap okuma alışkanlığı olmayan ve devamlı fizik, matematik gibi sayısal problemler ile uğraşmış olan bu öğrenci kitlesi, özellikle yorum ile ilgili hususlarda problemler yaşamaktadır[10]. Şıklar arasında tek doğru cevabı bulmaya şartlanmış bir bakış açısı, birden fazla doğru cevabı olabilen hukuk problemlerinde sıkıntılarla karşılaşmaktadır. Yine kitap okuma alışkanlığı edinmemiş bir öğrenci profilinin hukuk fakültesinde bu alışkanlığı kazanması oldukça zordur. Kitap okuma alışkanlığı kazanmamış bir kişinin ise temeli okuma, anlama ve anlatmaya dayalı bir sistemde karşılaşacağı zorluklar açıktır[11].

Hukuk eğitiminde karşılaşılan problemlerden bir diğeri de hukuk fakültelerinin sayısının artmasıdır. Bu sayıdaki artış, pek çok problemi de beraberinde getirmiştir. Bu problemlerden ilki yeterli öğretim elemanının olmamasıdır. Hemen hemen her üniversitede bir hukuk fakültesi bulunmaktadır. Fiziki açıdan bir sınıf, bir yazı tahtası, bir hoca kürsüsü ve birkaç adet de öğrenci sandalyesi ile kolayca açılabilen hukuk fakülteleri, öğretim elemanı açısından aynı şansa sahip değildirler. Bir öğretim üyesinin lisans sonrası ortalama 8-10 yılda yetiştiği düşünüldüğünde yeni üniversitelerin u ihtiyacının kendi bünyelerinden yetişecek kişilerce karşılanması döngüsel olarak mümkün değildir. Bu sebeple söz konusu ihtiyacın dışarıdan karşılanması gerekmektedir. Belli sayıdaki öğretim üyesinin kuruluş sırasında kadrolu olarak söz konusu fakültenin bünyesinde olması gerekse de tüm derslerin bu öğretim üyelerince verilmesi de

[5] Ekinci, Ekrem Buğra, Osmanlı Hukuku, 3. Baskı İstanbul 2014, s. 108.
[6] Bkz. Esen, Bilal, Hanefi Usulcülerinde İctihad Teorisi, Ankara 2012, s. 319 vd.
[7] Mecelle Esbabı mucibe mazbatası, Öztürk, Osman, Osmanlı Hukuk Tarihinde Mecelle, İstanbul 1973, s. 33.
[8] Resepsiyon kavramı için bkz. Bozkurt, Gülnihal, Batı Hukukunun Türkiyede benimsenmesi, Ankara, 2010, s. 5 vd.
[9] Bozkurt, 175 vd.
[10] Karş Serozan, Rona, Hukukta Yöntem, İstanbul 2015, s. 13.
[11] Bu konuda ayrıntılı bilgi için bkz. Akıncı, Şahin, Hukuk Eğitimi Üzerine Düşünceler, Selçuk Üniversitesi Hukuk Fakültesi Dergisi, Cilt 9, Sayı 1-2, Yıl 2001, s. 11.

mümkün değildir. Kendi öğretim elemanlarının sayıca yetersiz olması sebebi ile dışarıdan ders verecek öğretim elemanları ile eğitim ve öğretime devam etmeye çalışmaktadırlar. Büyük şehirlerdeki yeterli kadroya sahip hukuk fakülteleri ile iletişim kurabilen hukuk fakülteleri bu sorunu kısmen de olsa halledebilirken, bazı fakültelerde sorun daha farklı yollarla çözülmeye çalışılmaktadır. Bu da çözüm olarak görünmekle birlikte uzun vadede başka problemleri de beraberinde getirmektedir. Örneğin uzak bir üniversiteye derse giden öğretim üyesi, maddi ve manevi zorluklar sebebi ile fiili olarak iki haftada bir derse gitmekte, bu da derslerin yığılmış bir program dahilinde peşpeşe verilmesi anlamına gelmektedir. Haftada iki-üç saat olan derslerin iki haftada bir dört-altı saat, dört ya da beş saat olan derslerin ise sekiz ya da on saat olarak ve peşpeşe verilmesi de pedagojik açıdan ayrıca tartışılmalıdır. Kağıt üzerinde görünmeyen bu problem özü mantık ve muhakeme olan bir sistemin anlaşılmasına oldukça önemli bir engel olmaktadır.

Öğretim elemanı yetersizliğinin diğer bir görünümü de araştırma görevlilerinin sayısı açısından gündeme gelmektedir. Özellikle özel üniversitelerde maliyet hesabı açısından bakılan araştırma görevliliği kurumu, dersin ya da anabilim dalının araştırma görevliliği yerine fakültenin araştırma görevliliği şekline dönüşmüştür. Bu da bir araştırma görevlisinin farklı anabilim dalları hatta bölümlerden hocaları asiste etmesine yol açmakta, anabilim dalı geleneğinin oluşmasına da engel olmaktadır.

Hukuk fakültesi sayısı ile birlikte Hukuk fakültesi öğrenci kontenjanlarının artması, öğretim elemanı sayısının yetersizliği ile birlikte sınav usullerinin de değişmesine sebep olmaktadır. Eskiden klasik (yazılı) şekilde yapılan sınavlar sebebi ile öğrencilerin ifade etme yeteneği daha fazla gelişebilirken, artan öğrenci sayısı karşısında ders veren öğretim elemanı sayısının azalması, sınavların test şeklinde yapılmasını gerektirmeye başlamıştır. Buna ek olarak bazı hukuk fakültelerinde derslerin dönemlik olması, vize, final ve bütünleme sınavlarının kısa aralıklarla peş peşe yapılması, bir hocanın birden çok derse girmesi ve buna bağlı olarak hoca başına düşen çok sayıdaki sınav kağıdı, bunların okunmasını ve sıhhatli değerlendirme yapılamaması ortaya çıkan diğer bazı sorunlardan sadece bir kaçıdır. Bu sorunların aşılması için sınavlar da ister istemez test sınavı formatına dönüşmektedir. Test sınavlarının kaçınılmaz olması sonucunda öğrencilerin ifade etme yeteneği de tabii olarak düşmeye başlamıştır. Özellikle bu sonuç, yazılan dava dilekçelerinde ve verilen mahkeme kararlarında da açıkça hissedilmektedir.

Özellikle 15 Temmuz kalkışması sonrasında FETÖ ile bağlantılı olduğu tespit edilen pek çok hukuk fakültesi öğretim elemanı görevden atılmış ya da uzaklaştırılmıştır. Bu da zaten yetersiz olan öğretim elemanı sayısını iyice azaltmış, kendi içerisinde sorunu iki katına çıkarmıştır. Bu sorunun hukuk eğitimine etkisi ise uzun vadede ortaya çıkacaktır[12].

Hukuk eğitiminin diğer problemlerinden birisi de hukuk fakülteleri ile adliyeler arasındaki bağların her bakımdan kopuk olmasıdır. Mezun olan ve adliyeye staj için gittiğinde ilk defa dava dosyası ile karşılaşan bir stajyer avukat adeta hukuku yeniden öğrendiğini düşünmektedir. Çevresindeki diğer avukatların da adliyedeki hukuk ile fakültede öğrendiği hukuk arasında çok büyük farklılıkların olduğu yönündeki telkinleri sebebi ile fakülte bilgisi ile staj bilgisinin uyumlaştırılmasında sorunlar yaşanmaktadır.

Hukuk eğitimindeki diğer bir sorun da hukuk fakültelerindeki öğretim elemanlarındaki pedagojik formasyon eksikliğidir. Her öğretim üyesi asistanlığa başladığında hocasından ya da gözlemlerinden bu eğitimi kendi becerisi çerçevesinde almaya çalışmaktadır. Derse hazırlanma ders anlatımı, öğretim metotları, sınav sorusu hazırlama ve değerlendirme usulleri gibi pek çok konuda sorunlar yaşanmaktadır. Çevresinde tecrübeli öğretim üyesi olan asistanlarca uzun

[12] Bu kısım bildirinin sunumundan sonra, basım aşamasına gönderilen metne eklenmiştir.

vadede de olsa nispeten halledilebilen bu sorun, önünde örnek olmayan asistanlar için önemli bir probleme dönüşmektedir. Elbette ki bundan en çok etkilenen kesim de hukuk fakültesi öğrencileri olmaktadır.

Hukuk eğitiminin diğer bir problemi de, bu konuda farklı görüşler olsa da, kanaatimizce son zamanlarda değiştirilen temel kanunlardaki hukuki terimlerin de değiştirilmesinden kaynaklanan hukuk dili problemidir. Belki sadece dil problemi gibi görünen bu problem daha geniş perspektiften bakıldığında hukuk formasyonu ile ilgili farklı problemleri de beraberinde getirmektedir.

Hukuk eğitiminin diğer bir sorunu ise pek çok hukuk fakültesinin müfredatlarının birbiri ile uyuşmamasıdır. Bir açıdan bakıldığında zenginlik gibi görünen bu husus, fakülteler arasındaki öğrenci geçişlerinde çeşitli sorunlara sebep olabilmektedir. Aynı sorun Hukuk fakültelerine bağlı Adalet Meslek Yüksekokulları açısından da yaşanmaktadır. İlgili dersi verebilecek öğretim elemanı bulunabilmesine bağlı olarak açılan dersler ve oluşturulan fakülte ve yüksekokul müfredatlarının en azından temel dersler ve kredileri konusunda uyumlaştırılması gerekmektedir[13].

Diğer bir sorun kümesi de fakülte eğitiminin tamamlanmasının ardından adliyelerde yapılan stajlardan kaynaklanmaktadır. Tamamen teorik bir eğitim alan hukuk öğrencisi, zaten dava dosyaları ile yeterinde meşgul olan adliyelerde pratik bilgi alma imkanına da sahip olamamaktadır. Hakim ve savcıların iş yüklerinin çok olması sebebi ile imza atma prosedüründen ibaret olan adliye stajı dönemi, tecrübeli bir avukat yanında yapılan staj ile kısmen telafi edilebilmekte, böyle bir imkanın olmaması durumunda ise asıl sorun, avukatlığa başlanması ile birlikte ortaya çıkmaktadır. Bu da maalesef asgari ücret sınırında çalışan avukatlar sınıfının ortaya çıkmasına sebep olmaktadır. Bu sonucun avukatlık mesleğinin saygınlığına olan olumsuz etkisi ise tartışmadan varestedir. Bir türlü çıkarılamayan avukatlık sınavı da bu problemleri büyütmektedir. Buna karşın çok iyi bir saha araştırması yapılmadan çıkarılacak avukatlık sınavının, bazı problemleri çözmekle birlikte pek çok problemi de beraberinde getireceği gözden uzak tutulmamalıdır.

Benzer sorunların hakimlik ve savcılık sınavı aşamasında yaşandığı görülmektedir. Yine hakimlik ve savcılık stajı sırasında pek çok farklı sorunun da ortaya çıktığı görülmektedir. Avukatlık, hakimlik ve savcılık stajlarının hukuk eğitiminin bir parçası olduğu kabul edildiğinde sorunun sadece fakültelerden kaynaklanmadığı, çok farklı mercilere ait olduğu görülmektedir. Bu mercilerdeki hukuk dışı sorunların, özellikle siyasi sorunların dolaylı da olsa hukuk eğitimini önemli bir şekilde etkilediği söylenebilir. Öğretim elemanı sayısındaki sorunun bir benzeri olarak, hakim ve savcı sayısındaki azalmanın önemli sebeplerinden birisi olan 15 Temmuz kalkışması sonrası görevden uzaklaştırılan hakim ve savcıların yerine, kısa bir staj sonrası göreve başlayan yeni hakim ve savcıların vereceği kararlardaki hukuki hatalar da yeni ortaya çıkacak olan başka bir sorundur[14].

Hukuk eğitiminde karşılaşılan problemlerin en önemlileri ve görünür olanları bu şekilde özetlenebilir. Bu problemlerin yanında pek çok daha alt problemler de bulunmaktadır. Her bir problemin kaynağının farklı olmasına bağlı olarak getirilecek çözüm önerileri de farklı olacaktır

[13] Akıncı, 21.
[14] Bu kısım bildirinin sunumundan sonra, basım aşamasına gönderilen metne eklenmiştir.

USE OF REMOTE PRESENCE TECHNOLOGY FOR RURAL/REMOTE HEALTH EDUCATION: BACCULAUREATE NURSING EDUCATION IN NORTHERN SASKATCHEWAN

Heather EXNER-PIROT
College of Nursing University of Saskatchewan, Canada
heather.exnerpirot@usask.ca

Lorna BUTLER
University of Saskatchewan, Canada
lorna.butler@usask.ca

Lois BERRY
University of Saskatchewan, Canada
lois.berry@usask.ca

ABSTRACT
In 2012, the College of Nursing at the University of Saskatchewan began delivering its baccalaureate nursing education program to two Indigenous communities in northern Saskatchewan using a variety of distributed education tools, including remote presence robotics. This innovative use of technology allowed faculty members from the main campus in the city of Saskatoon, several hundred kilometers away, to teach clinical skills to northern students. This has made nursing education much more accessible for the students; by learning where they live, they are far more likely to remain and work in their northern communities, thereby addressing the critical shortage and improving the cultural competency of the local health care workforce.

INTRODUCTION
Remote, indigenous communities throughout northern Canada and the circumpolar North have long faced difficulty recruiting qualified health professionals, and in particular Registered Nurses (RNs) who provide the bulk of primary health care services in the region. This shortage of RNs has led to an inability to deliver adequate services; ballooning costs associated with recruiting and incentivizing southern RNs to work in the North, including travel and housing costs; and challenges in providing culturally competent and consistent care. Significant gaps in health outcomes, including high rates of infectious and chronic illnesses amongst indigenous northerners (Exner-Pirot and Butler 2014b), coupled with unsustainable costs with negligible impact on improving health indicators (Young and Chatwood 2011), demonstrate the untenability of this state of affairs.While there are various perspectives on the causes and solutions to these challenges, there is near unanimity on the desire to educate more indigenous community members as RNs and other health professionals to serve these communities.
This paper describes the efforts of the College of Nursing of the University of Saskatchewan, located in central Canada, to adapt a new telehealth technology – remote presence robotics – for use in clinical education in small rural centres. Combined with other pedagogical tools such as Blackboard, WebCT, videoconferencing, and other online resources, remote presence robotics has allowed faculty in the southern urban centres to deliver a high-quality/same-quality four-year university nursing education to northern and indigenous students in the communities of Ile-a-la-Crosse (pop. 1800) and La Ronge (pop. 3000), and more recently to the small southern Saskatchewan city of Yorkton (pop. 15,000). It is the first school in nursing or any health science to use remote presence robotic as a means to teach clinical skills as part of an accredited baccalaureate program.
The innovative use of new telehealth technologies to make nursing education more accessible to prospective students living in rural and remote communities has the potential to address the shortage of qualified health personnel in rural areas not only in northern Canada, but anywhere around the world with an internet connection.

BACKGROUND
In 2008, the Northern Health Sector Training Sub-Committee of northern Saskatchewan's inter-sectoral Labour Market Committee completed a data collection effort to determine human resources needs and gaps in northern health services. Following input from 10 health authorities and 30 separate employers in Northern Saskatchewan, a region the size of France with 45 communities totalling approximately 37,000 people, it found that of the region's 1,283 health care positions, 10 per cent were vacant, the overall turnover rate was 19 per cent, and 170 new hires

would be required each year in the next five years (Thomson, 2011). Registered Nurses made up the largest proportion of the health care workforce but were also identified as the occupation in shortest supply. As a result of these findings, the Sub-Committee invited post-secondary institutions in Saskatchewan to join discussions to create a workforce plan for Northern Saskatchewan.

Education is frequently cited as fundamental in improving the social determinants of health. But while strategic planning and priority setting at provincial, regional and municipal levels often make reference to the need for improved access to education, implementation can be challenging.

However in this case, the Government of Saskatchewan responded to the request to change the way nursing education was delivered, allowing stakeholders to situate health education to directly respond to the needs of rural, remote and northern communities (Berry, Butler, & Wright 2014). The resultant *Learn Where You Live* education model, whereby the College was expected to deliver its education in small communities, rather than expecting students from those communities to move to the central campus, challenged the traditional approach of face to face classroom lectures and simultaneously altered the learning space as one that was inclusive of engaging with students at distributed sites across the province. While changing the structure was made possible with the use of technology, the implications for both institutional and individual preference for well-known teaching methods was perhaps the most provocative. This disruption of pedagogy challenged the status quo on two fronts: first, moving from an institution- to a student-centered approach to learning and second, taking the perspective that the professors were remote, not the students, thus acknowledging that "learning spaces not places" can be effectively co-constructed (Bassendowski, 2014).

The introduction of a distributed learning approach was an invitation to think differently about how to engage with health regions and service delivery partners for clinical practicums. Embracing an outreach and engagement model acknowledged the contributions of diverse intellectual communities (Walker, Golde, Jones, Bueschel & Hastings, 2008). Formal recognition was extended through tripartite agreements between the relevant communities, health regions and providers of post-secondary education. Working with students was viewed as a strength such that human resource strategies became influential for the retention of experienced nurses and for the recruitment of new staff. Education was considered an opportunity to invest in the development of the community as well as contributing to the number of Indigenous Registered Nurses within the profession. Clinical placements for students were predicated on a mutually beneficial outcome, as opposed to viewing the community or placement as a means to an end.

REMOTE PRESENCE TECHNOLOGY

The use of technologies such as videoconferencing and telehealth consultations are accepted methods for both health education and service delivery. These methods, while helpful for content delivery of course material and/or low risk medical consultations, lacked the specificity needed to teach and evaluate the performance of skills and techniques in preparation for safe nursing practice. Meeting the goal of the northern communities of offering a high quality program with exposure to the same faculty and learning opportunities as on the main southern campus required a new, innovative approach to both teaching and technology. Remote presence robotics, which has primarily been used in acute cardiovascular treatment and care, offered the technology needed.

The robot is approximately five feet tall (1.5 metres) with an articulated flat-screen monitor for a "head," a dual camera configuration for direct and peripheral vision, and full on-board audio. The robot allows the campus-based faculty member to communicate and move around independently in the rural lab, moving from bedside to bedside and in front of the class, to teach and assess clinical competencies.

The robot also has a number of health assessment functionalities. By attaching peripherals such as digital stethoscopes, otoscopes, ophthalmoscopes, or dental cameras, the faculty member is able to see and hear what the student sees and hears in real time. This can even be an advantage over face-to-face teaching (e.g., if the faculty member is using the stethoscope to teach about heart sounds and electrocardiograms, he or she can hear the heartbeat at the same time as the student, and provide feedback as they listen together). In a face-to-face experience, the faculty member and student would take turns listening through a regular stethoscope, where a time lag exists and differences between faculty and student observation often occur.

Similarly, because the robot has such a powerful camera, it can zoom in on an area and provide higher definition and acuity than the human eye (e.g., if examining a skin rash or wound) (Exner-Pirot and Butler, 2014a).

Despite the absence of data or past practices for using remote presence robotics (RP) for education and training purposes, the system was implemented in two northern sites (McCabe et al. 2015)

Initially faculty members' interest and engagement were varied. The teaching assignment was given to those who were motivated to think differently about curricula design, creating new ideas for extending the use of the technology and a willingness to learn and incorporate the technology within their programs of research. Further, to promote the authenticity of the college's investment in the *Learn Where You Live* model, a clause was added to the letter of employment that required all new faculty to be willing to teach in a distributed environment. This change in policy,

while aimed at building capacity for expertise in using remote presence, demonstrated how strategic planning inclusive of policy level implications contributed to creating a culture that actioned the values of the College of Nursing. By the third year (2015) of using the RP, the teaching assignment was highly accepted by faculty with few remaining hesitant or unsupportive of remote presence technology.

STUDENT SATISFACTION

Patient satisfaction surveys that have been done with remote presence technology have indicated high levels of satisfaction with the quality of care (Sucher et al. 2011) and were replicated to assess the Northern nursing students' satisfaction. Within the program, 94 per cent of students felt comfortable with the professor teaching them using the robot; 63 per cent strongly agreed, and 31 per cent agreed that the combination of an on-site registered nurse facilitator and remotely connected professor provided a good learning environment; and only 6 per cent thought the RP-7i was annoying (Exner-Pirot & Butler, 2014a).

CHALLENGES

Introducing remote presence technology was but one new innovation in a series of changes at the College of Nursing. The College implemented a new baccalaureate undergraduate program with a new non-direct entry curriculum model and began delivering the entire undergraduate program in two new remote, northern communities. The new distributed sites posed a significant change in the University's approach to programming. The existence of these sites and the technological innovations used to deliver programming challenged the university's view of its role in relation to rural and remote communities, and placed demands on the infrastructure and human resources in the communities necessary to support the students and the program. Distributed learning also required a different relationship with communities than existed in the past.

THE UNIVERSITY'S ROLE IN RELATION TO STUDENTS IN RURAL AND REMOTE COMMUNITIES

One of the most significant challenges faced by College of Nursing administrators was in relation to the way in which the University viewed its accountability for programming in such communities. In the past, while individual courses or limited portions of the University's programs had been delivered through Saskatchewan's regional college system in some small communities, the University had limited experience in delivering whole programs under its own responsibility in such communities. It had no experience in delivered health professional programming, with its highly technical clinical skills component and stringent external accreditation requirements, to stand-alone sites such as these. Nursing education administrators worked closely with university level administrators to determine what level of service students in such programs should be entitled to receive. How does a university provide library and librarian services in such locations? Whose responsibility is it to ensure that students have equitable access to student health and counselling services? How do university student unions provide service and supports to students in these communities? Nursing education administrators worked closely with senior administrators to ensure that these questions were answered. It was important to the College administrators that these students were viewed as students of the *university,* and not simply the responsibility of the College of Nursing.

OVERCOMING HISTORICAL RELATIONSHIPS

Despite the fact that the College of Nursing opted to work in communities where community leaders had invited and welcomed them, this welcoming enthusiasm did not always translate at the service level. Given that these communities were predominantly Indigenous (Dene, Métis and Cree), the skepticism or guarded responses from some individuals in the health and education sectors may well have arisen from the history of universities in relation to Indigenous people—a history of broken promises and research "done on" rather than "done with" (Castellano, 2004). As the College of Nursing administrators attempted to lay the groundwork for offering the program, they worked closely with existing community champions to engage and gain the trust of frontline staff in program development discussions. These champions assisted greatly in helping to establish the College as a credible partner, and in teaching College administrators how to listen and engage with community members. Attending to the creation of trusting relationships was especially important when addressing issues in relation to the instructional technology surrounding RP use.

BUILDING AN INFRASTRUCTURE

One of the challenges of offering educational programming in rural and remote areas is the lack of available and suitable space for educational purposes. This is compounded in offering nursing education programming, because of the need for hospital-like clinical laboratory space. In one community where the program was offered, the College was able to locate in the Education Center of the partnering regional college, as well as at an offsite, leased building

which contained an existing nursing lab. The Education Center contained existing classrooms, student study space and student services.

In the other community, the nursing education program was located in the health services portion of a large community building that encompassed both health services (in-patient acute services, emergency stabilization and transport services, long term care, primary care and child care services), as well as educational programming (high school, adult education center, community fitness center and library). In this facility, the College had to develop its infrastructure from scratch, creating classroom and clinical laboratory space as well as faculty space. This required university architects and planners, working at a distance, to collaborate with onsite facility managers to ensure that the designs created worked in the space available. On more than one occasion, College administrators, including the Instructional Technology director, conducted a tour of the space by remote presence, facilitating consultation between university architects and planners on the main campus and local front-line facility staff in the space six hours away. The university planners were able, using remote presence technology, to examine aspects of the space in minute detail, and to work through issues with the onsite facility staff. At no time did the architects and planners from the University physically six hours to visit the site.

PROVISION OF HIGH QUALITY INSTRUCTIONAL TECHNOLOGY SERVICES

While each of the communities with which the College of Nursing partnered had access to basic internet services, the delivery of an entire educational program and the need for consistent, high quality internet connectivity posed a challenge. Each side of the community building in one community and both sites of the regional college buildings in the other location had their own unique capabilities and challenges for connectivity, including variations in network availability, broadband speed and capability, fire walls, standard equipment specifications, onsite support etc.

Lengthy detailed and highly technical consultation and negotiation happened with many stakeholders at the table: university level, college of nursing level, regional college, community, health region, and government parties. This important and challenging aspect of program planning ultimately insured ensure the level of consistent, high quality service required at all sites of the program in each community.

The presence of the program in the community and the requirement for high quality connectivity ultimately resulted in improved service to both the regional college and health region with whom the College of Nursing partnered. The regional college was able to join a high speed research network, and the health region received funding for an onsite technician, where previously services were provided remotely from another health regions three hours away. Such capacity- building at a community level is an important aspect of relationship of the twenty-first century university with its community partners (Berry, 2015).

DEVELOPING THE APPROPRIATE HUMAN RESOURCE POLICIES AND PROCESSES

As previously noted, one of the reasons that health professional education has not been available in rural and remote communities is the lack of available, appropriately educated personnel to deliver the program. While remote presence technology provided an excellent mechanism to deliver the actual course content and to engage with students in the clinical lab situation using professors from one of the College's existing campuses, there was need for on-the-ground program coordination, lab facilitation and support for students.

Initially the College of Nursing worked closely with the partnering regional colleges to utilize their current nursing faculty who delivered a practical nursing program in provided these needed supports to students. However, the competing demands, differing expectations, dramatically different wages, benefits and conditions of work provided by the two institutions, and lack of clarity regarding to whom these individuals reported, ultimately necessitated the creation of a memorandum of understanding outlining the roles, commitments and accountabilities of each party. Eventually, secondment agreements were developed for to accommodate full time commitment of the regional college nursing education staff to work with the College of Nursing students and faculty.

While initially the College of Nursing was competing with the partnering institutions for the time of these individuals, eventually a mutually agreeable arrangement was developed. Over time, additional nursing staff from the local health regions became involved in working with the students and with remote presence technology in the lab setting. This sparked their interest in nursing education, and in the use of technology in their clinical practice. The presence of the College program ultimately built capacity in the community with respect to development of teaching and technology skills of nurses in the community.

OUTCOMES

In the north, for the north and by the north is an outcome that is not necessarily novel but the approach used to achieve the goal was highly innovative. Distributed education in nursing had previously involved replicating the main campus program at a distant, physical location where the goal of connecting students across the province occurred once a year

at convocation ceremonies. Extending that same approach to the north was both cost and human resource prohibitive. The willingness of the College of Nursing to take a risk by using a technology that had not previously been tested in health education added a level of awareness to those involved from the communities, the health regions and the post-secondary partners of their contributions to creating new pathways for education in remote regions. By focusing the attention and successes gained in using the RP back to the communities, the students became innovators of their own success. Collectively those involved in the tripartite relationship transformed a system to give access to education and service delivery not previously considered possible.

In the short term, policy level changes were critical to implement the RP. The necessity of the university to extend its reach across the province had broad implications for the way the existing infrastructure would support student learning. One of the most challenging aspects was the need for provincial information communication systems to work together. While outstanding potential for connectivity existed, operationally barriers existed within and among institutions. The impact of addressing these limitations extended better connectively to the community as well as facilitating the distributed nature of the classroom experience. At the point of teacher-student interaction the behavioural changes for members of the support units within the academy, both administratively and individually marginalized the college rather than embracing the innovation. This continues to be a work in progress.

The leadership needed to stay the course of implementing a new program with a new admissions process, a new curriculum, the addition of the northern sites and the technology used to deliver the program was provocative while at the same time highly supportive of existing strengths of the province. This recognition became the incentive to participate. When coupled with a "gentle nudge" (Thaler & Sunstein, 2009,p. 6.) to explore differing options, the phrase "the way it has always been done" become "the way it can be done". Long standing systemic processes aligned to achieve the outcome of advancing post-secondary education for all of the tripartite partners.

The long term goal of addressing social determinants of health will evolve as communities continue to support nursing education. Early indicators of success relate to the exposure of students in the primary and secondary education system to nursing students as role models for health promotion and prevention, families becoming engaged in the learning of their children enrolled in the program are serendipitously learning healthy behaviours and the outcome of culturally relevant care provided by local graduates hired by the health regions.

REFERENCES

Bassendowski, S., Mackey, A., & Petrucka, P. (2014). Pedagogical disruption then construction. *The Society of Digital Information and Wireless Communications.* Retrieved from *sdiwc.net/digital-library/web-admin/upload-pdf/00000925.pd. ISBN:978-0-9891305-4-7*

Berry, L. (2015). Furthering nursing scholarship in today's postsecondary institutions: The legacy of Ernest Boyer. *Quality Advancement in Nursing Education,* 1 (3), 1-15.

Berry, L., Butler, L., & Wright, A. (2014). Transforming the health landscape in northern communities: Shared leadership for innovation in nursing education. *International Journal of Nursing Education*, *4*(9), 33-43.

Castellano, M.B. (2004). Ethics of Aboriginal research. *Journal of Aboriginal Health*, 1 (1), 98-114.

. Exner-Pirot H. & Butler,L. (2014a). *Health for Prosperity: The Role of a Local Nursing Workforce in Developing Healthy and Prosperous Aboriginal Communities*. Ottawa: Conference Board of Canada.

Exner-Pirot H. & Butler,L. (2014b). "Health and Health Care in the North: The Determinants of Northern Health" in Herman Michel and Cathy Wheaton (eds.) *Kitaskino: Key Issues, Challenges and Visions for Northern Aboriginal Communities in Canada.* British Columbia: J Charlton Publishing Ltd.

Laurence Thompson Strategic Consulting. (2008). *A Report on Northern Health Human Resources Data Collection.* Saskatoon: Laurence Thompson Strategic Consulting.

McCabe, J., Butler, L., Exner-Pirot, H., Berry, L., Bullin, C., Bilinski, H., Wright, A. (2015). Building the scholarship of technology in health: Extending the use of remote presence telementoring to nursing education. *Journal of Technologies and Human Usability*, 11(4), 15-28.

Sucher, J.F., Todd, S.R., Jones, S.L., Throckmorton, T., Turner, K.L., & Moore, F.A. (2011). "Robotic Telepresence: A Helpful Adjunct That Is Viewed Favorably by Critically Ill Surgical Patients." *American Journal of Surgery*, 202 (6), 843–47.

Thaler, R. & Sunstein, C. (2009). Nudge*: Improving decisions about health, wealth and happiness.* New York: Penguin Books.

Walker, G., Golde, C., Jones, L.,Bueschel, A. & Hastings, P.(2008). The Formation of Scholars: *Rethinking Doctoral Education for the Twenty-first Century*. San Francisco: Jossey-Bass Publishers.

Watt, M., Butler, L., Exner-Pirot, H. & Wright, A. (2014). Linking learners for life where they live (L4): Developing a global health initiative for global health. *Journal of Professional Nursing*. 31(4), 359-364.

Young, K. and Chatwood, S. (2011). Health care in the North: What Canada can learn from its circumpolar neighbours. *Canadian Medical Association Journal*, 183(2), 209-214.

ACKNOWLEDGEMENTS

The authors would like to thank the E-Learning team of the University of Saskatchewan, College of Nursing, led by Mark Tomtene, for their forward thinking and support in developing the required systems for a distributed nursing education program. Faculty members Dr. Carol Ann Bullin and Dr. Jill Bally, are thanked for their willingness to pioneer teaching with remote presence technologies.

USING FAMILY INVOLVEMENT IN THE SOCIAL STUDIES COURSE: TEACHER VIEWS

Handan DEVECİ

Anadolu University

Hatice TÜRE

Anadolu University

In order for schools to function as a learning environment, they need to develop their relationship with the environment and the society. One environmental aspect that schools interact with to achieve their goals and fulfil the expected functions is certainly families. The importance of families in increasing student achievement, interest and attitude toward the school is obvious. Family involvement with the school is necessary to exchange information regarding the education provided at school between teachers and families, giving families directions about the activities that they can do with their children to ensure continuance, and include families in the activities performed. Within the scope of the social studies course, it is aimed to educate individuals who are aware of their responsibilities, understand the change and sustainability in the context of past-present and future, love their country and are sensitive about the issues that concern their country and the world, adopt the scientific perspective, are respectful to human rights, and care about the environment that they live in. In order for the course to achieve these aims and transfer what is learned in the social studies course to daily life, families as an important part of children's lives and the school need to become integrated. In other words, family involvement in the social studies course is needed to achieve these aims. Teachers as the instructors of the course have a significant role in ensuring family involvement in the social studies course.

This qualitative study aimed to reveal social studies teachers' views on ensuring family involvement, and sought after an answer to the research question “What are social studies teachers' views on ensuring family involvement in the social studies course?”. Nearly 10 social studies teachers will participate in the study. The participants have been selected through maximum diversity sampling. The sampling criteria are the socioeconomic levels of the schools that teachers work in. The research data will be analysed using content analysis. The data gathering process is still in progress.

Key words: Social Studies, Family Involvement, Teacher Views

ÜÇÜNCÜ YOLUN İMKANI AÇISINDAN ANGLOSAKSON FELSEFE VE İSLAM FELSEFESİ

Yrd. Doç. Dr. Zübeyir OVACIK
Aksaray Üniversitesi, Fen Edebiyat Fakültesi, Felsefe Bölümü
zubeyirovacik@gmail.com

Felsefi düşüncenin tarihine bakıldığında çok soyut teorik çabaların bile esasında pratiğin anlamlandırılmasıyla ilişkili olduğu, böylelikle pratikteki çözümlerin de teorik yetkinliklere yaslandığı ifade edilebilir. Nitekim medeniyetlerin başarısı da, varlığa ve insana dair geliştirilen teorik bakış açılarının pratik boyutlardaki tutarlılığında tezahür etmektedir. Bu anlamda batı medeniyetinin pratik birikiminin teorik olarak güçlü bir felsefi senteze yaslandığı söylenebilir. Bilindiği üzere batı düşüncesinin modern döneminde beliren yeni bir varlık tasavvurunda tümevarımın, dolayısıyla emprik bir yöntemin esas alındığı yaygın bir tespittir. Amprizm kavramı ise batı felsefi geleneği içerisinde daha çok İngiliz düşünce geleneğini ifade etmek için anahtar kavram mesabesindedir. Ortaçağ felsefesinin sonlarına doğru böylesi bir yöntemi ilk sistemleştirenlerin de İngiliz düşünürleri olması dikkat çekicidir. Bu çerçevede yeni bir dönemin başlangıcı niteliğindeki Rönesans'ın ortaya çıkışında İslam felsefesinin oynadığı müsellem rol hatırlanabilir. Böylesi bir rol, aynı zamanda emprik bir düşünceye giden yolu ifade etmektedir. İslam düşüncesinin tarihi seyrine göz atıldığında da klasik döneme tekabül eden dönemde ortaya konulan düşünce sistemlerinin varlık ve insan algısı pratikteki medeniyet ve kültür başarısıyla doğru orantılı olduğu görülebilir. İslam düşüncesinin bu başarısı emprik yöntemin esas alınışıyla ilgili olabilir mi? Bu çalışmada bir çıkış yolu imkanı olarak üçüncü yolun İslam düşüncesinde mevcut olup olmadığı ve daha çok emprik düşünceyle formülleştirilen bu yaklaşımın İslam düşüncesindeki ve Batı felsefesindeki etkileşimleri tartışılacaktır.

Anahtar Kavramlar: İngiliz Felsefesi, İslam Felsefesi, Amprizm, Üçüncü Yol

A CASE STUDY OF PROJECT-BASED LEARNING FOR TEACHING EDUCATIONAL SOFTWARE DEVELOPMENT

Erhan GÜNEŞ
Ahi Evran University
TURKEY
guneserhan@gmail.com

Uğur BAŞARMAK
Ahi Evran University
TURKEY
ugurbasarmak@gmail.com

Mustafa YAĞCI
Ahi Evran University
TURKEY
mustafayagci06@gmail.com

ABSTRACT

Project-based learning (PBL) is a model that enables students learn around projects. PBL is especially utilized in higher education. Students study in groups to finish a project in a planned and systematic way. This study aimed to investigate the effectiveness of a case of teaching educational software development and implementation processes in a PBL context. In this case study, preservice teachers developed educational games as a project in groups. Furthermore, they implemented these educational games actively in schools for evaluation of the project deliverables. By this way, researchers intended to come up with a sample real life solution to fill in the gap between theory and practice in teacher education. Results related to PBL and implementation processes and recommendations for future studies were given in the context of the case.

KEYWORDS: project based learning, educational software, preservice teacher

ACKNOWLEDGEMENT

This paper was supported by the Ahi Evran University Scientific Research Projects Coordination Unit. Project Number: **PYO-EGF.4001.15.003**

CONCEPTUAL EVOLUTION MAP OF EDUCATIONAL RESEARCH ARTICLES AND REVIEWS (1980-2015)

Haydar YALÇIN
İzmir Katip Çelebi University
TURKEY
haydar.yalcin@gmail.com

Mutlu Tahsin ÜSTÜNDAĞ
Gazi University
TURKEY
mutlutahsin@gmail.com

Talih ÖZTÜRK
İzmir Katip Çelebi University
TURKEY
talihztrk@gmail.com

ABSTRACT

This study aims to investigate concepts, evolution and popularity of these concepts, which were studied on, in educational research articles and reviews published between 1980 and 2015 in periods of 5 years and to present a Conceptual Evolution Map regarding them. The dataset of the study consists of articles and reviews (totally 167.277 publications between 1980 and 2015) derived from Web of Science (WOS) database in the subject category of "education & educational research". In order to reach this dataset, the query *WC= (Education & Educational Research)* was executed on WOS database and results were downloaded for analysis. Keywords in the dataset were analyzed in order to present general tendencies of educational research publications in terms of research topics in a comprehensive manner. Data validation and clean up techniques were conducted in order to make the dataset to be integrated into SQL Server database and to be analyzed easily. In this process, publications without at least two keywords were ignored. After this elimination, totally 86.343 publications were found to be ready for analysis. Afterwards, keywords of each publication which point out the same concepts were combined according to the comments of five experts in the field of educational sciences. Finally, the keywords were processed using SciMAT (Science Mapping Analysis software Tool). The processes of interpreting and reporting results have been being conducted, but have not finished yet. One of the important results reached yet is that the most popular concepts studied on in educational research are *interactive learning environments and applications.*

KEYWORDS: educational research, conceptual evolution, article

PURPOSES OF SECONDARY SCHOOL STUDENTS İN USİNG SOCİAL NETWORK*

Uğur BAŞARMAK
Ahi Evran University
TURKEY
ugurbasarmak@ahievran.edu.tr

Abstract

In this study, how the secondary school students use social networks were analyzed based on various variables and the opinions of the students were collected related with the social network usage. In order to determine how students use the social networks, " Scale of Purposes in using social networks" was utilized. The personal information form was applied to 1266 students from fifth to eighth grades in a state secondary school in Kirsehir. Besides, an interview form was created by the researcher as the data collection tool in the study. The questions in the interview form were sent to four academicians and the interview questions were finalized in accordance with the suggestions. For obtaining deeper results, the researcher conducted face-to-face interviews with total of 12 students who were purposively selected and have high-medium-low level from each grades. The quantitative data was analyzed statistically and the content analysis was used in the analysis of the qualitative data which was obtained by using semi-structured interview form.

Keyword: Secondary School Students, Social Network, Kirsehir

* Bu çalışma Ahi Evran Üniversitesi Bilimsel Araştırma Projeleri Koordinasyon Birimince Desteklenmiştir. Proje Numarası: EGT.E2.16.035

THE EFFECT OF MOBILE BLOGS (MOBLOG) IN TEACHER EDUCATION ON PROSPECTIVE TEACHERS' ATTITUDES TOWARDS TEACHING PROFESSION

Serçin KARATAŞ
Gazi University
TURKEY
sercinkaratas@gmail.com

Mutlu Tahsin ÜSTÜNDAĞ
Gazi University
TURKEY
mutlutahsin@gmail.com

Hasan ÇAKIR
Gazi University
TURKEY
hcakir@gmail.com

Sami ŞAHİN
Gazi University
TURKEY
sami@gazi.edu.tr

ABSTRACT

The rapid development of mobile technologies and the widespread use of these technologies has accelerated the research on the potential of these technologies for learning. Mobile learning offers instant communication between teachers and students. Similarly mobile learning provides opportunities in teaching-learning process for prospective teachers. In this study, three different mobile technologies were provided for 78 prospective teachers, from Gazi University and Ahi Evran University, who were attending to Teaching Practice Course in the 2012-2013 academic year. Prospective teachers shared their experiences regarding mobile technologies through blogs within an LMS. In this research, the effect of prospective teachers' reflections through blogs on their attitudes towards teaching profession was examined. In conclusion, using mobile blogs to share experiences of prospective teachers was not found to be effective on their attitudes towards teaching profession.

KEYWORDS: mobile technologies, teacher training, mobile blogs

ACKNOWLEDGEMENT

This paper was supported by the Gazi University Scientific Research Projects Coordination Unit. Project Number: **04/2011-20**

ÜNİVERSİTE ÖĞRENCİLERİNE YÖNELİK PROBLEME DAYALI ÖĞRENMEDE MATEMATİK KAZANIMLARI ÖLÇEĞİ GELİŞTİRİLMESİ

Mahir BİBER
mahir.biber@gmail.com

Neşe BAŞER
nese.baser@deu.edu.tr

Bu araştırmada, probleme dayalı öğrenme yöntemi ile öğrenim gören üniversite öğrencilerinin, matematiksel kazanımlara ulaşma düzeylerini ortaya koyabilecek bir "Probleme Dayalı Öğrenmede Matematik Kazanımları Ölçeği" geliştirilmesi amaçlanmıştır. Buna göre, araştırma kapsamında Dokuz Eylül Üniversitesi Mühendislik Fakültesi ve Deniz İşletmeciliği Yüksekokulu'nda bulunan çeşitli bölümlerde öğrenim gören toplam 182 üniversite öğrencisi ile çalışılmıştır. Ölçeğin kapsam geçerliğini belirleyebilmek amacıyla matematik eğitimi ve eğitim bilimleri alanlarında görev yapan 8 uzmanın görüşlerinden yararlanılmıştır. Ölçeğin ön deneme uygulaması, Dokuz Eylül Üniversitesi İlköğretim Matematik Öğretmenliği bölümünden rasgele seçilen 30 öğretmen adayı ile gerçekleştirilmiştir. "Probleme Dayalı Öğrenmede Matematik Kazanımları Ölçeği"nin yapı geçerliliği için ise açımlayıcı faktör analizi yapılmıştır. Yapılan faktör analizinde ölçekten 8 madde çıkarılmış ve kalan verilerin genel bir faktör altında toplandığı görülmüştür. Faktör analizi sonucunda ölçekten atılması gereken maddeler çıkarıldığında 32 maddeden oluşan bir ölçek meydana gelmiştir. Hazırlanan ölçeğin Cronbach Alpha Güvenirlik Katsayısı 0,97 ve geçerlik değeri ise 0,98 olarak bulunmuştur. Genel olarak elde edilen değerlere bakıldığında araştırmacı tarafından hazırlanan "Probleme Dayalı Öğrenmede Matematik Kazanımları Ölçeği"nin geçerlik ve güvenirliği yüksek bir ölçek olduğu söylenebilir. Geliştirilen ölçeğin probleme dayalı öğrenme yöntemini kullanacak matematik eğitimcilerine ve ilgili literatüre önemli katkılar sağlayacağına inanılmaktadır.

Keywords: Probleme Dayalı Öğrenme, Matematik Eğitimi, Kazanım, Ölçek, Faktör Analizi

MATEMATİK EĞİTİMCİLERİNİN TEKNOLOJİYE BAKIŞ AÇILARININ VE MATEMATİK ÖĞRETİMİNDEKİ TEKNOLOJİ İHTİYAÇLARININ BELİRLENMESİ

Yrd. Doç. Dr. Sezer KÖSE BİBER
İstanbul Üniversitesi, Hasan Ali Yücel Eğitim Fakültesi,
Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü
sezer.kose@gmail.com

Yrd. Doç. Dr. Mahir BİBER
İstanbul Üniversitesi, Hasan Ali Yücel Eğitim Fakültesi,
Matematik Eğitimi Anabilim Dalı
mahir.biber@gmail.com

ÖZET

Günümüzde bilgi ve iletişim teknolojilerinin hızla gelişmesi matematik öğretiminde bu teknolojilerden etkin bir şekilde yararlanılmasını zorunlu hale getirmiştir. Matematik öğretim programları incelendiğinde derslerde bilgi ve iletişim teknolojilerinin kullanımını gerektiren kazanımlara yer verilmesi de bu durumun doğal bir sonucudur. Matematik derslerinin çağın gereklerine ve yapılandırmacı öğrenme yaklaşımına uygun olarak verilebilmesi için öğretmenlerin bu teknolojilerden etkin bir şekilde yararlanması gerekmektedir. Buna göre bu araştırmada, matematik öğretiminde eğitimcilerin teknolojiye bakış açılarını belirlemek ve bilgi ve iletişim teknolojilerinden hangilerine, ne ölçüde gereksinim duyduklarını ortaya koymak amaçlanmıştır. Bu amaç doğrultusunda araştırmacılar tarafından yarı-yapılandırılmış bir görüşme formu hazırlanarak matematik öğretmen adayları, matematik öğretmenleri ve matematik eğitimcisi akademisyenlerden oluşan toplam 30 kişiyle görüşmeler yapılmıştır. Görüşmeler ortalama 25-60 dakikalık süreler içerisinde gerçekleştirilmiştir. Elde edilen veriler Nvivo 11 programı kullanılarak çözümlenmiş, oluşturulan tema, alt tema ve kodlar tekrar edilme sıklıkları ve yüzdelik dilimlerine göre grafiklerle sunulmuştur. Araştırma kapsamında elde edilen görüşler genel olarak değerlendirildiğinde; matematik öğretmenlerinin, öğretmen adaylarının ve akademisyenlerin derslerinde teknoloji kullanımının gerekli ve faydalı olduğunu düşündükleri, buna karşılık özellikle öğretmen adaylarının ve öğretmenlerin kendilerini teknoloji kullanımı açısından yeterli görmedikleri, eğitim fakültelerinde kendilerine yeterli teknolojik bilgi ve uygulama imkanı verilmediğine inandıkları, eğitim kurumlarının mevcut koşullarının da teknoloji kullanımı açısından yeterli olmadığını düşündükleri görülmektedir.

Anahtar Kelimeler: Teknoloji, Matematik Öğretimi, Matematik Eğitimcisi, Matematik Öğretmeni, Matematik Öğretmen Adayı

ÖĞRETMEN ADAYLARININ BELİRLİ İNTEGRALDE DEĞİŞKEN DEĞİŞTİRMEDE YÖNTEMİNDE ÖNCÜLLERİ DİKKATE ALMA DURUMLARININ İNCELENMESİ

Prof. Dr. Feyzullah AHMETOĞLU
Eğitim Fakültesi
Giresun Üniversitesi
Türkiye
feyzullah.ahmetoglu@giresun.edu.tr

Yrd. Doç. Dr. Funda AYDIN-GÜÇ
Eğitim Fakültesi
Giresun Üniversitesi
Türkiye
fundaydin05@gmail.com

Bu çalışmanın amacı ilköğretim matematik öğretmeni adaylarının belirli integralde değişken değiştirme yöntemini kullanırken, bu yöntemin kullanılmasına yönelik öncülleri dikkate alma durumlarını belirlemektir. Bu bağlamda ilköğretim matematik öğretmenliği ikinci sınıfta öğrenim gören 52 öğretmen adayından, değişken değiştirme yöntemi ile çözülebilecek iki belirli integral sorusunu çözmeleri istenmiştir. Bu sorulardan biri has diğeri has olmayan integraldir. Öğretmen adaylarına soruları cevaplamaları için yeterli süre verilmiştir. Öğretmen adaylarının çözümleri iki araştırmacı tarafından analiz edilmiş ve değişken değiştirme yöntemini kullanan öğretmen adaylarının, bu yöntemi kullanırken gerekli öncüllere dikkat edip etmedikleri belirlenmiştir. Çalışma sonucunda 23 öğretmen adayının has integrallerde, 35 öğretmen adayının da has olmayan integrallerde öncülleri dikkate almadan değişken değiştirme yöntemini kullandıkları görülmüştür.

Anahtar Kelimeler: belirli integral, has olmayan integral, değişken değiştirme yöntemi, değişken değiştirme öncülleri, öğretmen adayları

INVESTIGATION OF WHETHER MATHEMATICS TEACHER CANDIDATES CONSIDERİNG PREMISESS WHEN USING CHANGE OF VARIABLE METHOD IN DEFINITE INTEGRAL

The aim of this study is to determine whether elementary mathematics teacher candidates consider premises on use of change of variable method when they use this method in the definite integral. In this context, 52 teacher candidates, who are studying in the second year of elementary mathematics teacher education program, asked to solve two definite integral which can be solved with change of variable method. One of these integrals is a definite integral and other one is an improper integral. Enough time was given to teacher candidates to solve the questions. Solutions of teacher candidates were analyzed by two researchers and it has been defined whether teacher candidates, who used this method, consider premises of this method. When the answers of teacher candidates were examined, it was found that 23 teacher candidates did not consider the premises when using change of variable method in definite integral and 35 teacher candidates did not consider the premises when using change of variable method in improper integral.

Keywords: definite integral, improper integral, change of variable method, premises on change of variable method, teacher candidates

REFLECTIONS FROM SPEACIAL TEACHING METHODS COURSE II

Mihriban HACISALİHOĞLU KARADENİZ
Giresun University
mihrideniz61@gmail.com

ABSTRACT

The aim of this study is to reveal the gaining and problems of prospective mathematics teachers during the "Special Teaching Methods II" course. To realize this, it was aimed to present samples of implementations created during the course process and evaluate prospective teachers' views regarding this process. Special case study method was used in the study. Participants of the study were 34 prospective mathematics teachers studying at Primary School Mathematics Education Department. Data collection tools were a form composed of open-ended questions and semi-structured interviews. Open-ended form was administered to all prospective teachers, but interviews were carried out with 10 voluntary prospective teachers. Descriptive analysis and content analysis of the quantitative data were done. In the Special Teaching Methods II course opened in the spring term of 2015-2016 academic year multiple intelligence- discovery-group work-problem solving- history of mathematics-computer-assisted teaching activities were developed and implemented. In this study implementation samples regarding structuring of this course and themes came out of students' views and deductions regarding teaching of this course were included. Prospective teachers were asked to prepare reports in order to evaluate the activities and implementations done within the content of this study. It was concluded that these activities helped students love mathematics more, understand the importance of helping each other and cooperation, understand mathematics better and have a more enjoyable lesson, and develop them cognitively and socially-emotionally. It was also found that through these activities prospective teachers improved their beliefs and increased their confidence regarding teaching mathematics.

Keywords: Mathematics activities (multiple intelligence-discovery-group work-problem solving-history of mathematics-teaching rules-computer-assisted learning teaching activities), prospective mathematics teacher.

THE INVESTİGATİON OF PROSPECTİVE TEACHERS' METACOGNİTİVE LEARNİNG STRATEGİES AND TEACHER EFFİCACY PERCEPTİONS

Prof.Dr. Mehmet GÜROL[*] Arş.Gör. Azmi TÜRKAN[*] Arş.Gör.İpek SOM[*]

Metacognitive learning strategies and self-efficacy are seen as important and related factors for learners to review their learning plans when they encounter a problem and to increase the independent learning. The main purpose of this research is to investigate whether the usage of metacognitive learning strategies and efficacy perceptions of prospective teachers differantiate in terms of various variables and if there is a meaningful relationship between metacognitive learning strategies and teacher efficacy perceptions of prospective teachers. This research has a descriptive survey design that is a detailed description of a particular case. Survey design is conducted in an universe composed of many elements for reaching an overall judgement about the universe working with the whole universe or a sample (Karasar, 2011, s.79). Data were collected from 117 prospective teachers studying in the faculty of education and taking pedagogical formation in the spring term of 2014-2015 academic year in Istanbul. In order to determine the usage of metacognitive learning strategies, the *Metacognitive Learning Strategies Scale* developed by Namlu (2004) was used. The scale consists of 21 items and four subscales and the analysis of the internal consistency of it yielded .84 alpha for the whole scale. In order to determine the efficacy perceptions of prospective teachers the *Teacher Efficacy Scale* adapted by Diken (2004) was used. The average of the scores obtained from the metacognitive learning strategies scale by prospective teachers is found 55.7. Metacognitive learning strategies do not differ depending on the gender and age. The average of the scores prospective teachers obtained from the teacher efficacy scale was found 50.9. Teacher efficacy perception only differentiate in the individual teacher qualifications dimension depending on the gender. It varies according to age, but it has no meaningful value in practice. It has been found that there is a low-level, positive and meaningful relationship between the usage of metacognitive learning strategies and self efficacy perceptions.

*Yildiz Technical University Faculty Of Education

TÜRKİYE'DE EĞİTİMİN SOSYAL VE TARİHİ TEMELLERİ BİLİM DALINDA HAZIRLANAN LİSANSÜSTÜ TEZLERİN İNCELENMESİ

A. Selcen ARSLANGİLAY
Gazi Üniversitesi
TÜRKİYE
aslihanselcen@yahoo.com

ÖZET

Bu çalışmanın amacı Türkiye'de eğitim alanında yüksek lisans çalışmalarının başladığı 1969 yılından itibaren 2016 yılının başına kadar Eğitimin Sosyal ve Tarihi Temelleri Bilim Dalında hazırlanmış yüksek lisans tezlerinin incelenmesi ve bu alanda yapılan çalışmaların eğilimlerinin belirlenmesidir. Bu temel amaç doğrultusunda YÖK ulusal tez veri tabanında araştırma yapılarak erişilen Eğitimin Sosyal ve Tarihi Temelleri alanında hazırlanmış ve kullanıma açık olan 60 adet tam metinli tez incelenmiştir. Çalışma, erişilen tezlerin doküman analizine yönelik nitel bir çalışmadır. Tezlerin analizinde doküman analizi yapılarak frekans ve yüzdelikler ile analiz yapılmıştır. Tezler, yayınlandıkları tarih, hazırlandıkları üniversite, konu alanları, kullanılan yöntem ve veri toplama araçları, evren ve örneklem seçimleri ile veri analiz teknikleri ve danışmanlarının unvanları açısından incelenmiştir. Yapılan tezlerin çok büyük çoğunluğunun yüksek lisans düzeyinde olduğu, yazarların özellikle eğitim tarihini birincil kaynaklarla inceleyebilecekleri Osmanlıca ve güncel yayınları takip edebilecekleri İngilizce kaynakları yeterli derecede kullanmadıkları görülmüştür. Tez danışmanlarının büyük bir çoğunluğunun Prof. Dr. olması alana verilen önemi vurgularken, bilim dalında önemli bir yeri olan felsefe kavramına rağmen eğitim felsefesini konu alan sadece bir tez bulunmuş olması dikkat çekmektedir. Tezlerin yarıya yakını veri toplama aracı olarak doküman analizinin kullanıldığı nitel yöntemle hazırlanmış tezlerdir. Araştırma sürecinde karşılaşılan en önemli sorun bilim dalında yapılmış tezleri belirlerken YÖK tez tarama merkezinde tezlere ancak birçok farklı sorgu ile tarama yapıp ulaşılması olmuştur. Bu açıdan enstitülerin öğrencilerin tez bilgilerini sisteme yüklerken doğru anahtar kelimelerle girmelerini kontrol etmeleri önerilebilir. Alanda daha çok doktora tezi hazırlanması, kullanılan araştırma yöntemlerinin sadece doküman analizi ile sınırlı kalmaması ve çeşitlendirilmesi ve kaynakçaların daha çok yabancı kaynak içermesi ileride hazırlanacak tezler için bir öneri olarak sunulabilir.

ANAHTAR KELİMELER: Eğitimin sosyal ve tarihi temelleri, yüksek lisans tezleri, doküman analizi

EXAMINING THE ACADEMIC INCENTIVE OUTCOMES OF FACULTIES OF EDUCATION

Cemalettin YILDIZ
Giresun University, Turkey
cemalyildiz61@gmail.com

Abstract

A decision has been made to render additional payment to academicians with academic incentive allowance, which went into effect in November, 2015. This application is formulized as evaluating the scientific publications produced by academicians on the basis of a scoring system and providing an incentive allowance to academicians that get the passing grade of 30. The amount of payment to be rendered is established according to the annual incentive score that is calculated for every year depending on the performance of the previous year. In this study, it is aimed to analyze the academic incentive outcomes of faculties of education. Study group of this study, where document analysis method is used, consists of 58 faculties of education. We have reached the ultimate academic incentive outcomes of 58 faculties of education among 93 in Turkey via internet and analyzed the acquired data via content analysis method. Faculties of education are separated into three groups based on the establishment years of universities. Universities in the first group comprise 12 universities that had been established since the proclamation of the Republic until the establishment of the Board of Higher Education (BHE); universities in the second group comprise 19 universities that had been established since the establishment of BHE until 2006, and universities in the third group comprise 27 universities that had been established after 2006. The data have been analyzed according to the variables of department, title, academic incentive score, and university groups of faculties of education. According to the study results; 567 people in the first group universities, 740 in the second group universities, and 425 in the third group universities receive academic incentive allowance. Besides, universities in the first, second, and the third group mainly have academic incentive scores of 30-47,5 and the number of assistant professors receiving academic incentive is higher than the number of people with other titles. In addition to this, the highest number of people receiving academic incentive is observed in the departments of mathematics and natural sciences education and science education. In order to enhance the academic incentive outcomes of faculties of education; it is recommended to increase the incentive amount, give a plaquet to academicians receiving incentive, and host a dinner in honour of these people.

Keywords: Faculty of education, academic incentive, academic incentive allowance, academician.

İLKÖĞRETİM MATEMATİK ÖĞRETMENİ ADAYLARININ KESİRLERLE ÇARPMA İŞLEMİNE YÖNELİK OLUŞTURDUKLARI PROBLEMLER

Aytuğ ÖZALTUN ÇELİK, Nur Banu DURAN

Kesirler ilkokul ve ortaokul öğrencilerinin matematikte öğrendiği ilk soyut kavramlardan birisi (Pesen, 2007) olup cebirsel düşünme, olasılık, oran ve orantı, ölçme gibi birçok konuyla ilişkilidir (Van de Walle, Karp & Bay-Williams, 2013). Bununla birlikte, kesirler öğrenciler için anlaşılması en zor kavramlardan biri olarak ifade edilmektedir (Charalambous & Pantazi, 2005; Ma, 1999; Tirosh, 2000). Alacacı (2012) bütünü eş parçalara bölme, kesirleri karşılaştırma, bileşik kesirlerde birimi belirleme, kesirlerde miktarı bütünle ilişkilendirme, çarpma ve bölme işlemlerinin sonuca etkisini belirleme gibi durumlarda öğrencilerin zorluklarının ve yanılgılarının olabileceğini belirtmektedir. Birçok öğrenci kesirlerle yapılan çarpma işleminde sonucun çarpılandan daha küçük çıkabileceğini anlayamamaktadır (Haser & Ubuz, 2000; Crouse & Sloyer, 1987). Öğrencilerin çarpma işlemini doğal sayılar kümesinde gerçekleştirdiklerinde sonucu çarpılandan her zaman büyük bulmaları bu fikri kesirlerle yaptıkları çarpma işlemlerine genellemelerine yol açmaktadır. Bu noktada öğretmenlerin öğretme yaklaşımları ve öğrencilerin öğrenmeleri için kullandıkları problemler, etkinlikler ve modeller oldukça belirleyici olmaktadır. Kinach (2002) öğrencilerin matematiksel olarak düşünmelerini temsil etme becerisi, eleştirel ve bağlamsal düşünme olarak ifade ettiği problem oluşturmanın öğrencilerin öğrenmelerini değerlendirme için bir araç olarak kullanabileceğini belirtmektedir. Bu bağlamda, öğretmen adaylarının kesirlerle çarpma işlemini gerektirecek problemler oluşturmalarını istemek hizmet öncesi eğitimlerinde soyut olarak düşünülen, çoğu öğrencide yanılgıya sebep olan ve işlemsel anlamanın ötesine geçmeyen bu kavrama ilişkin bilgilerini ve fikirlerini belirleyerek onlara daha anlamlı mesleki gelişim fırsatları sunulabilir. Bu doğrultuda çalışmanın amacı ikinci sınıf ilköğretim matematik öğretmeni adaylarının kesirlerle çarpma işlemi yapmayı gerektirecek şekilde oluşturdukları problemleri incelemektir. Durum desenine dayalı olarak gerçekleştirilen bu çalışmanın katılımcılarını ikinci sınıfta öğrenim görmekte olan 20 ilköğretim matematik öğretmeni adayı oluşturmaktadır. Çalışmanın verileri öğretmen adaylarının $\frac{"4}{3} x \frac{1}{2}$'ye ilişkin bir gerçek yaşam problemi kurunuz" sorusuna verdikleri yazılı yanıtlardır. İçerik analizine tabi tutularak gerçekleştirilen veri analizi sonucunda sekiz öğretmen adayının problem oluşturamadıkları görülmüştür. Problem oluşturan öğretmen adaylarından dördü $\frac{4}{3}$ kesrinin kavramsal anlamını problemlerine yansıtırken hiç biri çarpma fikrini düşünmemişlerdir. Bu sonuçlar doğrultusunda öğretmen adaylarının kesirlere ve kesirlerle yapılan işlemlere ilişkin bilgilerinde ve problem oluşturma becerilerinde sıkıntıları olduğu söylenebilir. Bu bağlamda öğretmen adaylarına verilecek eğitimler kapsamında üst düzey bir beceri olan problem oluşturma etkinliklerine ve kavramlar üzerine yapılacak sınıf tartışmalarına yer verilmesi önerilmektedir.

Anahtar Kelimeler: İlköğretim matematik öğretmeni adayı, kesir, kesirle çarpma işlemi, problem oluşturma.

