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CONTENTS
İçindekiler

REVIEWERS of the 39th ISSUE
39. Sayı Hakemleri

Adnan Kan
Ahmet Aypay
Ali E. Şahin
Arif Altun
Arif Sarıçoban
Ayşe Balcı
Ayşegül Amanda
Berrin Burgaz
Çiğdem Sağın Şimşek
Dilek Erbaş
Erdinç Duru
Fatoş Silman
Gaye Teksöz Tuncer
Gülşah Başol
Gülşen Ünver
Hasan Şimşek
İbrahim H. Diken
İbrahim Yıldırım
İsmail H. Erten
İsmail Özgür Zembat
Kürşat Çağıltay
Mehmet Çağlar
Mehmet Hakan Gündoğdu
Mehmet Şişman
Melike Sayıl
Müfit Kömleksiz
Nalan Büyükkantarcıoğlu
Ömer Kutlu
Özgür Erdur-Baker
Petek Aşkar
Rüyam Küçüksüleymanoğlu
S. Sadi Seferoğlu
Sadegül Akbaba Altun
Saime Sayın
Selahattin Turan
Sinan Erten
Soner Yıldırım
Tevfik Paşa Cephe
Tolga Arıcak
Vance Stevens
Veysel Sönmez
Zeynep Hatipoglu Sümer
Zühal Okan
Zülbiye Toluk

Attitudes, Self-efficacy and Science Processing Skills of Teaching Certificate Master's Program (OFMAE) Students

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Abstract

Problem Statement: The present research investigated attitudes toward science teaching, science teaching self-efficacy, and science processing skills of 77 students attending a teaching certificate master's program on Secondary Education Science and Mathematics Fields Teaching (Chemistry, Biology, Physics, Mathematic Teaching) at Mersin University Graduate School of Natural Sciences.

Purpose of Study: The purpose of the study is to explain the relationship between attitudes toward science teaching, self-efficacy and science processing skills of teaching certificate master's program (OFMAE) students.

Methods: A survey method was the main research approach. Seventy-seven students attending a teaching certificate master's program on Secondary Education Science and Mathematics Fields Teaching were administered the Inventory for Attitude toward Science Course, Science Education Self Efficacy Inventory for Form Teacher Candidates and Science Processing Skills Questionnaire.

Findings and Results: At the end of the research, no gender difference was observed in the scores of the students gathered from the measures related with those variables. The results of the ANOVA applied to the data showed the differences between the attitude scores of the students in relation to the departments. Significant differences were observed between chemistry and physics, mathematics, and biology and mathematics

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students' attitude scores. The results of the ANOVA applied to the data related with self-efficacy according to the department showed the differences between chemistry and biology, mathematics and physics and mathematics students' self-efficacy scores. The results of the ANOVA applied to the data related with the science processing skills according to the department showed the differences between chemistry and physics, and biology and physics students' scores.

Conclusions and Recommendations: The results of the study showed that in the attitude variable, a) there was no gender difference in the attitude toward science teaching and b) chemistry students have the most positive attitudes toward science teaching and there was a significant difference between chemistry and physics students' attitudes toward science teaching. In the self-efficacy variable, a) there was no gender difference in self-efficacy and b) chemistry students have the greatest self-efficacy scores and there was a significant difference between chemistry and mathematics and biology students' and physics and mathematics students' self-efficacy scores. In the science processing skill variable, a) a gender difference was observed and females performed better than males in science the processing skills inventory and b) biology students had the greatest science processing skills scores and there was a significant difference between biology and physics, and chemistry and physics students' science processing skills inventory scores.

Keywords: Science teaching, attitude, self-efficacy, science processing skills

In contemporary educational processes, instruction is constructed as a function of the affective, cognitive and psychomotor domains. The affective domain has proven effects in school learning (Bloom, 1979). It may be proposed that academic achievement is directly or indirectly related with many factors and that the affective domain may be evaluated as one of them. Though in this context, the affective factors such as attitude and self-efficacy may be discussed so as to affect many factors such as the teachers' motivation to teach and interest in courses and, consequently, these factors affect the individuals' performance and teaching competence.

Attitude is defined as the degree of emotions toward an object or person (Erkuş, 2003). On the other hand, attitude may also be defined as the positive or negative tendencies toward a certain object, circumstance, institution, concept or persons (Tezbaşaran, 1997). Because of the reasons mentioned above, attitude is one of the main determinants of human behavior. Individuals record ideas about themselves as a result of their activities; they evaluate the efficiency of their competence. These evaluations determine the ideas of the individuals about their competency and ability to succeed on a task. Bandura (1982) called this personal evaluation self-efficacy. Perceived self-efficacy plays an important role in regulating the behavior of individuals. Self-efficacy effects the selection of activities, the effort a person spends on an activity, the duration of persistence in a difficult situation, anxiety and confidence level of the person. Science processing skill, furthermore, is related with

the person's competence in a certain domain as a cognitive variable. Geban (1990) reported the basic dimensions of science processing skill as identifying variables, identifying and stating a hypothesis, operationally defining and designing, investigations and graphing and interpreting data.

Many studies have been conducted to examine the effects of the variables mentioned above (attitude, self-efficacy, and science processing skill) on instruction. Oliver and Simpson (1988) investigated the effect of factors such as attitude toward science course, academic self-concept and motivation toward academic achievement and found that the attitude scores did not predict academic achievement, but motivation did. On the contrary, Levin, Naama and Zippora (1991) found that the attitude scores predicted academic achievement and also that male attitude scores strongly predicted academic achievement. House (1993), reported that motivation has a significant effect on achievement. House and Prison (1998) also found a significant relationship between attitude scores and academic achievement. Baykul (1990) also observed significant relationships between attitude scores in mathematic and science courses and Student Selection Examination (ÖSS) mathematics and science subtests scores. Çakır and Şahin (2000) reported that the most important variable representing academic achievement was science course ration card grades and the most important variable explaining attitude toward science courses was academic self-concept at the basic education level in 6th grade. It may be concluded from these findings that attitude does indirectly effect academic achievement by moderator variables. Additionally, there has been a great deal of research investigating the relationship between academic achievement and other variables (Öner 1990; Albayrak-Kaymak 1987; Yıldırım 2000). In light of the above discussion, it may be argued that academic achievement is related with the affective characteristics and affected by these characteristics.

Method

Study Group

The present study investigated 77 candidate teachers attending a teaching certificate master's program on Secondary Education Science and Mathematics Fields Teaching (Chemistry, Biology, Physics, Mathematics Teaching) at the Mersin University Graduate School of Natural Sciences. Nineteen candidate teachers had graduated from the Faculty of Science and Literature, Department of Chemistry, 19 had graduated from the Faculty of Science and Literature, Department of Biology, 19 had graduated from the Faculty of Science and Literature, Physics and 20 teachers had graduated from Mathematics. They have each attended a 1,5 year teaching certificate master's program.

Instrumentation

The present research used the Inventory for Attitude toward Chemistry Course developed by Kan and Akbaş (2005) after it was converted into the Inventory for Attitude toward Science Course. To measure the self-efficacy level of candidate

teachers toward science education, the Science Education Self-efficacy Inventory for Form Teacher Candidates developed by Riggs and Enochs (1990) and adapted to Turkish culture by Bıkmaz (2002) was used. For measuring science processing skills, the Science Processing Skill Questionnaire originally developed by Okey, Wise and Burns (1982) and adapted to Turkish culture by Geban, Aşkar and Özkan (1991) was used.

Inventory for Attitude toward Science Teaching. The original form of the inventory was developed by Kan and Akbaş (2005) to measure high school students' attitudes toward chemistry courses. It was a 22-item, 5-point Likert type scale ranging from "certainly agree" to "certainly disagree". Chemistry course statements in the original items of the inventory were changed as the science course and reliability and validity studies were conducted for a new form of inventory. In the validity study, as in the original form, it was observed that all 22 items were operating and loads for three factors had Eigen values greater than one. The first factor (Eigen value = 9.76; variance explained = 44.38%) consisted of 10 items, the second factor (Eigen value = 2.10; variance explained = 9.54%) consisted of seven items, and the third factor (Eigen value = 1.19; variance explained = 5.42%) consisted of five items. All three factors in total explained 59.35% of the variance related with the attitude toward science courses. Factor loadings of the items consisting of the inventory ranged from .45 to .80. Item-test correlations were calculated between .41 and .73. To examine whether the inventory displayed a similar construct in different groups, a cross validation study was conducted and observed the inventory as measuring similar constructs in a different sample.

In the reliability studies, the total test Cronbach internal consistency coefficient was .91 and the Spearman-Brown split half reliability coefficient was .89. The Cronbach internal consistency coefficient for the first factor was .91 and the Spearman-Brown split half reliability coefficient was .89; the Cronbach internal consistency coefficient for the second factor was .88 and the Spearman-Brown split half reliability coefficient was .86; the Cronbach internal consistency coefficient for the third factor was calculated as .79 and the Spearman-Brown split half reliability coefficient was .78.

Science Teaching Self-efficacy Inventory. The inventory is a 21-item, 5-point Likert-type self-report measure developed by Riggs and Enochs (1990) and adapted to Turkish culture by Bıkmaz (2002) with two subscales, "self-efficacy belief" and "outcome expectation". The calculated reliability coefficient was .89 for the self-efficacy belief subscale, .69 for the outcome expectation subscale and .85 for the inventory total (Bıkmaz, 2002). The reliability coefficients observed in the data of the present study were .78, .69 and .75, respectively. The greater the score gathered from the inventory, the higher the science teaching self-efficacy belief and outcome expectations of the students.

Science Processing Skill Questionnaire. The questionnaire was originally developed by Okey, Wise and Burns (1982) and adapted to Turkish by Geban, Aşkar and Özkan (1991). It consisted of 36 multiple-choice questions with four options each. The questionnaire includes five subtests designed to measure different aspects of science

processing skills. These are identifying variables, identifying and stating a hypothesis, operationally defining and designing investigations, and graphing and interpreting data. The reliability coefficient (KR-21) of the original test was calculated as .82 and the adapted form was .81.

Data Analyses

The descriptive statistics related with the attitude, self-efficacy and science processing skill scores of the students attending the teaching certificate master's program were computed. Additionally, to investigate the differences according to department and gender, an ANOVA and a t-test were applied to the data related with the attitude toward science education, self-efficacy and science processing skill scores of the students.

Results and Discussion

The descriptive statistics related with the attitude, self-efficacy and science processing skill scores of the students are shown in the Table 1.

Table 1

Descriptive Statistics of Attitude, Self-Efficacy and Science Processing Skill Scores according to Department

		Attitude		Self-efficacy		Science Processing Skill	
Department	N	$\bar{x}$	ss	$\bar{x}$	sd	$\bar{x}$	sd
Biology	19	4,23	,36	3,71	,26	,715	,094
Chemistry	19	4,52	,37	3,93	,32	,706	,086
Physics	19	4,02	,69	3,91	,34	,624	,132
Mathematics	20	3,75	,73	3,55	,35	,664	,116
Total	77	4,13	,62	3,77	,35	,677	,112

Table 1 shows that biology students have the greatest mean attitude score at 4,23 and mathematics students have the lowest mean attitude score at 3,75. Additionally, chemistry students have the greatest self-efficacy mean score at 3,93 and mathematics students have the lowest mean self-efficacy score at 3,55. Besides these, biology students have the greatest science processing skills with a mean score of 0,715 and physics students have the lowest science processing skills score with a mean of 0,624.

To investigate whether the attitude scores of the students differ according to gender, a t-test for an independent sample was applied to the data and the results are shown in Table 2.

Table 2

t-Test Results of Attitude Scores according to Gender

Gender	N	$\bar{x}$	sd	df	t	p
Female	44	4,19	,55	75	1,022	0,310
Male	33	4,04	,71			

It can be seen in Table 2 that the mean attitude score of females is 4,19 and 4,04 for males. No statistically significant difference was observed between the attitude scores of females and males. In short, it may be said that students' attitudes toward chemistry courses did not differ significantly by to gender ($t_{(75)}$=0,31, p>,01). It may be argued that teacher candidates from both genders have difficulty in gaining employment in Turkey. Because of this fact, they may have negative attitudes toward their future occupational activity: science teaching.

To investigate whether students' attitude scores differ according to department, a one-way ANOVA was applied to the data and the result are given in Table 3.

Table 3

ANOVA Results of Attitude Scores According to Department

Source of Variation	Sum of squares	df	Mean square	F	p	Significant difference
Between Groups	6,143	3	2,048	6,353	0,001	Chemistry-Physics
Within groups	23,529	73	,322			Chemistry-Mathematics
Total	29,672	76				Biology-Mathematics

As shown in Table 3, a significant difference was observed between the attitudes toward science teaching inventory scores of the students according to department ($F_{(3;73)}$=6,353; P<,01). To investigate the source of this difference, the Tukey HSD test was administered to the data. According to the result of this analysis, chemistry students are more positive toward science teaching ($\bar{x}$ = 4,52) than physics ($\bar{x}$ = 4,02) and mathematics students ($\bar{x}$ = 3,75). Also, biology students are more positive toward science teaching ($\bar{x}$ = 4,23) than mathematics students ($\bar{x}$ = 3,75). According to the results, it may be said that chemistry students have the most positive attitude toward science teaching. In Turkey, one of the most significant problems in university education is unemployment. Candidate chemistry teachers may be more positive about their present education and future professions because of the chemistry teachers' quota supplied by the Ministry of National Education.

To investigate whether the students' self-efficacy scores differ according to gender, a t-test for an independent sample was applied to the data and the results are shown in Table 4.

Table 4

t-Test Results of Self-Efficacy Scores According to Gender

Gender	N	$\bar{x}$	sd	df	t	p
Female	44	3,81	,31	75	1,004	0,319
Male	33	3,73	,41			

As seen in table 4, females have a mean self-efficacy score of 3,81 and males have a mean self-efficacy score of 3,73. The t-test results show no significant difference between the self-efficacy scores of females and males ($t_{(75)}$=1,004; p>,01). According to self-efficacy theory, self-efficacy perceptions refer to "beliefs in one's capabilities to organize and execute the courses of action required producing given attainments" (Bandura, 1997, p. 3). It may be thought that students from both genders attended the same educational process, leading them to acquire similar perceptions related with their capacity to execute the course of action in science teaching.

To investigate whether students' self-efficacy scores differ by department, a one-way ANOVA was applied to the data and the results are given in Table 5.

Table 5

ANOVA Results of Self-Efficacy Scores According to Department

Source of Variation	Sum of squares	df	Mean square	F	p	Significant difference
Between groups	1,924	3	,641	6,145	0,001	Chemistry-Mathematics
Within groups	7,618	73	,104			Chemistry-Biology
Total	9,541	76				Physics-Mathematics

As shown in Table 5, a significant difference between the self-efficacy scores of the students according to department was observed ($F_{(3;73)}$=6,145; P<,01). To investigate the source of this difference, the Tukey HSD test was administered to the data. According to the result of this analysis, chemistry students have a greater mean score in the self-efficacy inventory ($\bar{x}$ = 3,93) than mathematic students ($\bar{x}$ = 3,55) and biology students ($\bar{x}$ = 3,71). Also, physics students have a greater mean score in the self-efficacy inventory ($\bar{x}$ = 4,23) than mathematics students ($\bar{x}$ = 3,55). According to results, it may be said that chemistry students have greatest self-efficacy score. Özgüngör (2010) found a relationship between self efficacy beliefs and academic variables such as teaching quality, overall satisfaction and course value. Similarly,

Akın (2010) observed a relationship between achievement goals and academic locus of control: the internal academic locus of control correlated negatively with performance-approach/avoidance goals. The differences in the academic needs of the departments may effect students' self-efficacy level. Also as mentioned before, in Turkey, one of the most significant problems in university education is unemployment. This finding may be the result of diversified employment opportunities in the departments.

To investigate whether the science processing skill scores of the students differ according to gender, a t-test for an independent sample was applied to the data and the results are shown in Table 6.

Table 6

t-Test Results of Science Processing Skill Scores according to Gender

Gender	N	$\overline{x}$	sd	df	t	p
Female	44	.699	.109	75	2.057	0.043
Male	33	.647	.111			

As seen in Table 6, females have a mean science processing skill score of 0,699 and males have a mean science processing skill score of 0,647. The t-test results show a significant difference between the science processing skill scores of females and males ($t_{(75)}$=2.057; p<.05); female students have greater science processing skill scores than male students. In the science processing skills literature, no gender difference has been reported. However, Gündoğdu (2001) reported a gender difference in the prediction of scientific thinking skills. Similarly, Bell-Scriber (2008) underlined the effect of gender on the educational process and argued that for educators to facilitate student learning and the achievement of desired cognitive, affective, and psychomotor outcomes, they need to be competent in recognizing the influence of gender on teaching and learning. Also, Genç (2008) reported a gender difference in the candidate teachers' critical thinking tendencies. The different genders seem to develop different styles of thinking. It may be proposed that the gender is a critical variable in the academic variables.

To investigate whether students' science processing skill scores differ according to department, a one-way ANOVA was applied to the data and the results are given in Table 7.

Table 7

ANOVA Results of Science Processing Skill Scores according to Department

Source of Variation	Sum of squares	df	Mean square	F	p	Significant difference
Between groups	.100	3	.033	2.815	0.045	Chemistry-Physics
Within groups	.862	73	.012			Biology-Physics
Total	.961	76				

As shown in Table 7, a significant difference between the science processing skill scores of the students according to department was observed ($F_{(3;73)}$=2.815; P<.01). To investigate the source of this difference, the Turkey HSD test was administered to the data. According to the results of this analysis, chemistry students ($\bar{x}$ =0,706) and biology students ($\bar{x}$ = 0.715) had greater mean science processing skill scores than physics students ($\bar{x}$ = 0,624) and mathematic students ($\bar{x}$ = 0.664). According to these results, it may be said that biology students have the greatest science processing skill scores. This finding may result from the content of the education provided to the students in the different departments.

Implications and Recommendations

In the present research, the variables (attitudes toward science teaching, science teaching self-efficacy, and science processing skills) that affect the academic achievement of students attending the teaching certificate master's program on Secondary Education Science and Mathematics Fields Teaching (Chemistry, Biology, Physics, Mathematics Teaching) at the Mersin University Graduate School of Natural Sciences were investigated. For the present aim, the inventories mentioned above were administered to 77 students attending the teaching certificate master's program and data were gathered.

In conclusion, the results of the study showed that in the attitude variable, a) there was no gender difference in the attitude toward science teaching, and b) chemistry students have the most positive attitude toward science teaching and there was a significant difference between chemistry and physics students' attitudes toward science teaching. In the self-efficacy variable, a) there was no gender difference in self-efficacy, and b) chemistry students have the greatest self-efficacy and there was a significant difference between chemistry and mathematics and biology students' and physics and mathematics students' self-efficacy scores. In the science processing skill variable, a) a gender difference was observed and females performed better than males in the science processing skills inventory, and b) biology students have the greatest science processing skill scores and there were significant differences between biology and physics, and chemistry and physics.

It may be recommended that educational curriculums consider the gender variable and, in developing educational programs, contents must be revised to consider gender difference.

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OFMAE Tezsiz Yüksek Lisans Öğrencilerinin Fen Öğretimine İlişkin Tutum, Öz-yeterlik ve Bilimsel İşlem Becerileri

(Özet)

Problem Durumu: Çağdaş eğitim sürecinde öğretim, duyuşsal, bilişsel ve psikomotor alanların işlevi üzerine yapılandırılmaktadır. Bireyin duyuşsal özelliklerinin okul öğrenmeleri üzerinde, araştırmalarla kanıtlanmış etkileri vardır. Akademik başarının dolaylı ve doğrudan birçok faktörle ilişkili olduğu ileri sürülmektedir ve duyuşsal özellikler de bu faktörlerden birisi olarak ele alınabilir. Bu bağlamda düşünüldüğünde, tutum ve öz yeterlik gibi duyuşsal faktörlerin başta öğretmenlerin derse karşı öğretme istek ve ilgilerini olmak üzere birçok faktörü etkileyeceği ve bunun da bireyin performansına dolayısıyla öğretmenlik başarısına etki edebileceği düşünülebilir.

Araştırmanın Yöntemi: Araştırmada betimsel yöntem kullanılmıştır. Araştırma, Mersin Üniversitesi Fen Bilimleri Enstitüsü Orta Öğretim Fen

ve Matematik Alanları Eğitimi (OFMAE) Anabilim Dalı tezsiz yüksek lisans programına kayıtlı 77 öğrenci (19 Kimya, 19 Biyoloji, 19 Fizik ve 20 Matematik bölümü mezunu) ile yapılmıştır. Öğretmen adaylarının fen bilgisine karşı tutumlarını ölçmek amacıyla Kan ve Akbaş tarafından geliştirilen "Kimya Dersine Yönelik Tutum Ölçeği"nin "Fen Bilgisi Dersine Yönelik Tutum Ölçeği (FBDYTÖ)" biçimine dönüştürülmüş formu kullanılmıştır. Öğretmen adaylarının fen bilgisi öğretimine ilişkin öz-yeterlik inançlarını belirleyebilmek için ise Riggs ve Enochs tarafından geliştirilen ve Bıkmaz tarafından Türkçeye uyarlanan "Sınıf Öğretmeni Adaylarının Fen Öğretiminde Öz-yeterlik İnancı Ölçeği (SAFÖÖİÖ)" kullanılmıştır. Bilimsel işlem becerileri için, orijinali Okey, Wise ve Burns tarafından geliştirilen ve Özkan, Aşkar ve Geban tarafından Türkçeye uyarlanan "Bilimsel İşlem Beceri Testi" (BİBT) uygulanmıştır. Bilimsel işlem beceri testi çoktan seçmeli dört seçenekli 36 soru içermektedir. Testi meydana getiren beş alt bölüm bilimsel işlem becerilerinin farklı boyutlarını ölçmeyi amaçlamaktadır.

Araştırmanın Bulguları: Tutum değişkenine ilişkin, (a) kız öğrencilerle erkek öğrenciler arasında fen öğretimine ilişkin tutum açısından fark olmadığı, (b) fen öğretimine ilişkin en olumlu tutuma sahip grubun kimya öğrencileri olduğu ve kimya öğrencileri ile fizik öğrencileri arasında fen öğretimine ilişkin tutum açısından anlamlı farklılık bulunduğu gözlenmiştir. Öz yeterlik değişkenine ilişkin, (a) kız öğrencilerle erkek öğrenciler arasında anlamlı bir fark olmadığı, (b) fen öğretimine ilişkin en yüksek öz yeterlik düzeyine sahip grubun kimya öğrencileri olduğu ve kimya ile matematik ve biyoloji öğrencileri, fizik ile matematik öğrencileri arasında anlamlı farklılık bulunduğu görülmüştür. Bilimsel işlem becerileri açısından, (a) kız öğrencilerle erkek öğrenciler arasında kız öğrenciler lehine anlamlı bir farklılık olduğu, (b) en yüksek bilimsel işlem becerisi puanı ortalamasına sahip grubun biyoloji öğrencileri olduğu ve biyoloji ile fizik öğrencileri arasında ve kimya ile fizik öğrencileri arasında anlamlı farklılık bulunduğu görülmüştür.

Araştırmanın Sonuçları ve Önerileri: Öğrencilerin tutum, öz-yeterlik ve bilimsel işlem becerisi puanlarının bölümlere göre anlamlı farklılık gösterdiği gözlenmiştir. Ayrıca, öğrencilerin tutum ve öz-yeterlik puanlarında cinsiyete göre bir fark gözlenmezken, bilimsel işlem becerisi puanlarında cinsiyet farkı gözlenmiştir. Buna göre kızların bilimsel işlem becerisi puanlarının erkeklerden daha yüksek olduğu görülmüştür. Öğrencilerin tutum ve öz-yeterlik puanlarında bölümlere göre ortaya çıkan farkın her bir bölümün farklı iş bulma koşullarından kaynaklanmış olabileceği düşünülmektedir. Bunun yanında bilimsel işlem becerileri puanlarında bölümlere göre ortaya çıkan farkın bölümlerin vermiş olduğu eğitimin farklı niteliğinden kaynaklanmış olabileceği değerlendirilmiştir. Cinsiyete göre bilimsel işlem becerileri puanlarında ortaya çıkan farkın daha önce yapılan çalışmalarla tutarlılık gösterdiği görülmüştür ve eğitim programlarının hazırlanmasında cinsiyet faktörünün dikkate alınması gerektiği önerilmiştir.

Anahtar Sözcükler: Fen öğretimi, tutum, öz-yeterlik, bilimsel işlem becerisi

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The Views of Elementary Supervisors on Teachers' Competencies

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Abstract

Problem Statement: In education, teachers should have competencies in certain fields to assist students in attaining a desired level. The term "competence" means an ability to carry out a task or a responsibility. The competencies of a teacher can be classified as field knowledge, general knowledge, and pedagogic formation. The contribution of elementary supervisors, whose tasks include guiding teachers towards the improvement of their competencies, is of great importance. Today, the role of supervisors is one of guidance rather than of inspection, and the recommendations and views of supervisors are important in order to evaluate teachers and aid their development. This research attempts to discover the views of supervisors towards teachers and discusses their suggestions regarding teacher improvement.

Purpose: This research aims to present the views of elementary supervisors in evaluating the competencies of teachers and the supervisors' contributions, as a result of this evaluation, towards the professional development of teachers. The views of elementary supervisors are related to the competencies of teachers in terms of field knowledge, general knowledge, and pedagogic formation. In addition, this research aims to discover what supervisors do to help the professional development of primary school teachers.

Method: This research uses the descriptive method. The data were obtained through a form devised to obtain qualitative data with open-ended questions. This study covers 178 elementary supervisors who participated in a course named "Improving the Teaching Process" held in Mersin, Turkey in May-June 2008. The semi-structured interview form was applied

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to all of the course participants. The data were analysed with the help of the "NVivo8" programme.

Findings: At the completion of the research, it was found that the elementary supervisors mostly found the teachers to be generally competent in field knowledge, general knowledge, and pedagogic formation. However, they noted some deficiencies in practice in these three fields. The activities carried out by elementary supervisors to improve the competencies of teachers generally cover guidance, suggestions about filed literature, cooperation with associates and efforts to increase motivation.

Conclusion and Recommendations: According to the views of the elementary supervisors, it can be concluded that teachers are theoretically competent in field knowledge, general knowledge, and pedagogic formation but they are not as competent in practice. Therefore, in-service training of teachers should be taken more seriously to increase the professional knowledge and ability in the teaching profession. Teachers should concentrate on individual efforts to improve themselves, and this should be encouraged by elementary supervisors. Elementary supervisors should offer suggestions for overcoming existing problems rather than evaluating the teachers.

Keywords: Teachers, competencies of teachers, supervisors, elementary.

The basic architects of the development of a country's education system and of the qualifications of its individuals are those who apply that system, i.e. the teachers. The quality of teacher education reveals itself in teaching-learning applications and has a direct effect not only on the development of children's knowledge, but also particularly on the formation of their education and of their personalities. For this reason, it may be stated that the success of an education system depends on the competencies of those who essentially operate and apply that system, i.e. the teachers and other education staff.

Teacher competency, the subject of what teachers know and what they can do, has become the focus of studies related to teacher education and the effects of teachers on student success (Ball and Cohen, 1999; World Bank, 2005; Darling-Hammond, 2000; Grand and Gillette, 2006; Imig and Imig, 2006; Akt. TED, 2009). All the developments show that on the subject of teacher education and the development of teacher competencies, the EU countries are engaged in a joint effort and are trying to form a common understanding. The European Parliament's resolution on September 23, 2008 on "Improving the Quality of Teacher Education", established common policies for the professional development of teachers, both in training and throughout their careers. The resolution specifically stresses that the quality of teacher education can bring about a significant development in student success.

The most comprehensive study of the teaching profession in recent years in Turkey was conducted in the early 1970s. In this context, the subject of teaching was discusse, evaluated, and defined as "a specialized profession which deals with the

State's education and its teachers". The State Education Fundamental Law No. 1739 was enacted on June 4, 1973. This law declares, "Whatever their grade, it is essential that teacher candidates undertake higher education and that preparation for the teaching profession be made by means of general knowledge, specialized field training and pedagogic formation." Thus, the training of teacher candidates was established as a basic principle (Aydın. 2005, 4).

The political, economic, cultural and technological changes which have been going on for centuries, have, by bringing about new needs, diversified the basic values of social life and organisations. This continual changing and diversifying of needs also leads to a continual change in the knowledge, skill, manner and attitude which will be gained by education. With regard to educational management, it may be stated that this situation results in the necessity for teachers and administrators, who carry out the operation of education, to possess the competence to manage this new knowledge, skill, understanding, manner and attitude (Thody, 1998, 232; Akt. Gökçe, 2008). In the light of this assessment, it can be stated that it has become essential to examine teacher competence in the appropriation and application of educational change from an institutional point of view and to evaluate it in terms of change models.

In recent years, an important study directed towards teachers and carried out by the Ministry of Education as part of the quest for quality in education, is intended to determine teacher competencies. As a result of this study, in the framework of the Support for Basic Education Programme, the General Competencies of the Teaching Profession have been determined. The General Competencies of the Teaching Profession consist of 6 main fields of competence, 31 sub-competencies, and 233 performance indicators (MEB, 2009). The General Directorate of Teacher Training and Education, in the study named Determination of Teacher Competences, has also defined the concept of competence as "the ability to carry out a task or duty". At the same time, it has also envisaged that the determination of teacher competencies will make the work of teachers more appreciated and contribute to the enhancement of their status in society, thereby ensuring that a better quality of education may be acquired (Bircan, 2001; Karaçalı and Altun, 2004).

In the book, *Teacher Competences*, published by the Ministry of Education, it was stated that answers were sought to the questions "What should the quality of education be in the 21st century?" and "What quality of students and teachers do we require?" (MEB, 2008). It is expected that teachers, as providers of the contemporary education needed by individuals, should also possess a contemporary mentality. In literature, the qualities which should be possessed by a teacher, who is a crucial component of the most important factors in the teaching-learning environment, are classified in two groups, namely personal and professional qualities. A teacher's personal qualities may be further subdivided into three parts: the ability to motivate, concentration on achievement, and professionalism; professional qualities can be grouped into seven areas, namely planning of educational activities, use of teaching methods and techniques, effective communication, classroom management, efficient use of time, evaluation of learning and giving of guidance (Demirel, 2006; Erdem, 2008; Köksal, 2008).

It is a well known fact that the teacher is one of the most important elements of education. The teacher is not only a person who transfers knowledge or a model of certain skills, but is also the figure who enlarges the learning environment, facilitates the learning processes of students, interacts continuously with students, and evaluates student success (Güçlü, 1996; Odden, 2004; cited from, Alım & Bekdemir, 2006). Dedicated and competent teachers deliver what their students and parents want despite many constraints, such as limited resources, while serving a low income clientele (Sahin, 2008). However, there has been little research in Turkey dealing directly with teacher competencies. The main purpose of this study is to determine the views of elementary supervisors on elementary school teachers' competencies. For this purpose, the following questions were examined:

1. What are the views of elementary supervisors on the field knowledge competency of teachers?
2. What are the views of elementary supervisors on the general knowledge competency of teachers?
3. What are the views of elementary supervisors on the pedagogical competency of teachers?
4. What activities are carried out by elementary supervisors in order to improve the competencies of teachers?

Methods

Research Design

In this study, which aims to determine the competencies of primary school teachers according to the views of elementary supervisors, the descriptive method was used, and for the data collection, a form designed to obtain qualitative data with open ended questions was implemented, as descriptive studies are carried out in order to display the existing situation (Karasar 1991; Yıldırım & Şimşek 2005).

Participants

Table 1
Gender, Seniority Distribution of Participants

Participants		N	%
Gender	Female	18	9.84
	Male	160	90.16
Seniority (in years of age)	15-20	24	13.49
	21-25	54	30.33
	26-30	36	20.22
	31-35	34	19.10
	36-40	25	14.04
	41-45	2	1.13
	46-50	3	1.69
Total		**178**	**100**

This study covers 178 elementary supervisors who participated in the course "Improving the Teaching Process" held in Mersin, Turkey in May-June 2008. The participants consisted of 18 female and 160 male elementary supervisors. The sampling is a convenience sample as the participants were chosen on the basis of accessibility, expediency, cost, efficiency, or other reasons not directly concerned with sampling parameters. Each participant was informed about the aim of the research, and participation was voluntary. In this way, they were willing to participate in this research.

Data Collection Tools

The data used in the research were obtained from 178 elementary supervisors. The form was designed to obtain qualitative data with open ended questions. The form contained four questions structured from titles in related literature. Five experts were consulted in the formation of this semi-structured form with regard to reliability and validity criteria.

Data Analyses

The data obtained were analysed through computer supported qualitative data analyses. The qualitative data analyses that are achieved through computer programmes can provide technically important benefits (Bogdan & Biklen, 1998, p. 186). Therefore, the NVivo8 Qualitative Data Analysis Programme was used. In this way, the relation between themes and sub-themes and categories formed at the end of form analyses, or the differences before and after application between sub-themes and categories, were presented visually by creating a model (Yıldırım & Şimşek, 2005, p. 224-225). In this context, qualitative research provides sensitivity to the social context in which the research was conducted (Kuş, 2003). Thus, the subcategories were formed out of the above-mentioned four questions. The answers were labelled as "efficient", "partly efficient", and "not efficient". Answers given for each sub-category were coded under NVivo8. In-vivo is a kind of coding strategy which is described in a real approach. The coding is done from data and even the names of categories reflect the data (Kuş, 2006; Patton, 2002; Stenbacka, 2001). After completing the coding stage, the models were formed based on the categories. While forming these models, divisions like "individual" and "organisational" were used as upper-categories.

Formation of Models

The visualisation of relations between the categories developed in the construction of a model in the NVivo programme is provided. Each element in the models stands for categories constructed in the course of analysis. Not only group opinions, but also individual opinions were narrated in the models. The reason for this narration was to adopt the approach of reflecting the opinions of the majority in qualitative analysis rather than in quantitative analysis. An opposite category may be formed by one's answer. Therefore, the categories used in the models may be based on only one supervisors's answer.

The views of the participants were transformed into Word format and one page for each was assigned and filed with codes. Then, these files were uploaded onto the NVivo8 Qualitative Data Analysis Programme. Next, sub-themes and categories were formed systematically by using the programme. Finally, a model was formed to make it visual (Charmaz, 2006). The answers often repeated for each sub-group are given in the frequency table.

In qualitative studies carried out in educational sciences, one of the most important limitations is the fact that the data obtained can not be generalised. In this context, this study, based on the data obtained from 178 participants, can not be generalised for all the elementary supervisors in Turkey. Despite this limitation, the data obtained by means of the form designed to obtain qualitative data with open ended questions will give a general opinion and thus may be of use in the future.

Findings and Discussion

In this section, the results of the data analyses have been visualised in the tables and discussed according to the order of the questions and the answers given for them.

The Views of Elementary Supervisors on "Competency in Field Knowledge of Teachers"

The views of elementary supervisors on "field knowledge competency of teachers" are gathered in two main groups. Some of the supervisors found the teachers to be competent regarding their field knowledge while some of them found that they lacked competency. However, the supervisors who responded "competent" about the field knowledge of teachers stated some problems, mainly related with practice. This finding is in line with others in the field (Alfonso, Firth & Neville, 1981; Aydın, 1984; cited from, Aydın 2005). In their opinion, supervision should include efforts that can assist teachers in practising their field knowledge and carrying out the essentials of their profession.

Table 2

The Views of Elementary Supervisors on "Competency in Field Knowledge of Teachers"

Competency in field knowledge	Frequency
There are problems in practice.	30
They have in-service training after a certain period.	3
They are reluctant to adapt to changes and developments.	2
Their methods and techniques are unsuccessful.	1
They do not implement their lessons according to the new programme.	4
They are competent especially in some lessons.	3
They do not need to examine the programmes.	1
The ones who have come from faculties of education in recent years are competent.	3
They do not update their field knowledge.	5

In Table 2, the teachers are found to be satisfactory in terms of field knowledge, but they are lacking in competency in practice. They do not update their field knowledge, but they express that they present the lessons according to the new programme. Some views about the field competency of teachers are presented in the following diagram (Figure 1).

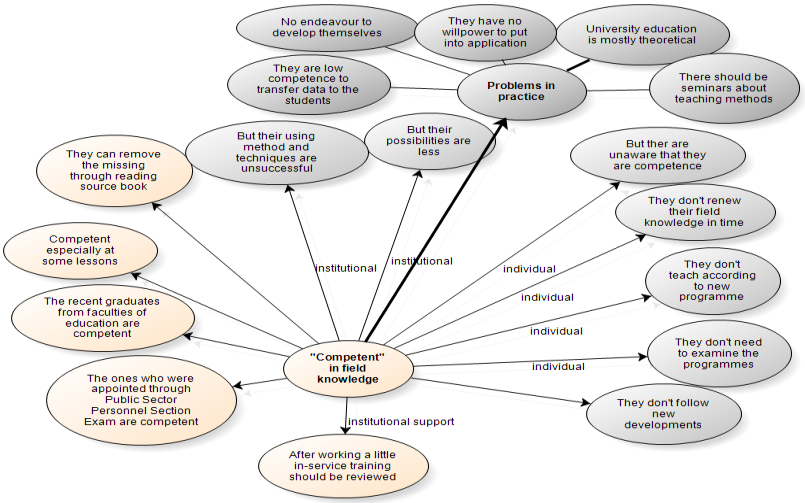

Figure 1. *The replies of elementary supervisors who found teachers to be "competent" in field knowledge*

In Figure 1, some of the elementary supervisors mentioned some individual problems originating from the teachers themselves. Others mentioned some organisational problems. In addition, the participants presented some suggestions for the problems mentioned. According to some of the supervisors, the source of the problems is the teachers themselves and they do not show enough desire or they do not attempt to improve themselves. Likewise, according to Anthony (2006), highly competent teachers and administrators are in high demand. People in schools (Elmore, 2004) primarily learn values and expectations through practice; they do not learn new practices as a consequence of learning new values and expectations. Most of the elementary supervisors who mentioned the application problem stated that, during bachelor's degree education, teachers commonly had theoretical knowledge, but they could not learn how to apply that knowledge and how to transfer it to the students. As a result, seminars about teaching techniques have been suggested as a means to fill this gap. Many of the elementary supervisors who found teachers to be "competent" in field knowledge also mentioned some other problems. When we consider these problems, similar to practice problems, they seem to be individual problems, such as teachers being reluctant to improve themselves or not sufficiently examining competencies required by the programmes. Guidance, seminars and in-

service training are among the suggestions of the elementary supervisors for solving these problems. This finding is in line with the findings of Balcı (2002), who indicates that many of the teacher training faculties are torn between practice and theory and they do not know what to do.

The Views of Elementary Supervisors on "Low Competency in Field Knowledge of Teachers"

Table 3

The Views of Elementary Supervisors on "Low Competence in Field Knowledge of Teachers"

Low Competency in Field Knowledge	Frequency
They are insufficient in some subjects.	2
The communication between education faculties and MEB (Ministry of National Education) is insufficient.	3
Education Faculties have too many tasks.	12
There is no effort to see and remedy the deficiency.	3
Field knowledge should be developed through in-service training courses.	15
Their methods and techniques are insufficien.t	2
They do not read and research.	5
They do not do prepare before the lesson.	2
They are inadequate in applying the programme.	5
The application rarely takes place.	4

The elementary supervisors stated that the education faculties have too much responsibility and too many tasks to handle the low competency in teachers' field knowledge. They stated mostly that the teachers should be trained about field knowledge through in-service training courses. They also stated that the reason for insufficient field knowledge of teachers may be a result of their reading and writing habits, facilities, and low competency in the application of programmes about their field. They presented their views as follows: teachers should be educated according to the needs of the age; they do not follow the innovations in their field, and while trying a new activity, they avoid disturbing their own comfort. However, teachers expect activities from elementary supervisors to eliminate this low competency.

The themes and categories comprising the views of elementary supervisors who found teachers' competency in field knowledge to be low are shown in Figure 2.

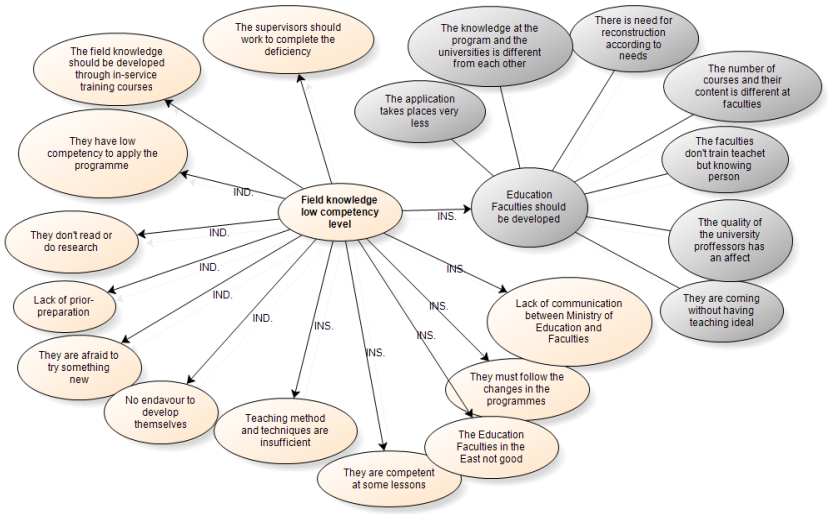

Figure 2. *The replies of elementary supervisors who found teachers' field knowledge is competent to be low.*

In Figure 2, the elementary supervisors who replied that the teachers' field knowledge competency was low mentioned individual and organisational problems as the main reason. From an individual aspect, it was stated that the teachers do not develop their own competencies sufficiently, they do not read and research and they are reluctant to improve themselves. Another interesting finding is that teachers are afraid to try something new. In our opinion, the reasons for this problem (which we include in the individual category) may result from some organisational issues.

The principal organisational problem is the inadequate programmes of the education faculties in Turkey. The elementary supervisors stated specifically that there is low competency in application during the bachelor's degree education; there are differences in lesson programmes among the faculties; and lecturers do not have sufficient competency. The education faculties are lacking in communication with the Ministry of Education, changes occurring in new programmes are not sufficiently known, and especially, the education faculties in the East cannot provide competent education (Pajares, 1992; Henson, 2001; Barnes, 2003 Cited from, Orhan, 2008).

Regarding teacher competency, field knowledge is important for all branches. The elementary supervisors expressed that they made efforts as far as they could to train the teachers in field knowledge and that they tried to improve their skills. The elementary supervisors who think that the teachers are low in competency state that they meet with the teachers one-on-one to try to eliminate what they lack and that they provide guidance. Elementary supervisors also express that the teaching profession always requires continual innovations.

The Views of Elementary Supervisors on "Competency in General Knowledge of Teachers"

Table 4

The Views of Elementary Supervisors on "Competency in General Knowledge of Teachers"

Competency in General Knowledge	Frequency
They cannot establish good communication with their environment.	1
They do not correlate it with lessons.	4
There is an adaptation problem in rural areas.	1
They are concerned with daily problems, and following current affairs.	4
The teachers in villages are competent.	1
They have knowledge about other issues too.	3
They are competent in creating a learning-teaching environment.	1
They are competent due to university education.	1

According to Table 4, the elementary supervisors think that the teachers are competent regarding general knowledge, but they do not correlate general knowledge with lessons, are not concerned with daily matters, and do not follow current affairs. They also think that their teachers' general knowledge is competent due to the exams they have had to take. Their general knowledge is improving but not their professional knowledge. They cannot establish good communication with their environment. They are the least competent in forming a good teaching-learning environment.

The main themes and categories formed according to the views of elementary supervisors who found the general knowledge of teachers to be "competent" are shown in Figure 3.

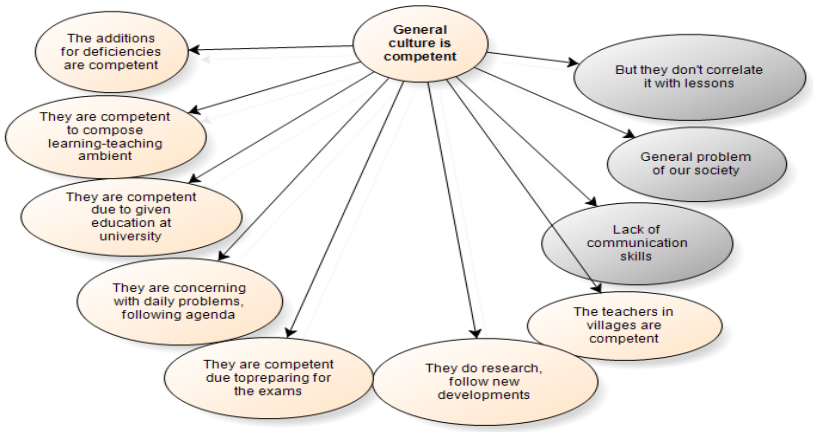

Figure 3. *The replies of elementary supervisors on general culture competency of teachers*

In Figure 3, the elementary supervisors found the teachers to be competent in general culture due to either their own individual efforts or their education. Here, an interesting reply is that the KPSS helps to improve the general knowledge of teachers. In addition, some elementary supervisors stated that the teachers did not correlate their general knowledge with lessons. Some of them pointed out that general knowledge is typically a social problem. While most of the elementary supervisors perceived the general knowledge level of teachers as competent, some of them perceived the teachers to be lacking in competence in general knowledge.

The Views of Elementary Supervisors on "Low Competency in General Culture of Teachers"

Table 5

The Views of Elementary Supervisors on "Low competency in General Culture of Teachers"

Low Competency in General Knowledge	Frequency
They do not follow scientific developments or innovations in education.	2
They need to develop themselves.	8
Reading books and magazines, and the arts, are not given importance.	48
They experience physical, spiritual and economic problems.	3
Magazine and film knowledge is regarded as general knowledge.	7
The media are deficient in this point.	2
Professional resources are not used.	5
They are not interested in global or national problems.	10
They do not read and study new programmes.	4
Teaching based on the YÖK (Higher Education Council) rules cause problems.	1

In Table 5, according to elementary supervisors, the low competencies of teachers in general knowledge are as follows: the teachers are not interested in reading books and newspapers, do not give importance to the arts, are not interested in global or national problems, need to develop themselves, and regard magazine and film knowledge as general knowledge. The teachers do not read and examine updated programmes. The teachers are low in competency due to the testing system. They do not follow scientific developments or innovations in education. The teachers are limited only to the knowledge that they acquired from faculties.

Most of the elementary supervisors found teachers to be competent in general knowledge. The themes and categories formed from the views of elementary supervisors who found the general knowledge of teachers to be lacking are given in Figure 4.

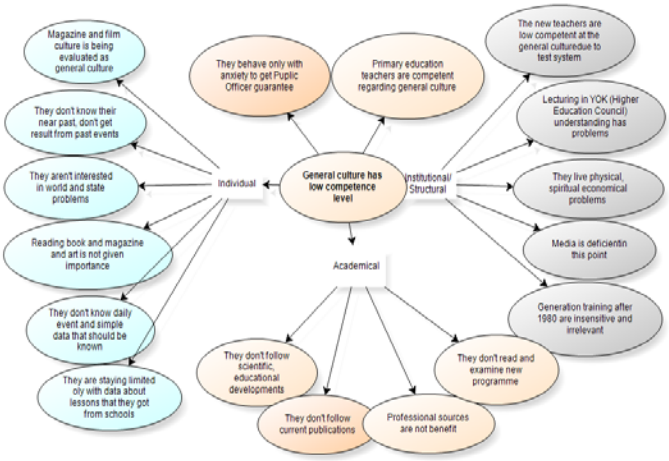

Figure 4. *The replies of elementary supervisors on low competency in general knowledge of teachers*

In Figure 4, from the individual point of view, the teachers make no effort to develop their general knowledge; they do not read books or newspapers, and they are not interested in world and country problems. It is stated that academic publications and sources which support general knowledge are not utilized. From an organisational viewpoint, the following replies were given: social developments in the 1980s has made the new generation insensitive about such matters; YÖK [Higher Education Council] programmes do not support this interest; and the media do not make publications which may increase general knowledge.

Additionally, it was stated that the general knowledge of fresh teachers is lacking due to the testing system. It is notable that the views of elementary supervisors who found the teachers to be competent and lacking in competency about general knowledge have opposite views. The examination system was found to be "supportive" by some elementary supervisors, but, on the contrary, some of teh elementary supervisors found it to be limiting. The elementary supervisors who thought that the teachers were not competent in general knowledge believed that most teachers did not read any professional books, let alone any popular books. It cannot be said that teachers take part in research, examining, reading or discussion activities.***The Views of Elementary Supervisors on "Competency in Pedagogic Formation of Teachers"***

Table 6

The Views of Elementary Supervisors on "Competency in Pedagogic Formation of Teachers"

Competency in Pedagogic Formation	Frequency
Efforts to improve are low.	2
There are problems in practice.	29
Some faculty of education graduates are competent.	2
Graduates from faculties of education are competent.	1
Old teachers are more competent.	2
The teachers that have graduated recently are competent.	1

In Table 6, the views of the elementary supervisors who found the teachers to be competent in pedagogic formation are as follows: the teachers are competent in pedagogic formation, but there are problems in practice, and efforts to improve pedagogic formation are low, but experience makes formation more effective in the field. Pedagogic formation competency is not useful due to insufficient conditions in schools. It is limited to the lessons learned by the faculty, and the teachers who have graduated from education faculties in recent years are competent pedagogically. Although teachers are competent from the pedagogical point of view, they cannot realise this at school due to some school conditions. According to Çığ (2006), there are some negative factors that affect low competencies of teachers and these factors include poor physical conditions, economic conditions, lack of technical and assistant staff, indifference of parents, administrators and teachers and changes in the regulations.

The themes and categories formed from the views of elementary supervisors who found teachers "competent" in pedagogic formation have been given below in Figure 5.

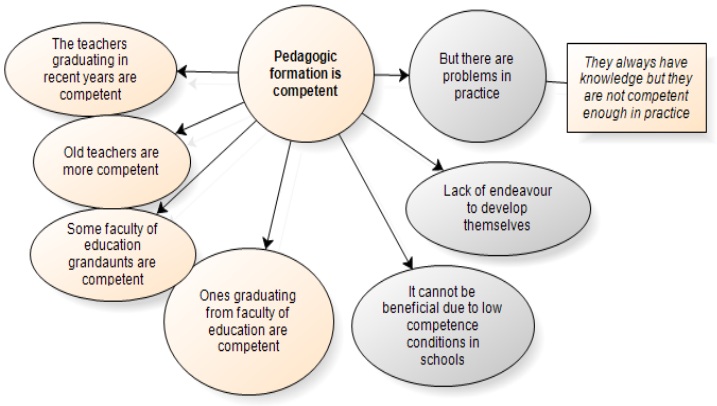

Figure 5. *The replies of elementary supervisors who found teachers' competency in pedagogic formation to be lacking.*

In Figure 5, the views of elementary supervisors who found teachers to be competent in pedagogic formation differ from each other. The increasing responsibilities of teachers can change the competencies required. The level of competencies will affect the learning capacity of students. The more competent teachers are, the more the student will learn. According to some elementary supervisors, new generation teachers are more competent and according to some elementary supervisors older generation teachers are more competent. Some of the elementary supervisors who found teachers competent expressed some problems. In research in the educational field, it is stressed that as teachers become more competent, so do their students. (Gözütok, 1995). From the individual viewpoint, teachers do not make efforts to improve themselves, and from the organisational viewpoint, schools do not have favourable conditions.

The Views of Elementary Supervisors on "Low Competency in Pedagogic Formation of Teachers"

Table 7

The Views of Elementary Supervisors on "Low Competency in Pedagogic Formation of Teachers"

Low Competency in Pedagogic Formation	Frequency
Knowledge and experience in some fields are deficient.	4
Formation remains at knowledge level.	3
They do not improve themselves.	15
They are low in competency about teaching methods and techniques.	10
There are problems with the examining of the programme.	1
The teachers who have graduated in recent years are low in competency.	2
They see all students in the same way.	3
There are deficiencies in practice.	27
The in-service education with universities should be developed.	9
When constructivism is considered, they are low in competency.	2
There are deficient about new programmes.	4

In Table 7, the elementary supervisors feel that the teachers have a low competency in pedagogic formation. Özdemir (2003) found that the activities of elementary supervisors are not enough to eliminate the competency problems of administrators and teachers. After graduating, many teachers are low in competency in managing classes, application and preparing activities according to the level of the students, although they succeed in exams. They state that the teachers' deficiencies regarding pedagogic formation may wane in time through experience, in-service training and sharing knowledge and experience with other teachers. The suggestions of elementary supervisors to solve the problems in this area include developing in-service training.

There are many elementary supervisors who find teachers' pedagogic formation to be insufficient. The themes and categories formed from the views of elementary supervisors who found pedagogic formation competency of teachers to be low are given below in Figure 6.

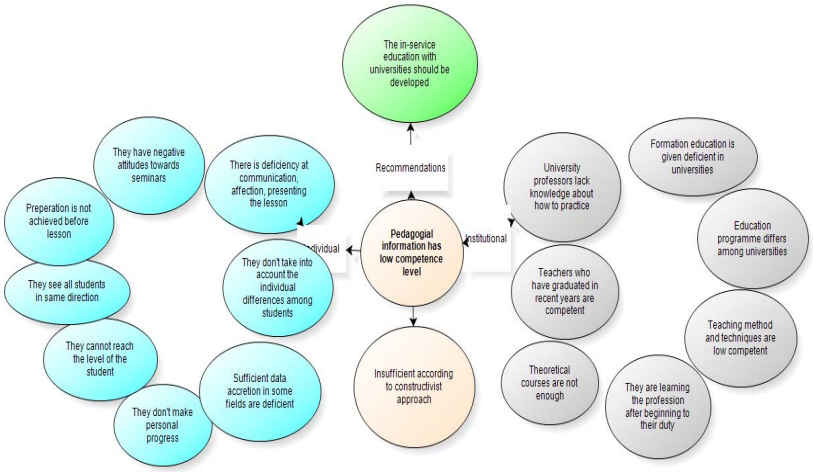

Figure 6. *The replies of supervisors who found low competency in pedagogic formation of teachers.*

When Figure 6 is examined, it is evident that some elementary supervisors who found teachers' pedagogic formation competency to be low present individual reasons, while others present organisational reasons. From an individual viewpoint, the reasons can be stated as follows: teachers cannot improve themselves and cannot adapt to the level of the students. From the organisational point of view, we see replies which question the education received by the faculties of education. The following are among the reasons stated: formation education is deficient, the education in one university is different from that of another, and lecturers' knowledge of teaching practice is deficient. Additionally, it has been stated that the formation knowledge of teachers who have graduated in recent years is deficient. Another interesting reply is that pedagogic formation is deficient from a constructivist approach.

The Views of Elementary Supervisors on the Activities They Carry Out to Develop Teachers' Competencies

The activities indicated by the elementary supervisors to develop teachers' competencies include guidance, organising in-service training, and seminars. Also, the elementary supervisors expressed that they provided professional assistance to the teachers; they carried out class visits and encouraged teachers. The activities carried out by the elementary supervisors are as follows:

Table 8

The Views of Elementary Supervisors on their Facilities for Developing Teachers' Competencies

What Elementary Supervisors Do to Develop Teachers' Competencies	Frequency
In-service training, seminars, courses and meetings	53
Hands-on training	7
Show resources, distribute photocopies and other tools	26
Guidance	78
Perform only the duties that are stated in the regulations	1
Class visits	7
Encourage teachers	5

When Table 8 is examined, the elementary supervisors' activities regarding application, motivation and developing themselves to expand the competencies of teachers are as follows: guidance, in-service training, seminars, courses and meetings, reference person, showing other resources, distributing photocopies, suggesting professional work, hands-on training and class visits. This finding confirms the finding by Başar (1993), who states that the roles and competencies of elementary supervisors are as follows: leadership, administration, guidance and support, training, investigation and questioning.

The themes and categories formed from the views of elementary supervisors about what kind of activities they carry out for teachers have been given below in Figure 7.

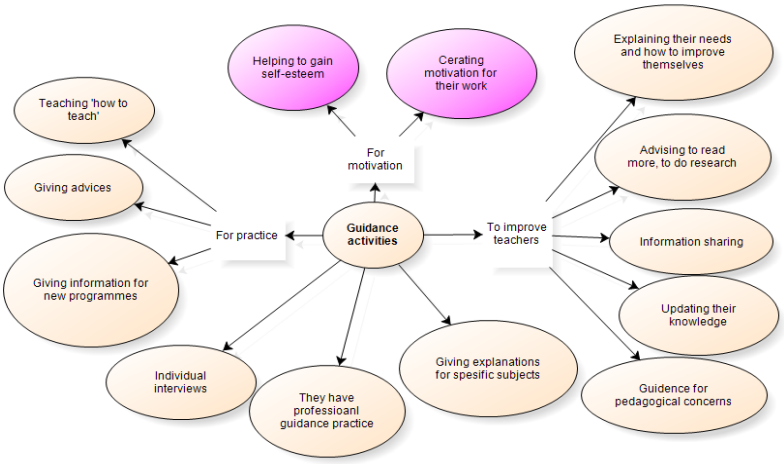

Figure 7. *Guidance activities of elementary supervisors*

In Figure 7, based on the replies of the elementary supervisors, the guidance activities of elementary supervisors have been put into three categories: from a practice viewpoint, showing how to teach in a practical way, giving advice, and creating activities regarding the application of new programmes. From a motivational point of view, gaining the self-confidence of teachers and creating a suitable working atmosphere. From an improvement viewpoint, how to spot deficiencies, leading to conduct research, reading and discussion, performing information exchange, updating knowledge and gaining teaching formation.

The activities conducted by the elementary supervisors and the suggestions they offer indicate that they often guide, meet and talk face to face and they arrange all activities together despite their limited time. This finding is similar to the finding by Taymaz (1982), who states that according to the modern and scientific concepts, supervision is carried out not only for control but also for developing the system and teaching learning process. According to İlgan (2008), elementary supervisors and teachers should consider, in classes and at schools, personal, social, organisational, historical and cultural values improving teachers' competencies.

Conclusions and Recommendations

The following conclusions have been drawn:

1. The views of elementary supervisors on "competency in field knowledge of teachers" are separated into two main groups. Some elementary supervisors found the teachers competency in field knowledge, while others found them to be lacking in competency. However, the elementary supervisors who found them to be competent presented some problems, especially with problems related to practice. The elementary supervisors who replied that the teachers' field knowledge was low competent, mentioned individual and organisational problems as the main reasons. From the individual viewpoint, it was stated that teachers do not develop themselves sufficiently; they do not read and research; and they are reluctant to renew themselves. Another interesting finding is that some teachers are afraid of trying something new. Principal organisational problems include shortcomings in the programmes of education faculties. The elementary supervisors especially emphasise that practice is not sufficient during the bachelors degree education, that there are differences in lesson programmes among the faculties, and that lecturers do not contain ample competencies.

2. When the general knowledge competencies of teachers were examined, some elementary supervisors found teachers to be competent in general knowledge, due to either their own individual capacity or to their education. Some elementary supervisors who found this sufficient, emphasised that teacher selection exams help teachers improve their general knowledge. Other elementary supervisors found the general knowledge of teachers to be insufficient. From an individual point of view, the following items were indicated: the teachers make no effort to improve themselves, they do not read books or newspapers, and they are not interested in

world or national affairs. It was stated that from a professional or academic point of view, publications and resources which support general knowledge are not sufficiently used. From the organisational viewpoint, the following responses were given: social developments in the 1980s have made new generations insensitive about such matters; YÖK [Higher Education Council] programmes do not support this interest; and the media do not offer publications to increase general knowledge.

3. As for the views of elementary supervisors who find the pedagogic formation of teachers to be competent, some elementary supervisors stated that the new generation of teachers were more competent, and others believed that the older generation of teachers were more competent. Also, it was stated that the teachers who graduated from the faculties of education are competent in this area. However, it was also stated that it was the teachers who graduated from specific faculties of education who were more competencies. It is seen that the elementary supervisors who found pedagogic formation to be low competency conclude that the teachers do not improve themselves and cannot adapt to the level of students. Also, it was noted that the pedagogic formation of teachers who have graduated in recent years is low competency. The elementary supervisors state that the teachers' pedagogic formation is not consistent with the modern constructivist approach.

4. The elementary supervisors' activities regarding application, motivation and self-development in order to improve are as follows: guidance, in-service training, seminars, courses and meetings, being a person of reference and pointing out additional resources, distributing photocopies, suggesting professional works, on-the-job training and class visits.

Consequently, according to the views of elementary supervisors, it can be said that teachers are competencies in field knowledge, general knowledge and pedagogic formation theoretically, but they are deficient in their application. The elementary supervisors state that some teachers are aware of their deficiencies and that they are endeavouring to eliminate them. Another conclusion is that the elementary supervisors give priority to activities necessary for the progress of teachers rather than to supervising.

The suggestions that have been developed based on the results of this study can be stated as follows:

- Necessary importance should be given to teaching practice in education faculties. The duration and efficiency of this should be increased.
- The regulations that will be used by elementary supervisors during supervision should be made applicable to updated programmes.
- While the elementary supervisors are evaluating the teachers, they should not be content only with points; they should also give importance to evaluation and amendments.
- Education faculties should give periodic training to help teachers update themselves.
- There should be more research into the competencies of teachers.
- In-service training aimed at developing teachers' competencies should be stressed.

- Teachers should be made aware of the need to acquire general knowledge through individual efforts.
- Postgraduate education opportunities for supervisors and teachers should be increased.

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Öğretmen Yeterlikleri Hakkında İlköğretim Denetçilerinin Görüşleri

(Özet)

Problem Durumu: Okulöncesi öğretim kurumları ile ilköğretim kurumlarının rehberlik, denetim, inceleme ve soruşturma hizmetleri İl Milli Eğitim Müdürlükleri'nde yer alan ilköğretim denetçileri tarafından gerçekleştirilmektedir. İlköğretim denetçileri görevlerini, "İlköğretim Müfettişleri Başkanlıkları Yönetmeliği" ve "Rehberlik ve Denetim Yönergesi" esaslarına göre yerine getirirler. Dış denetime göre; denetim yapan ilköğretim denetçileri, ders denetimi sonunda yaptıkları değerlendirmeleri "Öğretmen Denetim Formu"na kayıt ederler. Bu form, öğretmenlerin ders içinde yaptıkları çalışmaların planlı olarak gözlenmesi ve bu gözlem sonuçlarının işlenmesi için kullanılmakta olup, bütün öğretmenlerin sınıf içindeki öğretim ve eğitim etkinliklerinin aynı ölçütlere göre değerlendirilmesi amacına yöneliktir. Eğitimde, öğrencilerin istenilen seviyeye gelebilmeleri için öğretmenlerin bazı alanlarda yeterliklere sahip olmaları gerekmektedir. Yeterlilik kavramı, bir işi veya görevi yapabilme gücü demektir. Öğretmen yeterlikleri, alan bilgisi, genel kültür bilgisi ve pedagojik formasyon bilgisi olarak gruplanabilir. Bu yeterliklerin gelişmesinde öğretmenlere rehber olacak denetçilerin katkısı çok önemlidir. Denetçilerin rolleri ve yeterlikleri günümüzde denetimden çok rehberlik esaslıdır. Bu nedenle denetçilerin öğretmenleri değerlendirmeleri ve geliştirmeleri için önerileri bu araştırmanın konusunu oluşturmaktadır. Deneyime dayalı yeterliliği önemli gören bu yaklaşımın, öğretmenlerin öğretimle ilgili çeşitli karar alma süreçlerine daha aktif katılarak mesleki deneyimlerine ve yeterliklerine sahip çıkmalarına yol açacağı düşünülmektedir.

Araştırmanın Amacı: Bu araştırmanın amacı, öğretmenlerin mesleki yeterliklerini değerlendirmek ve değerlendirme sonucuna göre öğretmenlerin mesleki yeterlikleri alanındaki gelişimlerine katkıda bulunmak konusunda ilköğretim denetçilerinin görüşlerini ve gerçekleştirdikleri etkinliklerin neler olduğunu ortaya çıkarmaktır. Öğretmenlerin alan bilgisi, genel kültür bilgisi ve pedagojik formasyon bilgileri açısından yeterlikleri ile ilgili ilköğretim denetçilerinin görüşleri alınmıştır. Bunun yanında denetçilerin ilköğretim öğretmenlerinin yeterliklerini geliştirmek için yaptıkları etkinliklerle ilgili görüşlerde tespit edilmiştir.

Araştırma soruları: 1. Öğretmenlerinin alan bilgisi açısından yeterlikleri ile ilgili ilköğretim denetçilerinin görüşleri nelerdir? 2. Öğretmenlerinin genel kültür bilgisi açısından yeterlikleri ile ilgili ilköğretim denetçilerinin görüşleri nelerdir? 3. Öğretmenlerinin pedagojik formasyon açısından yeterlikleri ile ilgili ilköğretim denetçilerinin görüşleri nelerdir? 4. Öğretmenlerinin yeterliklerini geliştirmek için ilköğretim denetçilerinin yaptıkları etkinliklere ilişkin görüşleri nelerdir?

Araştırmanın Yöntemi: Bu araştırmada İlköğretim deneticilerinin görüşlerine göre, ilköğretim öğretmenlerinin mesleki yeterliliğini belirlemeye çalışılan bu araştırmada betimsel yöntem kullanılmış ve veriler için yarı-yapılandırılmış görüşme formu kullanılmıştır. Betimsel çalışmalar mevcut durumu ortaya çıkaran araştırmalardır (Karasar, 19991, s.77; Yıldırım & Şimşek, 2005, s.158).

Veriler yarı yapılandırılmış dört açık uçlu soru formunun uygulanması yoluyla elde edilmiştir. Bu çalışma, 2008 yılı Mayıs-Haziran ayında gerçekleştirilen "Öğretim Sürecini Geliştirme Kursu" programına katılan 178 ilköğretim denetçisi ile yürütülmüştür. Burada kullanılan örnekleme yöntemi amaçlı örnekleme türlerinden "kolay durum örneklemesi"dir. Çalışmaya katılan ilköğretim deneticileri Türkiye'nin çeşitli illerinden hizmet içi eğitim amaçlı olarak araştırmanın yapıldığı alana gelmişlerdir. Yarı yapılandırılmış görüşme formundaki soruların iç ve dış geçerliğini sağlamak için, görüşme formu 5 uzmana verilmiş ve incelemesi sağlanmıştır. Sorulan soruların açık ve anlaşılır olup olmadığı, ele alınan konuyu kapsayıp kapsamadığı ve gerekli olan bilgileri sağlama olasılığını da düşünerek uzmanların kontrol etmesi istenmiştir. Araştırılan konunun ışığı altında yapılandırılan mülakat formunun pilot çalışması, beş ilköğretim denetçisi ile gerçekleştirilmiştir. Yapılan pilot çalışma neticesinde hazırlanan mülakat formunda küçük değişiklikler yapılmıştır. Bu çalışmanın sonunda, soru maddelerinin geçerliği saptanmış; böylece görüşme formuna son şekli verilmiştir Pilot çalışmaya katılan ilköğretim denetçileri, daha sonra yapılacak olan asıl araştırmaya dahil edilmemişlerdir. Katılımcıların tamamına yarı yapılandırılmış görüşme formu uygulanmıştır. Yarı yapılandırılmış görüşme formlarından elde edilen veriler nitel araştırma tekniğine göre "NVivo8" programı kullanılarak çözümlenmiştir. Nvivo Programının sunduğu 'Model' oluşturma işleviyle analizde geliştirilen kategorilerin ve bunlar arasındaki ilişkilerin görselleştirilmesi sağlanmıştır. Dolayısıyla Modelde kullanılan kategoriler bazen yalnızca tek bir deneticinin yanıtına dayanmaktadır. Her bir katılımcı araştırmanın amacı ve gönüllü katılım prosedürü hakkında önceden bilgilendirilerek gönüllü olarak araştırmaya katılmaya davet edilmiştir. Katılımcıların kimliklerinin deşifre edilmemesi ve korunmasını sağlamak için her bir katılımcıya numara olarak rumuzlar verilmiştir. Verilen cevaplar doğrultusunda katılımcıların görüşleri araştırmacı tarafından değerlendirilmiştir. Eğitim bilimleri alanında yapılan nitel araştırmalarda en önemli sınırlılıklardan birisi, elde edilen verilerin genellenememesidir. Bu çerçevede, 178 ilköğretim denetçisiyle yapılan yarı yapılandırılmış bir çalışmanın tüm Türkiye'ye genellenmesi bilimsel açıdan çok doğru değildir. Buna karşın, yarı yapılandırılmış form ile elde edilen verilerin araştırılan konuyla ilgili genel bir fikir vereceği ve faydalı olabileceği düşünülmektedir.

Araştırmanın Bulguları: Araştırmanın sonucunda İlköğretim denetçileri alan bilgisi, genel kültür bilgisi ve pedagojik formasyon bilgileri açısından öğretmenleri çoğunlukla yeterli görmektedirler. Ancak bu bilgilerin eğitim ortamında uygulanması konusundaki yeterliklerini ise eksik

bulmaktadırlar. Denetçilerin öğretmen yeterliklerini geliştirmek için yaptıkları etkinlikler genelde rehberlik, alan yazına ilişkin öneriler, çevre ile işbirliği yapma ve motivasyonlarını arttırıcı çalışmalardır. Sonuç olarak öğretmenlerin teorik olarak bilgilerinin denetçiler tarafından genelde yeterli görülürken uygulamada yetersizlikler gözledikleri sonucuna varılabilir. Denetçilerin, öğretmenlerin alan bilgilerinin yeterliliği konusundaki görüşleri iki ana grupta toplanmaktadır. Denetçilerin bir kısmı öğretmenlerin alan bilgilerini *yeterli* bulmakta iken bir diğer kısmı ise *yetersiz* bulmaktadır. Ancak alan bilgisini yeterli bulan denetçilerin büyük çoğunluğu bu konuda bazı sorunları dile getirmişlerdir. Özellikle uygulamada sıkıntıların olması en fazla belirtilen sorun olmuştur. Öğretmenlerin genel kültürlerini yeterli gören denetçilerin bazıları öğretmen alımı sınavlarının genel kültür bilgisine yardımcı olduğunu vurgulamaktadır. Bireysel düzlemde öğretmenlerin genel kültürlerini geliştirme çabalarının olmadığı, kitap, gazete okumadıkları, dünya ve ülke sorunlarına ilgi duymadıkları gibi yanıtlarla belirtilmiştir. Öğretmenlerin pedagojik formasyonlarını *yeterli* bulan denetçilerin görüşleri sonucunda denetçilerin bir kısmına göre eski diğer bir kısmına göre ise yeni kuşak öğretmenler daha yeterlidir. Ayrıca, Eğitim Fakültelerindeki eğitimin sorgulandığı görülmektedir. Denetçi görüşlerine göre, lisans düzeyinde formasyon eğitiminin eksik olduğu, her üniversitede verilen eğitimin birbirinden farklı olduğu ve öğretim üyelerinin uygulamaya dönük bilgilerinin eksik olduğu sonucuna varılabilir. Öğretmenlerin yeterliklerini geliştirmek üzere denetçilerin uygulamaya ve kendilerini geliştirmeye dönük yaptıkları etkinlikler sırasıyla; rehberlik, hizmet içi eğitim, seminer, kurs ve toplantılar, kaynak kişi olma ve diğer kaynakları gösterme, fotokopi dağıtımı, mesleki eser önerme, iş başında yetiştirme, sınıf ziyaretleri etkinlikleri olarak vurgulanabilir.

Araştırmanın Sonuç ve Önerileri: Sonuç olarak, ilköğretim denetçilerinin görüşlerine göre, öğretmenlerin meslekte alan bilgisi, genel kültür ve pedagojik formasyon bilgisi yeterliliği bakımından bilgi anlamında yeterli ancak uygulamada eksik yanlarının olduğu sonucuna varılabilir. Denetçiler öğretmenlerin bazılarının bu eksiklerinin farkında olduğunu ve yeterliliklerini geliştirmek için gayret içinde oldukları görüşündedirler. Bir diğer sonuç ta denetçilerin denetimden çok öğretmenlerin gelişimi için gerekli etkinliklere öncelik vermeleridir. Öğretmenlerin daha etkili bir şekilde öğretim sağlayabilmesini kısıtlayan etkenler öğretmen görüşleri dikkate alınarak belirlenmeli ve giderilmeye çalışılmalıdır. Öğretmenlerin öğretmenlik mesleği ile ilgili bilgi ve becerilerinin artması için öğretmen görüş ve istekleri doğrultusunda hizmet içi eğitime ciddiyetle önem verilmelidir. İlköğretim denetçilerinin denetim ve rehberlik sırasında kullanacakları yönerge yenilenen programlara uygun hale getirilmelidir. Öğretmenlerin mesleki gelişimleri için fakültelerden faydalanmaları attırılmalıdır. Lisansüstü eğitim fırsatları arttırılabilir.

Anahtar Sözcükler: Öğretmenin yeterlikleri, Öğretmen değerlendirme, Eğitim denetimi, İlköğretim.

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A Comparison of Articles Published in the Field of Educational Administration in Terms of Topics, Methodologies and Results

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Abstract

Problem Statement: In recent years, there has been an increase in the number of articles and thesis production about educational administration in Turkey. Having a review of these articles and comparing them with other articles from other countries and reaching a result on the basis of practice can contribute to educational administration achieving the place it deserves in Turkey.

Purpose of the study: In this report it is aimed to determine the problems chosen as research matter in the field of Educational Administration. In this context, the articles published in the main academic journals of the four developed English speaking OECD countries, namely the United States of America, England, Canada, and Australia, and, those in Turkey, have been reviewed to compare their topics, methodologies and the results they achieved.

Data Collection and Analysis: Document analysis was applied in this research. The data in this descriptive study were obtained from the web sites of the journals published in Turkey and abroad between 2004 and 2008. The sample of the research included 154 Turkish online articles, and 610 foreign online articles. These articles were analysed with respect to

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their topic of study, their choice of methodological approach, and their results, and compared at each level of topic, methodology and results.
Findings: While the developed countries offer a relatively wider perspective range in choosing their research matter, in Turkey, similar research topics have been studied with the same methods. Qualitative research methods are most frequently used abroad in contrast to the quantitative ones used in Turkey. Regarding the results of articles, there is not enough of a knowledge base for the probable production of an educational theory; the articles are written rather with the narrow perspective that tests practical knowledge.
Recommendations: Educational Administration as a field should develop new alternative research methods in order to reach a more scientific and comprehensive perspective and should benefit from the concepts and systems of behavioural sciences. In Educational Administration programs in Turkey, it should be evaluated whether to open new lessons regarding the social behavioural disciplines and the developments in social theories whereby educational administration researches can be directed onto social concepts such as justice, values, equality, human rights, politics, language and culture. The field should start multi-dimensional research projects together with behavioural scientists like sociologists and psychologists.

Keywords: Educational administration, educational policies, educational research, journals of educational administration

Administration, in general, is defined as a cooperation of individuals to reach a certain goal. Education is a service for human beings, while educational administration is defined as a practical, interdisciplinary and humanistic field of study (Şişman & Taşdemir, 2008). Educational administration is also defined as the process of using human force and material sources to reach a targeted change in human behaviour.

Theoretical knowledge of educational administration is given in Turkey at the postgraduate level. The content of the programmes shows that the academic community is struggling to better understand the field. However, this attitude can cause the field to be alienated from the social sciences which supply a theoretical base to educational administration, such as philosophy, psychology, anthropology, sociology and linguistics (Yıldırım & Şimşek, 2005), and to be distanced from a multi-disciplined viewpoint (Beycioğlu & Dönmez, 2006). In the research of Educational Administration, a knowledge base is produced in a narrow field due to a mono-disciplined, reductive, and deterministic understanding of the philosophy of science. Hoy & Miskel (2001) declares that connection between disciplines in educational administration is overseen and emphasizes that to set this connection is very important.

It is obvious that the amount of research in the field of Educational Administration in Turkey has increased recently. The review of these articles and the

comparison of the publications with those in other countries, along with reaching a result on the basis of practice can contribute to Educational Administration practices in Turkey. The aim of this study is to determine the trends within topics and methodology both in Turkey and abroad, and to compare these choices. In this study, it will be reviewed and compared which subjects were preferred to be studied in the field of Educational Administration conducted in different countries, i.e., America, England, Canada, Australia and Turkey. For this reason, in Turkey, and in the four developed countries, the articles published between 2004 and 2008, if available on internet websites, are going to be investigated, and compared on the subject-matter of those articles, methodology and their results, and a conclusion will be reached.

On looking back to the past knowledge of the field, Owens (1987) states that educational administration was influenced very little by the evolution in administrational sciences. For him, research focused on existing problems and studies done on the theoretical bases of Educational Administration are not adequate. Southworth (2001) claims however, that Educational Administration has accelerated to form its own theoretical bases and concepts especially since 1980.

Maxcy (2001), declaring that the field of educational administration has not developed systematically, says that most of the educational research investigates concepts of leadership and performance-based administration. Greenfield (1994) suggests research in educational administration should turn to subjects forming human behaviour such as language, culture, and social context to understand social realities. For him, an understanding of science that separates values from phenomena and ignores them has collapsed in both organization and administration research.

Approaches dominant in Educational Administration that guide research are human relations and a system approach. Postmodernism sees all theories and approaches developed in Educational Administration as modernist and thus rejects the whole. Postmodernism defines the subjects that must be the centre in Educational Administration research and applications as multiple meaning, cultural identifications, power relations, critical consciousness and resistance, uncertainty, participation, social responsibility and distortion (Turan, 2004).

Hoy (1978) scanned the research reports published in the *Educational Administration Quarterly (EAQ)* and the *Journal of Educational Administration (JEA)* and reached these results: Educational Administration research is far away from systematic strivings The reason for this situation is that Educational Administration research is mostly held in practice, but research in the field must rely on a certain theory.

Hoy (1982) made a new scanning on the same academic journal a few years later, and concluded that educational administration research is behind scientific developments in behavioural sciences. Hoy states that long-term school organization research is nearly never done, and the questionnaire is mostly used in research as a means of data collection. Educational Administration research tends to steer away

from systematization and maintains its qualification of not relying on a theory. According to him, the stronger the theory gets the stronger an efficiency of research will get.

Bridges (1982) reviewed the research on educational administrators made between 1967 and 1980. He searched 322 reports in the publications of Educational Administration in the "Dissertation Abstracts". His findings are these: Research in Educational Administration is not different from that of fifteen years ago. Research usually focused on school outcomes. Like Hoy (1982), Bridges (1982) emphasized that Educational Administration research is not dependent on theory. To him, due to this characteristic, Educational Administration research has not been able to solve any theoretical or practical problem about school administrators since 1967.

Badavan (1985) reviewed 26 theses conducted in the Turkish universities of Ankara and Hacettepe, and subcategorised the topics studied in the field as leadership, decision making process, human relations management processes, educational staffs, educational organizations, in-service training and educational inspection. Balcı (1988) declared that his findings are similar to those of other research. The questionnaire emerges as the most common means of data collection preferred in 17 of 23 studies. And at the end of the study, it was emphasized that if educational administration research should contribute to the field and find a solution to the problems, then it is quite necessary to increase its qualifications.

The research study of Akçay, Kartal, Canbaz & Savrul (2007) scanned postgraduate theses in Turkey, written between 2006 and 2007. They concluded that research mostly focused on such themes as organizational psychology, administrative science, theories and processes of educational administration, organizational behaviour, inspection, and problems in educational inspection practices. It was found that organizational behaviour with a proportion of 21%, organizational development, change and problems with 21%, and school management with 23% are the frequent studies in the theses and that quantitative methods are more frequently used in field studies. Furthermore, they offered some suggestions such as there are too many quantitative studies in the field. Thus qualitative ones should be used instead and most importantly, there is a need for cooperation between the universities to contribute more to the field.

Aypay et al. (2008) analyzed 13 randomly chosen magazines among the world's most popular and respected ones in the field of Educational Administration. They cited 449 articles about the field that had been published between 1997 and 2007. In the research, utilizing document analysis, they categorized the subjects and research methods. Accordingly, the main subjects are: (1) Leadership, (2) Teaching, Learning and Measurement, (3) Principalship, (4) Society, Community and School, (5) Organizational Structure and Processes, (6) Teacher Training (7) Educational Policies and Programmes, (8) School Effectiveness, (9) Organizational Climate, (10) Theory, Research and Practice, (11) Field Studies of Educational Administration, (12) Change and Innovation, (13) School Business and Finance, (14) Curriculum, (15) Politics of Education, (16) Decision Making, (17) Guidance and Supervision, (18) Comparative Educational Systems of Countries, (19) Attitude Formation and Change, and (20)

Administrator Training and Appointment. Moreover, they emphasized there is an increase in the number of qualitative research methods in the studies of the field, in which 46% of studies are qualitative, 37% quantitative and 16% mixed, meaning a combination of both.

In light of studies in the field, worldwide Educational Administration has experienced a profound paradigmatic change, but Turkey stands 20 years behind this change and the gap between them is still expanding (Şimşek, 1997). In order to close this gap, it is beneficial to evaluate recent field studies in developed countries, and to synchronously compare their results with the ones achieved in Turkey, in order to determine the direction of future research policies as well as shed light on the current situation.

Method

Research Design

Since the aim of this study is to reveal the topical and methodological trends in the research made both in Turkey and abroad in the last five years, and to review their results, it is formed to the design of a descriptive study including document analysis, in which measurements are given by means of percentage and frequency.

Sample

The research universe of the study is formed by the articles published in Turkey and abroad in the last five years, 2004–2008. The first leg of the research is to evaluate the journals of Educational Administration published online in Turkey, since to reach those journals is much easier, more time-saving and economical. These online and refereed Turkish articles were obtained to form a sample on the Turkish side. Because the Turkish articles are low in quantity, we decided all online journals published in Turkey should be included in the sample. At another leg, four developed English speaking OECD countries were chosen to form a sample on the foreign side. As mentioned previously, the countries that the researchers agreed on are the United States, Canada, England and Australia. From these countries were chosen five journals, some purposefully and some not, namely *Educational Administration Quarterly (EAQ)* from the USA, *Journal of Educational Administration (JEA)* from Australia, *Canadian Journal of Educational Administration and Policy (CJEAP)* from Canada, *School Effectiveness and School Improvement (SESI)*, and *Educational Management Administration and Leadership (EMAL)* from England. The journal, *Educational Administration Quarterly (EAQ)*, is a well-known journal all over the world, so it is chosen purposefully on the basis that, according to Mayo, Zirkel & Finger (2006), it is, because of its quality, the most preferred journal, with a percentage of 13% of the professors having membership in the UCEA (University Council for Educational Administration). Moreover, it is a very international journal, publishing research performed in many other countries in the world, so it involves in itself a sample of research being done across the world. The journal from Australia, the *Journal of Educational Administration (JEA)*, was also chosen purposefully because

of its popularity in the field of educational administration, but other journals from Canada and England were chosen randomly. Another criterion to determine the articles to be taken into the sample of the investigation was to limit the number of articles to avoid an excessive workload, because there are a lot. Thus the articles published in those foreign journals of the last five years, between 2004 and 2008, were involved in the sample.

Procedure

The comparison of the articles from Turkey and abroad was made on the basis of their topics, methodological approaches, and the results achieved. In this document analysis, the researchers scanned all Turkish articles, 154 in number, and the foreign articles, 610, in terms of their topics, methods, and their results. In the comparison of articles' subject-matter, researchers reviewed the articles' keywords, abstracts and their content. On doing this, the themes already set in the literature of the field and other research studies by some researchers such as Balcı (1988), Badavan (1985), Aypay et al. (2008) and Akçay et al. (2007) have been partly utilized.

In order to compare the methodology exploited in the articles, researchers reviewed the method section of each article and categorized them as quantitative, qualitative and natural (mixed). Qualitative research is defined as investigations covering non-quantitative data-gathering methods such as observation, interview and document analysis, and following a non-quantitative process in which phenomenon and events are exposed in a realistic and holistic way in a natural situation (Yıldırım & Şimşek, 2005). Quantitative research is those investigations in which numerical results about the research matter, dependent on a previously prepared question form, are obtained from the sampling that represents the research universe and can be treated with mathematical analysis and be generalized afterwards. The natural or mixed methodology approach uses the combination of quantitative and qualitative methods. In the comparison of the results of the articles, researchers reviewed the conclusion section. In this report, the conclusions are summarized, and the most repeated conclusions are given in the third part.

Findings and Results

The findings achieved in light of data obtained in this research are analyzed under four major subtitles, comparing Turkish articles with the foreign ones published in the United States, Australia, England and Canada. The dimensions of these are namely, articles by their themes of study, research methods by themes of study, publication years by types of research methods and publication years and research results.

Comparison of Publications by their Subject Matter

Table 1
Turkish Publications Distribution by Research Subject-Matter in Last Five Years

	Educational Administration Theory and Practice	*Contemporary Education Journal*	*Journal of National Education*	*Journal of Turkish Educational Sciences*	*Electronic Journal of Social Sciences*	*Eurasian Journal of Educational Research*	*Educational Sciences & Practices*	*Hacettepe University Journal of Educational Faculty*	*Ankara University Journal of Educational Sciences*	*Gazi University Journal of Educational Faculty*
Leadership	5	1	2	1	1	2				
Organizational Culture	7	1	2	2		1		1	1	1
Organizational Management	3	2	5	2	2				1	1
Inspection	1		1	1					2	
Administrator Training & Appointment	1		2	1				1		1
Organizational Behaviour	4	2	2	1	1	2				
Theoretical Knowledge in Educational Administration	3									
Administrative Capabilities	6		3	1	1					
Educational Administration & Technology	2		1		1		1		1	
Teacher Training			3	2		1	1		1	
Turkish & World Educational Systems		2	4	4	1					
Other	3		3		1	3	1	1		
Total	35	8	28	15	8	9	3	3	6	3

Table 1 (Continued)

Turkish Publications Distribution by Research Subject-Matter in Last Five Years

Marmara University Journal of Educational Sciences	*Journal of Ege University Educational Faculty*	*Kastamonu Educational Journal*	*Journal of Selçuk University Educational Faculty*	*Pamukkale University Journal of Education*	*İnönü University Journal of Education*	*Uludag University Journal of Faculty of Education*	*Journal of Burdur University Education Faculty*	*Çanakkale Onsekiz Mart University Faculty of Educationbal Research*	*Mersin University Journal of Education Faculty*	*Yüzüncü Yıl University Journal of Education Faculty*	Total f	Total %
1	2	1		2	1			1			20	12,9
	1		1	1	1					1	21	13,6
1	3	1	1		1	1	1				25	16,3
					1						6	3,8
										1	7	4,6
1			1				1				15	9,8
		1									4	2,5
1				1					1		14	9,1
		1									7	4,6
											8	5,2
							1		2	1	15	9,8
											12	7,8
4	6	4	3	4	4	1	3	1	3	3	154	100

Table 1 shows that investigations are intensively centred around a few themes in the last five years in Turkey such as organizational management (16,3%), organizational culture (13,6%), leadership (12,9%), educational systems (9,8%), organizational behaviour (9,8%) and administrative capabilities (9,1%). It is also seen that some themes are rarely studied, which are theory in Educational Administration (2,5%), inspection (3,8%), administrative training and appointment (4,6%), and some themes such as educational policies, educational planning, change and innovation are nearly never studied in Turkey. It is easy to say, in Turkey, research is mostly related to the organizational theory, influenced by business management tradition. Educational Administration is dominated in Turkey by business-mindedness. Please note that in Great Britain and U.S. percentages are always with a decimal point rather than a comma e.g., 4.6%

Table 2
Foreign Publications Distribution by Research Subject-Matter in the Last Five Years

	EAQ	*JEA*	*CJEAP*	*SESI*	*EMAL*	f	%
Leadership	39	38	6	10	44	137	22,5
School Effectiveness	4	5	2	33	4	48	7,9
Principalship	6	30	1	1	9	47	7,7
Administrative-Organizational Structure and Process	9	20	1	5	12	47	7,7
Politics of Education		7	19	7	9	43	7,0
Professional Preparation and Certification	13	16	9	1	3	42	6,9
Theory, Research and Practice	7	14		4	11	36	5,9
Society, Community and School	7	12	2	3	8	32	5,2
Professional Development	3	10	3	3	7	26	4,3
Teaching, Learning and Measurement	0	5	4	13	1	23	3,8
Reform	2	2	4	4	6	18	3,0
Change and Innovation	7	5		2	3	17	2,8
School Business and Finance	5	2	3		6	16	2,6
Supervision and Inspection	1	5	3		6	15	2,5
Decision Making		8		3	3	14	2,3
Educational Policies	7	1	1		4	13	2,1
Organizational Climate	7	3				10	1,6
Table 2 (Continued)							
Field or Study of Educational Administration	3	6			1	10	1,6
Other	1	5	4	5	1	16	2,6
Total	121	194	62	95	138	610	100

Table 2 shows the distribution of publications by their themes of study published in the selected foreign countries of the United States, Australia, England and Canada. It focuses on the foreign publications and on their themes of study. It includes publications from the United States, *Educational Administration Quarterly (EAQ)*, from Australia, *Journal of Educational Administration (JEA)*, from Canada, *Canadian Journal of Educational Administration and Policy (CJEAP)*, from England, *School Effectiveness and School Improvement (SESI)* and *Educational Management Administration and Leadership (EMAL)*.

Table 2 reveals that the studies of leadership in developed countries are the first in rank 22,5% and proves this theme to have a high importance. Leadership studies cover almost one fourth of the foreign publications, and other publications' spreads on other themes with similar percentages. Among other themes, after leadership, some are studied more frequently than others, such as school effectiveness (7,9%), administrative – organizational structure and process (7,7%), principalship (7,7%), politics of education (7,0%), professional preparation and certification (6,9%), theory research and practice (5,9%) and society, community and school 5,2%. According to Aypay et al. (2008), leadership, consistent with the finding given above, is the most frequently studied theme in Educational Administration. Similar to Aypay's findings (2008), themes such as Teaching, Learning and Measurement, Principalship, Society, Community and School, Organizational Structure and Processes, and School Effectiveness still maintain their popularity in research done abroad. In his study of the trends in the field, similarly, Murphy, Vriesenga & Storey (2007) observed that organizational theory, such as power, authority, control, culture climate, decision-making, job satisfaction, and leadership, have long been studied with a great interest, 27.8% of all. For almost thirty years in his study, the topic of profession of school administration is second in rank, 21.2%. Third in rank is politics, 10.5%, and the fourth is school reform, 9.5%.

In comparison of the topics studied in and out of Turkey, the topics studied in two group of journals are almost similar, as Aypay et al. (2008) and Murphy et al. (2007) observed in their studies, except for the studies of politics and school reform. Although these topics are being studied with a higher percentage in the foreign journals, Turkish researchers seem to avoid these topics. There is not any study on politics and school reform in Turkey. There seems to be a need of different sayings which cultivates the field in Turkey, rather than walking on the same circle. Another thing to point out here is that many Turkish articles do not fit into any categories of topics; 7.8% of the Turkish publications is set under the topic of "others", where this rate is 2.6% abroad.

Comparison of Turkish Articles by Their Methodology and Subject-Matter

Table 3 shows the research subjects by their methods used in Turkey.

Table 3

Turkish Article Distribution, by Their Methodology and Subject-Matter

	Subject-matter												Total	
	Leadership	Organizational Culture	Organizational Management	Inspection	Administrator Training and Appointment	Organizational Behaviour	Theoretical Knowledge in Educational Administration	Administrative Capabilities	Educational Administration and Technology	Teacher Training	Turkish and World Educational Systems	Other	f	%
Quantitative	16	16	16	3	2	11	-	11	4	3	6	6	94	61,0
Qualitative	4	5	9	3	5	4	4	3	3	5	9	6	60	39,0
Total	20	21	25	6	7	15	4	14	7	8	15	12	154	100

On analysing table 3, it is seen that quantitative research methods are preferred with the proportion 61% within 154 studies published in Turkey in the last five years. In particular, the studies on leadership, organizational culture, organizational management, organizational behaviour, and administrative capabilities are the ones that use quantitative research methods. There is not a trend to use the mixed type of methodology.

Table 4

Foreign Article Distribution In Terms of Their Methodology and Subject-Matter

	Qualitative	Quantitative	Mixed	Total
Leadership	11	15	5	138
	8			
School Effectiveness	30	16	2	48
Principalship	38	4	5	47
Administrative- Organizational Structure and Process Structure and Process	38	9		47
Politics of Education	39	3	1	43
Professional Preparation and Certification	38	4	1	43
Theory, Research and Practice	30	5	1	36
Society, Community and School	26	4	1	31
Professional Development	24	2		26
Teaching, Learning and Measurement	11	11	1	23
Reform	16		1	17
Change and Innovation	15	1	1	17
School Business and Finance	11	5		16
Supervision and Inspection	13	1	1	15
Decision Making	12	2		14
Educational Policies	12	1		13
Organizational Climate	7	3		10
Field or Study of Educational Administration	10			10
Others	10	6		16
Total f	498	92	20	610
%	81,7	15,1	3,2	100

Table 4 above shows the research subjects together with their methods used in the developed countries. In a detailed examination of Table 4, it appears with clarity that, in contrast to the research methods used in Turkey, developed countries mentioned in this article use qualitative research methods with a higher proportion, 81,7%, when almost any subject-matter is under investigation. Sometimes it is seen that the gap in percentages of qualitative and quantitative methods enlarges in certain

research topics such as Educational Programmes, Change and Innovation, Educational Policies. Another important finding here is that mixed-type research methods combining qualitative and quantitative, of which there is no use in Turkish research studies, are used regardlessly with a percentage of 3,2.

Comparison of Articles by Publication Years and Research Methodologies

Table 5 demonstrates the yearly distribution of research methods exploited by Turkish researchers.

Table 5

Turkish Article Distribution by Their Methodology Over Five Years

	Years										Total	
	2004		2005		2006		2007		2008			
	f	%	f	%	f	%	f	%	f	%	f	%
Quantitative	16	64,0	20	55,5	18	66,6	22	64,7	18	58,0	94	61,0
Qualitative	9	36,0	16	44,5	9	33,4	12	35,3	14	42,0	60	39,0
Total	25	100	36	100	27	100	34	100	32	100	154	100

Table 5 shows that there is a trend of a rise in total numbers of articles published over the years. Quantitative research methods in Turkey, ranging from the percentage of 55,5 to 66,6, are more preferred with a higher percentage, 61%, than other methodologies. Whereas qualitative ones are less used with 39%. However, it is observed that the rate of its use in research gradually increases over the years from 36% to 42%.

Table 6 demonstrates the yearly distribution of research methods used in investigations published in the United States, Australia, Canada and England. On analyzing the distribution of methods exploited in the research published in the last five years, it is seen that qualitative research methods have been intensively preferred in the investigations in spite of a relative differentiation in rates over the years, and quantitative ones range between the rates of 10.2 and 18.4 percent. There is also a small amount of naturalistic approach in the choice of methodology in the research.

Table 6

Foreign Article Distribution by Methodology Over Five Years

	Years										Total	
	2004		2005		2006		2007		2008			
	f	%	f	%	F	%	f	%	f	%	f	%
Quantitative	15	12,6	12	10,3	23	18,4	21	17,2	18	14,2	89	15,1
Qualitative	103	86,5	102	87,1	95	76,0	97	79,5	104	81,9	501	81,8
Mixed	1	0,9	3	2,6	7	5,6	4	3,3	5	3,9	20	3,1
Total	119	100	117	100	125	100	122	100	127	100	610	100

According to Murphy et al. (2007), in the Educational *Administration Quarterly,* there is a trend, since the 1980s, of using a qualitative approach in research, an average of 50%, while a quantitative approach is represented by 37%. There is also a high rate of mixed-type approach usage, exploiting both quantitative and qualitative, with the percentage of 12 on average. After the legitimatization of the qualitative approach in social science in the 1980s, in spite of the dominance of positivisticphilosophy in those years, there is an increasing rate of mixed-type approach in research as well. According to Gorard (2005), of the articles published in the English journal of *Educational Management and Administration (EMA),* 76% were qualitative method, and of those published in the *British Educational Research Journal (BERJ),* more than 35% were quantitative.

The comparison of the methods used in research both in Turkey and abroad proves that there is a tradition of qualitative method preference abroad over the last five years in contrast to the tradition in Turkey. The qualitative research approach seems not to be embraced by the Turkish academic community with exception of a small group. It is a small group because of its unchanging rate of usage. Turkey is still dealing overwhelmingly with quantitative relationships between the variables, and is less involved with the quality of the variables. Moreover, because of the lack of choice for qualitative ones, there is no usage of a naturalistic approach in Turkish research, in contrast to the examples abroad.

Comparison of Publications by Their Results

In this part of the study, the focus will be on the conclusions that articles have achieved. On analysing the conclusions of the articles written in Turkey, it is seen that the positivistic paradigm is highly dominant in performing research. These conclusions show that research is usually conducted to test the practical applications and aims to determine the relationships between the concepts, such as leadership –

job satisfaction. Research cannot supply a deeper knowledge base and produce a theoretical frame since the method in these researches is generally data-collecting through the use of questionnaires. Other disciplines such as Philosophy, Psychology, Sociology, and Anthropology cannot be effectively connected with the field and the concepts produced by these disciplines cannot be aligned with the field concepts. Thus, Educational Administration as a field is mostly mono-disciplined and one dimensional in terms of its conclusions which repeat and prove the prior ones. For this reason, a new and different knowledge in the field cannot be produced and further expanded.

Some important results achieved in the research done in Turkey are briefly as follows: Transformational leadership behaviours affect organizational leadership and teachers' levels of job satisfaction. School administrators mostly prefer a task-oriented leadership style. There exists in primary schools a highly developed school culture but only a medium level in secondary schools. It is frequently observed that there is a meaningful relation between school culture and school effectiveness. With respect to Total Quality Management, the level of commitment in the organization is very low. In educational inspection, teachers give high importance to the ethical issues. Both administrators and teachers view some organizational behaviour as very significant, such as open-mindedness, justice, moral cohesion, order, striving, improvement, initiative, kindness, social justice, creativeness, and harmony. Turkey fairly lacks theoretical knowledge production in educational administration. Administrators are inefficient in effective use of human resources and creation of positive school culture based on open dialogue. They also have difficulties in using a computer and its system software.

In general, the studies done abroad mostly focus on the difficulties of education and schools in meeting the changing social and economic conditions and also in producing effective theories and their effective applications, which mainly include the concept of leadership as a means of rescue. For the future of educational administration, beyond the familiar concepts and methods, it seems to be crucial to create a new field of study and for the researchers to investigate what has not been said yet. For this reason, it is important to utilize other disciplines such as Psychology, Sociology, Anthropology and Ontology and also to give priority to the use of interdisciplinary studies.

The important results obtained in the articles published in the four developed countries are briefly as follows: The barriers in front of the female administrators should be removed. Some administrative processes in which many school principals experience difficulties, would be improved through school administrators taking in-service training programmes to build skills such as culture exchange, effective communication, coping with the average personal issues, creation and sustentation of a positive image in public. Furthermore, new administrators should be taken into pre-service training to increase their awareness. School administrators' attitudes and acts towards teachers result in negative and harmful psychological impact on teachers. In human relations in schools, it is crucial to take justice as the main principle and to support and motivate the teachers. The parents' and teachers'

participation in administrative processes support effective decision-making. The leaders should be trained in such concepts as ethics, values, justice, equality and democracy. Professional development programmes should be prepared and implemented to increase the performances of both school leaders and teachers. Leadership training programmes should be standardized and include educational leadership, technological leadership and vision making.

In the studies of school effectiveness, some themes are underlined, such as the quality of education, leadership, information sharing with school environment, sustainability in professional development, parents' participation, environmental resources and support. In the studies of school climate, it is emphasized that personalities of teachers and administrators are effective in creating a positive climate in a school, whereby the level of teacher commitment and internalization increases exponentially and helps the quality of education improve. Many studies show that some concepts such as justice, equality and democracy in schools need to be emphasized.

Moreover, recent studies abroad demonstrate new trends in Educational Administration. These place emphasis on the organizational theory and critical theory, the reinterpretation of the concepts of organizational life and leadership from the viewpoint of quantum philosophy, interdisciplinary studies to produce new theories, theory development of moral leadership, development of different research methodologies and training of researchers about the new methods. It is also suggested that effective culture of learning organizations should be developed in order to implement change and innovation in schools accurately and a Professional Learning Community Model activated in innovative schools. It is important to evaluate the circumstances of the schools and then to develop new educational policies special to each unique school. In the proceess of educational reform, it is beneficial to create a democratic negotiation atmosphere and to consult different academicians from different disciplines to produce new and effective reform acts.

Conclusions and Recommendations

In conclusion to this study, it has been observed that, while subject-matter of research undertaken in the four developed countries covers a broader perspective, in Turkey most of the research repeats the same themes and uses the same research methods. In the field of Educational Administration, most of the studies focus on some popular issues such as leadership, organizational culture, organizational management and administrator capabilities. It can be easily interpreted that there is a huge communication gap among the Turkish researchers. In order to increase the impact of the research results to the field studies and practices, there emerges a strong desire to set up an effective coordination and cooperation between the researchers. One important matter of the debates on the production of theoretical knowledge is research methods. In developed countries, the positivistic impact on the research methods applied in the field studies has begun to fall and there has emerged a new trend including qualitative and mixed type (qualitative and

quantitative) method use in research. From the Turkish perspective, it is not possible to accept the existence of such a trend, there is a high impact of positivistic paradigm on the Turkish research instead, so quantitative research methods are still the most common in Turkey.

When the topics of the articles published in the developed countries are put under investigation, leadership research is the first in rank with the highest frequency, and most of these leadership studies use qualitative methods. Following the leadership studies, in turn, school effectiveness and improvement, principalship, administrative-organizational structure and processes are the topics most frequently studied in the field literature. Social issues generally stick out in these studies and some definite concepts such as social justice, morality and democracy are discussed most frequently. It has been determined by these studies that internalization of social justice and democracy is needed in schools and that these concepts should hold a large place in leadership models and leadership preparation programmes and also educational programmes in general. The studies that take place in the developed countries – the USA, England, Canada and Australia – have most frequently exploited qualitative research methods, however some researchers report that the field needs some new research methods.

In Turkey, educational policies, thought to be a prominent topic to study in educational administration research, has yet to be studied. This shows that Turkish researchers in Educational Administration are still under the dominance of a positivistic paradigm. Moreover, it is seen that the human factor is not taken into consideration in any research. Therefore the researchers in the field of Educational Administration should centralize some basic concepts such as justice, participation, human rights, and social responsibility in their social investigation, because the main responsibility of the schools should not be to continue the social structure and status quo, but to teach critical consciousness and virtuous living. Research should be built on a scientific understanding that accepts the role of subjectivism in the social construction in addition to the brave appeal against the chaos in the field.

Taking the conclusion of articles into consideration, in Turkey, it is seen that there is not a deep theoretical knowledge production but a high repetition in a way that the articles are written to test an existing practical knowledge. The conclusions derived from the research cannot be placed into a theoretical framework. On the contrary, the studies in educational administration as an interdisciplinary field mostly ignore other disciplines that deal with human nature, group dynamics, philosophy, sociology, psychology and anthropology but rather prefer to produce theoretical knowledge with a mono-disciplined, reductive and deterministic understanding under the positivistic influence of science.

The question that how much the research results contribute to the field of Educational Administration and how much the research mirrors the Turkish reality is controversial. It is proven that in Turkey, there is not a philosophical depth and an effective knowledge base. Furthermore, there is an increasing knowledge repetition rate and increasing gap between knowledge and its practice, and the field is under

the dominance of an authentic understanding of science. Educational Administration as a field should develop new alternative research methods in order to reach a more scientific and comprehensive perspective and should benefit from the concepts and systems of behavioural sciences.

Educational Administration programmes open in Turkey, should be evaluated to open new lessons regarding the social behavioural disciplines and the developments in social theories whereby Educational Administration research can be directed onto such social concepts as justice, values, equality, human rights, politics, language and culture. The field should start multi-dimensional research projects together with behavioural scientists like sociologists and psychologists. Educational Administration as a field directly related to human beings and life should focus on the increasing importance of the research on human nature, and should connect the concept of human nature to the research of culture, leadership, organizational behaviour, social change, and innovation. Furthermore, there is a strong sense of necessity for cooperation in order to increase the benefits of field research results and practice. Therefore, current phenomena and problems in the field should be approached from different perspectives, or paradigms, and be studied by different methodological techniques for the future field investigations and theories to be produced. In light of similar or different results achieved in the future, alternative research methods and new perspectives would be presented as well. Finally, departments of educational science should struggle, in a cooperative manner and in coordination on the university level, for the list of educational problems across Turkey requiring immediate attention, and for the production of scientific educational policies based on a certain educational theory. In other words, scientific studies and production of research results as well should be reorganized in order to maintain the order, integrity, and succession of the data achieved in the field.

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Eğitim Yönetimi Alanında Yayınlanan Makalelerin Konu, Yöntem ve Sonuçlar Açısından Karşılaştırılması

(Özet)

Problem Durumu: Disiplinler arası bir alan olan eğitim yönetimine ilişkin ülkemizde özellikle son yıllarda üretilen makalelerin ve tezlerin sayısında artış görülmektedir. Bu yayınların incelenip diğer ülkelerde yapılan çalışmalarla karşılaştırılmasının ve uygulamaya dönük sonuçlara ulaşılmasının, eğitim yönetimi alanının Türkiye'de hak ettiği yeri almasında önemli yararlar sağlayacaktır. Türkiye'de alandaki araştırmalarda, tek disiplinli, indirgemeci ve gerekirci bir bilim felsefesi anlayışıyla dar bir alanda bilgi üretilmektedir.

Postmodernizm, eğitim yönetimi alanındaki geliştirilmiş bütün teori ve yaklaşımları modernist olarak görmekte ve reddetmektedir. Postmodernite, eğitim yönetimi araştırmalarında ve uygulamalarında merkeze alınması gereken konuları, çoklu anlam, kültürel kimlikler, güç ilişkileri, eleştirel bilinç ve direnç, belirsizlik, katılım, sosyal sorumluluk ve dağılma kavramları çerçevesinde ifade etmektedir.

Çalışılan konular ve bulgular ışığında, eğitim yönetimi alanında dünyada birçok paradigmatik dönüşümler yaşanmıştır. Ancak Türkiye eğitim yönetimi alanındaki köklü paradigmatik dönüşümün çok gerisinde kalmakta ve her geçen gün fark kapatılamaz ölçüde açılmaktadır. Bu farkın kapatılabilmesi için özellikle son yıllarda gelişmiş ülkelerde yapılan çalışmaların değerlendirilmesi, eş zamanlı olarak ülkemizde yapılan araştırmalarla karşılaştırılması ve sonuçların yorumlanması, mevcut durumun aydınlatılması kadar araştırma politikalarının geleceğini belirlemek bağlamında yararlı olacaktır.

Araştırmanın Amacı: Bu çalışmanın amacı, eğitim yönetimi alanında araştırma konusu olarak seçilen problemleri belirlemektir. Araştırmada eğitim yönetimi alanına ilişkin hangi konuların tercih edildiği karşılaştırmalı olarak (Amerika, İngiltere, Kanada, Avustralya -Türkiye) belirlenmeye çalışılmıştır. Bu bağlamda, eğitim yönetimi alanında 2004–2008 yılları arasında Türkiye'de ve gelişmiş dört ülkede (Amerika, İngiltere, Kanada ve Avustralya) yayınlanan makaleler konu, yöntem ve sonuçlar açısından karşılaştırılarak değerlendirmiştir.

Araştırmanın Yöntemi: Çalışmada betimsel model kullanılmıştır. Araştırma evrenini, son beş yılda (2004-2008) alanla ilgili yayınlanan dergilerdeki makaleler oluşturmaktadır. Türkiye'de hakemli dergilerdeki ilgili makaleler (elektronik ortamda ulaşılabilen) ve gelişmiş dört ülkede bu alandaki en önemli dergilerde *(Educational Administration Quarterly (EAQ), Journal of Educational Administration (JEA), Canadian Journal of Educational Administration and Policy (CJEAP), School Effectiveness and School Improvement (SESI), Educational Management Administration and Leadership (EMAL))* yayınlanan makaleler taranmıştır. Makaleler, Türkiye ve gelişmiş dört ülke için konularına göre ayrı ayrı kategorileştirilmiştir. Kategoriler oluşturulurken, alanla ilgili kitaplardan ve daha önce yapılan çalışmalardan yararlanılmıştır.

Araştırmalarda kullanılan yöntemler nicel, nitel ve karma (nicel-nitel) olmak üzere üç kısımda incelenmiştir. Araştırmada verilerin analizi kısmında yüzde ve frekanslardan yararlanılmıştır. Çalışmada ilgili ülkeler açısından araştırma sayısı, kullanılan yöntem, konular ve araştırmalarda ulaşılan sonuçlara göre karşılaştırılmalar yapılmıştır.

Araştırmanın Bulguları: Türkiye'de son beş yılda özellikle örgüt yönetimi, örgüt kültürü, liderlik ve örgütsel davranış konularının çalışıldığı görülmektedir. Eğitim politikaları, eğitimin planlanması, değişim ve inovasyon gibi konularda Türkiye'de hemen hemen hiçbir çalışma yapılmadığı gözlenmektedir. Gelişmiş dört ülkede ise son beş yılda liderlik konulu çalışmalara büyük önem verildiği gözlenmektedir. Liderlik konulu çalışmalar, araştırmada değerlendirilen yayınların yaklaşık % 25'ini oluşturmaktadır. Liderlik dışında kalan çalışmalar arasında Okul etkililiği, yönetsel-örgütsel yapı ve süreçler, okul yöneticiliği, mesleğe hazırlama ve sertifikasyon, teori, araştırma ve uygulama gibi konular, diğer konu başlıklarına nazaran daha yüksek çalışma oranları ile ön plana çıkmaktadır.

Türkiye'de araştırmaların daha çok nicel yöntemle (% 61,0) yapıldığı görülmektedir. Son beş yılda yürütülen 154 çalışmanın 94'ü nicel, 60'ı nitel çalışmadır. Türkiye'de kullanılan araştırma yöntemlerinin tersine, yurt dışında çalışmaların büyük bir çoğunluğunun nitel yöntemlerle (% 81,7) yapıldığı ortaya çıkmaktadır. Türkiye'de pek yer verilmeyen nicel ve nitel yöntemlerin birlikte kullanıldığı karma çalışmalar yurtdışında azımsanmayacak oranda kullanılmaktadır.

Türkiye'de üretilen makalelerin sonuçları incelendiğinde özellikle pozitivist paradigmanın etkisi altında bilgi üretildiği gözlenmektedir. Sonuçlar, araştırmaların genellikle pratik uygulamaları test etmeye yönelik olarak yürütüldüğünü göstermektedir. Çalışmalarda sık sık kavramlar arasındaki ilişkilerin (liderlik-iş doyumu gibi) belirlenmesi amaçlanmaktadır. Araştırmalarda, verilerin genellikle anket yardımı ile toplanmasından dolayı, derinlemesine bilgi üretimi gerçekleştirilememekte ve çalışmalar kuramsal bir temele dayandırılamamaktadır. Felsefe, psikoloji, sosyoloji ve antropoloji gibi disiplinlerin dizge ve

kavramlarından yararlanılmadığı için tek disiplinli ve tek boyutlu sonuçlar elde edilebilmektedir. Sonuçlar genellikle, önceki araştırmaların sonuçlarını doğrular niteliktedir. Dolayısıyla yeni bilgi üretimi gerçekleştirilememektedir. Genel olarak yurtdışında yapılan çalışmalara bakıldığında, eğitimin ve okulların değişen toplumsal ve ekonomik koşullara uyum sağlamada zorluklarla karşılaştığı, gerekli etkin teorilerin ve pratik uygulamaların üretilmeye çalışıldığı, bu çalışmaların genel olarak liderlik kavramı etrafında yapıldığı ve bu kavramının bir kurtarıcı gibi algılandığı görülmektedir. Eğitim yönetiminin geleceği için daha farklı, bildik kavramların ve yöntemlerin ötesinde, yeni çalışma alanlarının yaratılması ve araştırmacıların söylenmeyenlerin peşine düşmeleri gerekmektedir.

Araştırmanın Sonuçları ve Öneriler: Yapılan inceleme sonucunda, gelişmiş ülkelerde göreli olarak konu seçiminde daha geniş bir perspektif söz konusu iken, Türkiye'de ise benzer konuların aynı araştırma yöntemleriyle ele alındığı görülmektedir. Gelişmiş dört ülkede, çoğunlukla nitel araştırma yöntemleri benimsenirken, Türkiye'de nicel yöntemlerin ağırlık kazandığı belirlenmiştir. Türkiye'deki çalışmalarda, kuramsal bilgi üretimi bakımından yeterli derinliğe ulaşılamadığı; daha çok pratik bilgilerin test edilmesi şeklinde dar bir perspektifle makalelerin yazıldığı görülmüştür. Öte yandan disiplinler arası bir alan olan eğitim yönetiminde grup dinamiği, insan doğası, felsefe, sosyoloji, psikoloji ve antropoloji gibi davranış bilimlerinden yeterince yararlanılmadığı, tek disiplinli ve indirgemeci bir anlayışla bilgi üretildiği gözlenmektedir.

Eğitim yönetimi alanı, daha kapsamlı ve bilimsel bir bakış açısına ulaşmak için alternatif araştırma yöntemleri geliştirmeli ve bu amaçla diğer davranış bilimlerinin kavram ve dizgelerinden yararlanmalıdır.

Türkiye'de eğitim yönetimi programlarında, davranış bilimlerinin çeşitli alanlarıyla ve sosyal teorideki gelişmelerle ilgili dersler açılabilir. Bu bağlamda, eğitim yönetimi araştırmaları daha çok adalet, değerler, eşitlik, insan hakları, demokrasi, politika, dil ve kültür gibi konulara yönelebilir. Sosyologlar ve psikologlar gibi davranış bilimcilerle çok boyutlu araştırma projeleri geliştirilmelidir.

Yaşam ve insanla doğrudan ilişkili olan eğitim yönetimi alanında yapılan çalışmalarda insan doğası konusu özel bir önem kazanmaktadır. Eğitim yönetimi alanı içindeki kültür, liderlik, örgütsel davranış, toplumsal değişme ve yenilik gibi araştırma konularında insan doğası kavramı üzerinde durulmalıdır.

Eğitim Bilimleri Bölümlerinin, ülke çapında üniversite düzeyinde eğitimin önemli sorunlarına ilişkin öncelik sıralamasını yansıtan ve belli bir kuramsal çerçeveye sahip bilim politikaları üretme ve bu bağlamda karşılıklı işbirliği ve eşgüdümü sağlamaya yönelik çaba göstermeleri gerekmektedir.

Anahtar Sözcükler: Eğitim yönetimi, eğitim politikaları, eğitim araştırmaları, eğitim yönetimi makaleleri

The Status of Research in Educational Administration: An Analysis of Educational Administration Journals, 1999-2007

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Abstract

Problem Statement: Investigating trends in published journal articles provides important insights into the changes in the field over time. There have been discussions regarding where the field should be heading in the academic community. This study attempts to provide a general overview of the field.

Purpose of Study: The objective of this article is to provide an analysis of articles in the field of Educational Administration based on 449 randomly selected empirical journals published in 13 Educational Administration Journals over a nine-year period, 1999-2007.

Methods: The approach is document analysis.

Findings and Results: The findings are presented under a) authorship patterns; b) literature reviews; c) methodologies; d) topics and subtopic.

Conclusions and Recommendations: A rise in qualitative research, leadership, and methodological weaknesses were addressed, and more studies on structural issues, as well as a review of research methodological trainings and journal article evaluation processes, were recommended.

Keywords: Educational administration, journal articles, trends and issues, empirical papers.

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The purpose of this study is to examine trends and issues of research on educational administration based on 449 randomly selected empirical articles in 13 educational administration journals (see Table 1). There have already been studies that focus on integrating research and knowledge in the most prestigious journal in the field, namely *Educational Administration Quarterly* (*EAQ*) (Balci, 1988; Byrd, 2007; Campbell, 1979; Haas, Hyle, Jordan, & Kearner, 2007; Mayo, Zirkel, Finger, 2006; Miskel & Sandlin, 1981; Murphy, Vriesenga, & Storey, 2007; Ogawa, Goldring, & Conley, 2000; Pounder & Johnson, 2007). There were also reviews that focused on the other prestigious journal in the field: *Journal of Educational Administration* (*JEA*) (Swafford, 1990).

The study of journal articles may provide important information on the nature of changes in the field. This type of study in educational administration provides important insights into where the field has been and what needs be done to improve the field. Previous studies either had a tendency to focus on topical areas (Ogawa *et al. 2000), one leading journal over a certain period (Balci, 1988; Bridges, 1982; Murphy et al, 2007; Swafford, 1990), a comparison of two leading journals (Miskel & Sandlin, 1981; Hoy, 1982) such as *EAQ* and *JEA,* or only in quantitative research tradition (Byrd, 2007). The current study plans to be the largest and most comprehensive study of empirical articles published in international journals, taking authorship patterns, various methodologies and procedures, topics, and citations into account.

Little or no research has been carried out on more than two journals in educational administration and/or topics with a random selection of several variables: Authorship patterns, literature reviews, methodologies, topics studied, unit of analysis, school levels, length of manuscripts, and citation patterns of the publications over a time period. This study attempts to fill this need. The following table displays the journals covered in this study and the countries in which they were published (see Table 1).

Method

Sample

The sample of the study included 449 empirical-only published articles in 13 educational administration journals from 1999 to 2007. A total of 2563 articles were published in these journals in the 9-year period. The largest number of articles was included from *IJEM (52)*, while from *EAQ* and *ISEA,* 50 articles were included from each. The journal with the least number of articles reviewed was *JEAH* with only 6 articles, representing 7% of all published articles in this journal.

The article sample selection process was as follows. First, the number of articles in each journal was determined. Each article was assigned a number. Then, a random number generator was used to randomly select articles from the journals. The initial goal was to select at least 20% of the articles. However, this was not possible in some

Table 1

Information on Educational Administration Journals and Articles in the Sample

Journal Name	Total # of Articles Published In the Journal	# of Articles in the Sample	% of Articles Included in Sample	% Articles Included in the Study
Educational Administration Quarterly (EAQ)(USA)	198	50	25.25	11.2
Journal of Educational Administration (JEA) (Australia)	276	27	10	17.2
Canadian Journal of Educational Administration & Policy (CJEAP)	55	10	18	2.2
School Effectiveness & School Improvement (SESI)(UK)	211	41	20	9.2
Educational Management & Administration (EMA)(UK)	209	39	19	8.7
Management in Education (ME)(UK)	276	20	7	4.5
The International Journal of Educational Management (IJEM)(UK)	301	52	17	11.6
School Leadership and Management (SL&M) (UK)	230	41	17	9.2
Theory and Practice in Educational Administration (TPEA)(Turkey)	198	40	21	8.9
The Journal of Educational Administration & History (JEAH)(UK)	82	6	7	1.3
International Studies in Educational Administration (ISEA)(Cyprus)	114	50	44	11.2
International Journal of Leadership in Education (IJLE)(UK)	186	43	23	9.6
Journal of Educational Change (JEC)(US)	227	29	13	6.5
Total	2563	449	17.05	100

cases since only empirical articles were to be selected. If the randomly selected article was not an empirical one, the next article was selected. If that article was also not an empirical one, the previous one was selected. The process was repeated until an empirical article was found. The unit of analysis in this paper was the article (449).

Results

This section includes reviews of the findings on authorship patterns, literature reviews, methodology, validity and reliability, unit of analysis, topics and sub-topics

studied, length of manuscripts, and citations. This study took only empirical articles (data-based). Conceptual studies were not included in this study.

Authorship Patterns

Information on the authorship patterns is presented with respect to number of authors, gender, academic position, institutional affiliation, departmental affiliation, and country of origin. Single authors published 42% (189) of the articles, 36% (162) were by two authors, and only 15% (70) were produced collaboratively by three authors. Only 2.2% of the published articles had four or more authors. When compared to *JEA* articles up to 1990, 73% of the articles were published by only one author, 24% were published by two authors, 1.8% were published by three authors, and 0.8% were published by four authors (Swafford, 1990). This may indicate that the trend towards collaboration may be on the rise among educational administration scholars. These findings confirm Price's predictions (O'Neill, 1998) that collaborative publications would eventually outnumber single author publications in research-based journals.

The first author's gender was male in 54.5% of cases (244) and female in 42% (188). The rest (3.5%) could not be determined. It may be acceptable to argue that there was a balance in terms of gender on authorship patterns in educational administration journals. This finding is consistent with the assertion by Murphy et al (2007) that one of the trends in educational administration was the increase of women in educational administration.

The breakdown of the position of the first author is as follows: 9% were Full Professors, while another 9% were Associate Professors. About 13% of the authors were Assistant Professors, and 3% were Lecturers. Almost 3% were principals, and 2% were graduate students.

In the current study, 23% of the first authors were affiliated with departments of educational administration, policy, and leadership. 15% of the authors' departmental affiliations were classified as "other," and the majority of author affiliations (55%) were not available in the journals. About 3% of the authors were affiliated with guidance and counseling, 2% with business administration, and 1.5% with curriculum and instruction. Since the current study failed to determine the majority of authors' institutional affiliations, there is no need to compare them. However, 92% of the authors published in *JEA* were in colleges and universities, while the figure is 77% in the current study. 87.5% of the authors' institutional affiliations were schools and departments of education (Swafford, 1990).

The origin of one-fourth (115) of all published articles was the US. The UK followed with 17% (74), then Canada's 8%, Australia's 6%, Israel's 4.5%, Turkey's 4%, Hong Kong's 3.7%, the Netherlands' 3%, and New Zealand's 2%. The country of origin was not reported only in 3.5% of the articles. A total of 34% of all published articles were produced in North America (USA and Canada), compared to 38% in Europe. 13% of articles were produced in Asia, and only 3% in Africa.

Literature Reviews

The literature reviewed was assessed on a four-point Likert-type scale (1= weak, 2=medium, 3= strong, 4=superior) (Boote & Beile, 2005). The reviewers trained by working on example articles and agreeing what each one of these scale points meant. One researcher reviewed and assigned a value on a scale of 1 to 4. A second person also reviewed the section independently of the first reviewer. Thus, the literature section of each article was reviewed by two researchers. Then, the inter-rater reliabilities were calculated. 32% of articles were found to have superior literature reviews, and a high proportion of the articles were found to have strong literature reviews. While one-fourth (25%) of the articles had medium level, only 10% had weak literature reviews. Based on these results, 65% of the articles had either strong or superior literature reviews.

Findings

Qualitative research methods have been prevalent in educational administration articles. Almost half of all articles in the sample (46%) used qualitative research methods, while 37% (167) used quantitative research methods. About 16% (70) used both qualitative and quantitative research methods. Contrary to Bridges (1982), Miskel and Sandlin (1982), and Knapp (1982), the dominant paradigm was not positivism. This finding is consistent with the finding by Murphy et al. (2007) indicating positivism was not the "sole intellectual baggage" in educational administration. Pounder and Johnson (2007) noted that *EAQ* had a policy of treating manuscripts equally. Moreover, Byrd (2007) indicated that 70% of the articles published in *EAQ* used qualitative research methods. However, Byrd pointed out a trend in which quantitative studies were on the rise. 76% of the articles in *EMA* and 67% of the articles in *SL&M* used only qualitative approach (Gorard, 2005).

In this study, 65% (290) of articles were of the correlational type, while 10% (46) were case studies. 4% of the articles were descriptive, and 7% of the studies were experimental. About 4% were quasi-experimental, 3% with randomization and 1% without randomization. Only about 3% were experimental studies. Bridges (1982) pointed out that over 90% of the studies used survey research and there were more experimental studies than case studies. However, these findings were quite different compared to that of Bridges (1982) since almost half of the studies in the current sample of studies (46%) used qualitative research methods, indicating a major shift in the research methods since 1982. The findings of this study support the contention by Murphy et al (2007) that the majority of studies use qualitative research methods.

Concerning data collection methods, about 44% (195) of the studies used a survey or a questionnaire, while 32% (141) used interviews. About 11% used interviews and video data. About 6% used document analysis and observation. The rest (15%) used a combination of data collection methods. Bridges (1982) reported that studies at that time overwhelmingly relied on questionnaires (89.7%). Even if survey-only (44%) and multiple data collection method (15%) studies were included,

a little less than two-thirds (59%) relied on the survey or questionnaire in data collection. Balcı (1988) found that survey research was dominant in *EAQ* articles from 1970 to 1985. In each period Swafford (1990) reviewed, half of the articles used a survey research method. However, the findings of this study indicated that 44% of the studies in this sample used a survey or questionnaire. This percentage was 65% in Murphy et al. (2007).

When qualitative studies were considered, content analysis was dominant. Content analysis was the major procedure used in qualitative research (35%). A case study was used in about 4% of the studies, while the comparative study method was used in 2% of the research. This finding is along the same lines as in the Murphy et al. (2007).

Among the studies that used only one procedure, 4% of the studies used case analysis. 3% of the studies used regression, 2.7% HLM, and 2.7% comparative study. Almost 20% of the studies used one or more of quantitative and/or qualitative procedures. Murphy et al. (2000) found that 16% of the studies used mixed methods. The current study's findings pointed to a similar trend with 20%.

Table 2

Primary Choice of Procedures used in Educational Administration Journals

Procedure	Frequency	Percent
Qualitative	186	41.5
Descriptive	125	27.9
t-test	31	6.9
Factor Analysis	18	4.0
Regression	18	4.0
HLM	13	2.9
Correlation	8	1.8
One-Way ANOVA	7	1.6
Chi-square	6	1.3
MANOVA	6	1.3
Path Analysis	3	0.7
Two-Way ANOVA	2	0.4
ANCOVA	2	0.4
SEM	2	0.4
Discriminant Analysis	2	0.4
Three-Way ANOVA	1	0.2
Gap Analysis	1	0.2
Social Network Analy.	1	0.2
Not Reported	13	2.9
Total	448	100.0

When primary statistics utilized in educational administration are examined, almost half of the studies (47.7%) used descriptive statistics (see Table 3). The second

most popular method was t-tests (11.8%). Surprisingly, regression and factor analysis tied as the third most frequently used methods. ANOVA (one-, two-, and three-way together) was about 4%. Correlation was 3%, MANOVA 2.3%, Cluster Analysis and Path Analysis 1.1%, and ANCOVA and SEM were each 0.8%, respectively.

Table 3

Quantitative Methods Utilized in Educational Administration Journals

Procedure	Frequency	Percent
Descriptive	125	47.7
t-test	31	11.8
Regression	18	6.9
Factor Analysis	18	6.9
HLM	13	5.0
Correlation	8	3.1
One- Way ANOVA	7	2.7
MANOVA	6	2.3
Chi-Square	3	1.1
Path Analysis	3	1.1
Cluster Analysis	3	1.1
SEM	2	0.8
Discriminant Analysis	2	0.8
Gap Analysis	1	0.4
Social-Network Analy.	1	0.4
Not Reported	13	5.0
Total	448	100.0

When we look at the 20% of studies that used more than one procedure, either qualitative, quantitative, or both, the following can be gleaned from the findings: 37 studies used two or more procedures. Of those, 14 used only two procedures, and 16 used three procedures together. The number of studies that used four procedures was 7.

Among all the publications, when only studies that used qualitative research are taken into account, content analysis was the most preferred approach with 35% (141), followed by case study with 4% (19). Further analyses of the procedures were conducted. If a study used more than one method and if the study used non-parametric, bivariate-univariate, multivariate, and/or qualitative methods, they were classified under whatever procedure was used other than descriptive statistics. The following trend emerged: 45% (201) used qualitative procedures, 22% (97) used descriptive, 19% (85) multivariate, 10% (45) bivariate-univariate, and (6) 1.3% used non-parametric procedures. As a result, one-fifth of all published articles used a multivariate procedure, and they were almost twice as many as those using bivariate-univariate procedures. Non-parametric procedures were scarcely used.

Miskel and Sandlin (1981) did not find either *EAQ* or *JEA* articles

methodologically strong. Among the quantitative procedures, there were almost twice as many multivariate procedures than bivariate-univariate procedures (19% versus 10%). This finding might indicate that educational administration has been "somewhat successful" using advanced design and analysis procedures, as Murphy et al. (2007) and Pounder and Johnson (2007) have contended. However, Heck and Hallinger (2005, p.229) say that "lack of empirical rigor" hampers the development of a new generation of scholars in educational administration. Although there were more robust methodologies available, the number of empirical articles decreased over time. Moreover, the lack of critical methodological comparisons left researchers, policy-makers, and practitioners without useful and valid findings. Gorard (2005) reported that in 2002, almost one-third of the articles were not empirical in *EMA* and *SLM*.

Validity and Reliability

A large majority of the studies in educational administration journals did not report reliability and validity statistics. When qualitative 207 papers were excluded, 128 studies did not report validity procedures. Almost one-third of the quantitative studies did not report validity at all. Overall, more than one-fourth of all studies in the sample did not report how validity was established. Cronbach Alpha was reported as the most frequent validity procedure at 12.3% (55). Exploratory Factor Analysis was the second most widely-preferred validity procedure, followed by Pearson correlation with 3.3% (14). While Confirmatory Factor Analysis (CFA) was the fourth most common validity procedure, Split-Half was the least utilized procedure.

Table 4

Validity and Reliability Procedures Reported in Educational Administration Journals

Validity and Reliability Procedures Reported in Educational Administration Journals.

Procedure	Validity		Reliability	
	Frequency	Percent	Frequency	Percent
Cronbach Alpha	55	12.3	102	22.8
Exploratory Factor Analysis	27	6.0	NA	NA
Confirmatory Factor Analysis (CFA)	14	3.1	NA	NA
Correlation	15	3.3	14	3.1
KR 20	NA	NA	2	0.4
KR 21	NA	NA	7	1.6
Split-Half	NA	NA	3	0.8
Not Reported	335	74.8	335	71.9
TOTAL	448	100.0	448	100.0

A large number of studies did not report how validity and reliability were

established. Even without taking qualitative studies into account (46%), almost one-third of the studies did not report validity and reliability statistics. Educational administration journals should require manuscripts report validity and reliability procedures in the articles accepted for publication.

Topics and Subtopics Studied

"Leadership" was the most frequently studied general topic in the journals with almost 16% (70) of the articles studying this topic (see Table 5). "Teaching, Learning and Testing" ranked second with 12.3% (55), and "Principalship" followed by a close margin with 12.1% (54). "Community, Society, and School" was the fourth most frequently studied general topic with 7.6% (34), while "Administrative-Organizational Structure" followed with 6.7% (30), followed by "Professional and Staff Development" with 5.4% (24 articles) and "Policies and Programs" with 4.2% (19) (see Table 5). Bridges (1982) found that nearly three-fourths of the studies reviewed focused on principals and superintendents. In this study, "Leadership," "Principalship," and "Professional and "Staff Development" together constituted a little over one-third of the articles. Ogawa et al. (2000) reported that the most frequently published general topics were "Teaching, Learning, and Testing," "Professional Preparation and Certification," "Curriculum, Special Needs and Programs," and "Community, Society, and Schools," respectively. When only Educational Administration Abstracts (EAA) was used, although their rankings changed, these five general topics came up again with only one difference: "Professional Preparation and Certification" was replaced by "Administrative Structure and Process." Although Ogawa et al.'s focus was broader because they used EAA along with Educational Resources Information Center (ERIC) and this study had a narrower focus on educational administration journals, the current study came up with a different set of the five most frequently studied general topics. The following three topics were different, two topics made it in this study's top-five list: "Teaching, Learning, and Testing," "Community, Society, and School," "Leadership," "Principalship," and "Administrative-Organizational Structure and Processes." "Administrative-Organizational Structure and Processes" made it into Ogawa et al.'s list when ERIC documents were concerned, replacing "Professional Preparation and Certification." "Curriculum and Special Needs and Programs" were in the list in both EAA and ERIC databases.

In *JEA,* "The Field of Educational Administration," "Organizational Structure," "Principalship," and "Organizational Climate" were the most frequently published topics among the ten topical areas used by Swafford (1990). It is interesting to note that "Teaching and Learning and Community" and "Society and School" were not among the ten topic areas Swafford used. "Leadership," "Principalship," and "Organizational Structure" were also among the most studied five topics in the current study.

The least studied general topics in the current study were "Reforms," "Special Needs Programs," "Counseling and Guidance," "Professional Preparation and

Table 5

General Topics Published in Educational Administration Journals

Topics	Frequency	Percent
Leadership	70	15.6
Teaching, Learning and Testing	55	12.3
Principalship	54	12.1
Community, Society, and School	34	7.6
Administrative-Org. Structure & Processes	30	6.7
Professional and Staff Development	24	5.4
Policies and Programs	19	4.2
School Effectiveness	17	3.8
Organizational Climate	16	3.6
Theory, Research, and Practice	15	3.3
Field or Study of Educational Administration	14	3.1
Change and Innovation	14	3.1
School Business and Finance	11	2.5
Curriculum	11	2.5
Politics of Education	9	2.0
Decision-making	7	1.6
Supervision and Inspection	7	1.6
Comparative Analysis of Countries/Systems	6	1.3
Attitude Formation and Change	4	0.9
Student Assessment and Evaluation	4	0.9
Professional Preparation and Certification	3	0.7
Facilities, Equipment and Materials	3	0.7
Counseling and Guidance	2	0.4
Special Needs Programs	2	0.4
Reform	1	0.2
Other	14	3.1

Certification," "Facilities, Equipment and Materials," and "Attitude Formation and Change," respectively. Studies that focused on "Reforms" were represented by only 1 article, while "Special Needs Programs" and "Guidance and Counseling" had 2 articles each. For Professional Preparation along with Facilities, "Equipment and Materials" there were 3 articles. "Professional Preparation Certification" also had 3 articles. The articles on "Special Needs and Programs" changed dramatically. Both "Special Needs and Programs" and "Professional Preparation and Certification" were among the top five most frequently studied topics in Ogawa et al. (2000); however, both were among the least studied five topics in the current study. The reason for this change might be that we focused only on educational administration journals. And Ogawa focused on, when both EAA and ERIC lists were considered, the list of least studied topics included "Policies and Programs," "Counseling and Guidance," "Government and Law," "School Business and Finance,"and "Facilities, Equipment, and Materials." When compared to the least studied general topics in this study, only two out of five topics were the same: "Facilities, Equipment and Materials," and "Counseling and Guidance." While "Policies and Programs,"

Table 6

Sub-topics Published in Educational Administration Journals

Sub-topics	Frequency	Percent
Administrative Roles	48	10.7
Leadership	47	10.5
School and Community	35	7.8
Organization and Processes	28	6.3
Staff Development	26	5.8
Teaching Methods and Evaluation	25	5.6
Research	21	4.7
Teacher Education	19	4.2
Administrator Development	17	3.8
Policy-Making and Implementation	16	3.6
School Culture	14	3.1
Program Evaluation	11	2.5
Administrator Training	10	2.2
Student Performance and Behavior	10	2.2
Multi-Ethnic Relations	9	2.0
Gender Relations	9	2.0
Health Services	9	2.0
Curriculum General Issues	8	1.8
Institutional Levels: Adult ant Post-secondary	7	1.6
Equipment, Materials, and Technology	7	1.6
Professional Roles and Collegial Relations	7	1.6
Student Testing and Evaluation	7	1.6
Classroom Management	6	1.3
Learning Processes	6	1.3
School Effectiveness	5	1.1
Managing Improvement	5	1.1
Students with Disabilities	5	1.1
Student Admissions	4	0.9
School Quality	3	0.7
Value Orientations	3	0.7
Professional Issues	3	0.7
Program Planning and Implementation	2	0.4
Educational Facilities	2	0.4
Salaries	2	0.4
At-risk Students	2	0.4
Non-teaching Staff Evaluation	1	0.2
Personnel Recruitment	1	0.2
Literacy Programs	1	0.2
Student Assessment and Guidance	1	0.2
Student Personnel Management	1	0.2
Other	5	1.1
Total	448	100.0

"Government and Law," and "School Business and Finance" made the list in the study by Ogawa et al. (2000), they were replaced by "Special Needs Programs," "Professional Preparation and Certification," and "Reform." The only change in Ogawa and colleagues (2000) list of EAA (only least studied five) was "Government and Law" replaced by "Professional and Staff Development." As a result, there was only one difference between the least studied five topics in this study and that by Ogawa and colleauges' study, which was that "Theory, Research, and Practice" in their list was replaced by "Reform."

The current study's ten most frequently studied topics were: "Administrative Roles," "Leadership," "School and Community," "Organization and Processes," "Staff Development," "Teaching Methods and Evaluation," "Research," "Teacher Education," "Administrator Development," and "Policy-Making and Implementation" (see Table 5). When compared to the list of most frequently studied topics and subtopics compiled by Ogawa et al. (2000), the current study's list was quite different. Only two subtopics were the same when ERIC and EAA were taken into account ("Teacher Education" and "School and Community") while only one subtopic was in their EAA-only list ("Teacher Education"). As a result, the most frequently studied subtopics in this study were quite different from those in Ogawa et al. (2000).

The least-frequently studied topics included "Professional Issues," "Program Planning and Implementation," "Educational Facilities," "Salaries," "At-risk Students," "Non-teaching Staff Evaluation," "Personnel Recruitment," "Literacy Programs," "Student Assessment and Guidance," and "Student Personnel Management" (see Table 6). When compared to the list of least-studied subtopics on both ERIC and EAA compiled by Ogawa et al. (2000), four out of ten subtopics were the same. These subtopics were "Professional Issues," "Program Planning and Implementation," "Personnel Recruitment," and "Educational Facilities." When their EAA-only list was taken into account, half of the subtopics in the list were the same: "Non-teaching Staff Evaluation," "Professional Issues," "Salaries," "Literacy Programs," and "Student Assessment and Guidance," While only five articles mentioned the focus of the study clearly in *EAQ*, none of the articles in *JEA* clearly articulate the focus of the study. Heck and Hallinger (2005) claimed that when compared to the past, there is now less agreement on the important issues scholars need to study.

Discussion and Conclusion

One of the strengths of the current study was the random selection of the empirical articles. This helped with the generalizability of results. Secondly, the study also sheds light on which research tradition prevails in educational administration and which validity and reliability procedures have been utilized in the published articles. Moreover, the study included more than one mode of research. This study presented not only the primary choice of procedures used in the articles but also tracked and reported second, third, and fourth choices of procedures where available.

The number of articles with one author was lower than found in Swafford's (1990) study in educational administration, showing that the number of articles with one author has decreased over time. Surprisingly, assistant professors were not the most productive group. The percentage of publications by associate and full professors was higher than authors in *JEA*. In this study, the number of publications by assistant professors was found to be a little higher than full and associate professors.

While the US, Canada, and Australia produced 40% of all articles in the current study, these countries published 80% of the manuscripts in *JEA (*Swafford, 1990). When the publications in this study were taken into account, the most were from the US, followed by the UK, Australia, and Canada, respectively. These four countries produced 58% of all publications in this study.

The rise in publication by females in educational administration journals was certainly one of the main trends identified in this study. This has also been the case in the most prestigious journals. The result of this study confirms the findings of previous studies.

Only the current study reviewed the literature sections of articles in educational administration. Almost one-third (32%) of all literature reviews in the articles were found to be superior. 65% of all articles were found to have either superior or stronger literature reviews. One-fourth of articles had medium literature reviews. Only 10% of the manuscripts were weak. Although it was not possible to compare with earlier studies, educational administration journals published manuscripts that had relatively good reviews of the other works in the field.

A second main trend was the rise and prevalence of qualitative research methods (Murphy et al., 2007). In 1982, less than 10% of the research was experimental or case studies, and there were more experimental studies than the case studies. From then until 2007, almost half of the studies (46%) were qualitatively oriented. This trend points to a big change in research methodology. 25 years after Bridges, although some things might have been changed little, with the help of computers, there has been a major change in the methodologies employed in the studies. In *JEA,* half of the published articles used survey research methods. This may mean a paradigm shift in educational administration or as Donmoyer (1999) claimed, "The Changing Educational Landscape."

One issue to be addressed is the reporting of validity and reliability in articles in educational administration journals. Almost one-third of the studies, excluding qualitative research, did not report whether the use of instruments was valid and reliable or not. Journals in educational administration should be more disciplined on validity and reliability issues regardless of the methodology used. These findings were consistent with Knapp (1982) and Balci (1988).

Although institutional affiliations could not be determined for 56% of the authors, the following assumption could be made: Research in educational administration could be classified as informal-loose, based on classifications by Ogawa et al. (2000), because while working at their own institutions, educational

administration scholars usually work on their shared interests rather than projects. As a result, it is difficult to advance the field without having strong research or policy centers. This picture might have been different if the current study had included educational policy journals.

When the five most frequently studied topics were compared to those on the EAA-only list by Ogawa et al. (2000), there was only one exception. Thus, it is safe to argue that the least frequently studied topics have remained stable since 1995-1996. When considering the most frequently studied topics by Ogawa et al. (2000), the current study found a change of two topics: "Leadership" and "Principalship" replaced "Curriculum" and "Special Needs and Programs." Again, it might be claimed that educational administration topics replaced the other educational science topics.

"Leadership" emerged as a third main trend in educational administration journals. Bridges in 1982 and Swafford in 1990 did not report leadership as an independent category in *EAQ* and *JEA*. Bridges in 1982 found that almost three-fourths of the studies reviewed focused on "Principals and Superintendents." Moreover, leadership was not included in Ogawa et al.'s list in 2003. In this study, though, "Leadership" constituted the most studied topic in educational administration journals. In fact, "Leadership," "Principalship," and "Professional and Staff Development" together constituted a little over one-third of the articles. These findings indicate a big shift in the study of topics in educational administration journals. Educational administration research recently focused on more individuals than structural issues. This might be pointing out a danger since Deming claims 85% of issues in organizations are usually stems from structural issues.

Another dramatic shift was in "Curriculum, Special Needs and Programs" in the Ogawa et al. (2000) study. This topic did not emerge among the most-studied topics when all the journals were taken into account. The reason for that might be faculty members and educational policies being less concerned with "Special Needs and Programs." Willower and Forsyth (1999) argued that among the philosophical issues, such as knowledge and ethics, women and minorities received the most attention. However, it is possible that these topics may have been published in more specialized journals.

Similarly, the lack of studies on equity issues, such as school finance, law, human resources management, and labor studies, constituted a major trend. This finding is problematic since the increase in the number of critical studies in educational administration (Willower & Forsyth, 1999) did not lead to an increase in the studies on equity issues. Again, one reason for this might be these issues might have been published in educational policy journals.

Moreover, some topics received very little attention. Among these topics were "Attitude Formation and Change," "Student Assessment and Evaluation," "Professional Preparation and Certification," "Facilities, Equipment and Materials," "Counseling and Guidance," "Special Needs Programs," and "Reform." Each one of these topics received less than 1% coverage in educational administration journals.

The question remains whether educational administration journals have stopped paying attention to these issues.

How do these topics differ? Could the shift in the topics be dependent on cultural differences? "Leadership" received highest attention from UK-based publications with 34%. Australia-based publications followed UK-based publications on "Leadership" with 29% of the publications on this topic. The percentage of Canada-based "Leaderhip" studies was ranked third, with 16% the Canada-based publications dealt with leadership. "Principalship" received the most attention, with 14% of US-based publications, while "Leadership" and "Teaching, Learning, and Testing" followed with 12% each. However, other countries' publications did not pay much attention to "Leadership" as evident in these countries. Concerning "Leadership," a diffusion of knowledge did not take place. A cautionary note is needed here because just the North American contribution to these journals was 35%.

However, when subtopics were considered, there were more differences, especially in the most frequently studied subtopics. The current study's subtopics were strikingly different from those of Ogawa et al. (2000). Although there were similarities among the most frequently studied five general topics, there was little correspondence between subtopics. Only two subtopics, "Teacher Education" and "School and Community," were similar to those found by Ogawa et al. (2000) on the ERIC and EAA lists, and only one subtopic was the same as their EAA-only list: "Teacher Education."

Half of the current study's least studied subtopics were the same as that of the EAA-only list by Ogawa et al. (2000), while four out of ten subtopics made the list in the current study. These findings indicate that the most frequently studied subtopics have changed considerably, while the least frequently studied subtopics have persisted relatively more over time. The reason for this might be that the current study had a more international focus than the study by Ogawa et al. In *JEA*, three of the most studied topics were the same as the current study: "Leadership," "Principalship," and "Organizational Structure." However, "Teaching and Learning" and "School and Community" did not manage to make it into the top-ten list in this study.

The findings of this study with regard to the topics and subtopics do not support the argument by Ogawa et al. (2000) that "...we learned that researchers focus on common topics but that the focal topics change fairly quickly." The findings of this study indicate that though the topics were relatively stable, subtopics tended to change fairly quickly; this was especially the case concerning the most frequently studied topics. For example, in the case of "Leadership," the findings of this study conflict with the Ogawa et al. study.

One of the limitations of this study was that it only dealt with empirical (data-based) articles. Conceptual articles were not taken into account. The current study also did not include unpublished manuscripts, dissertations, or reports. Some of the dissertations may eventually be published, though some of them may not be published at all.

Implications for Future

Research methodology courses in graduate training as well as journals in educational administration should be revised and revision process should be made more rigorous. The content of the courses should be revised to provide more emphasis on sampling issues. The skills in designing and conducting longitudinal and multi-level studies should be taught. Validity and reliability should receive greater attention in the graduate training of future educational administration scholars.

Although the topic of "Leadership" received the largest attention by US, UK, and Canada based publications in the journals, this has not been the case in the contributions of the other countries in the journals. Therefore, there might be issues in the diffusion of knowledge in educational administration research. This may have implications for creating and maintaining the knowledge base in educational administration.

A special treatment for qualitative studies is needed. This study was unable to pay detailed attention to qualitative research methods as much as it did for quantitative studies. Since almost half of the studies were qualitative, this research methodology deserves a more in-depth methodological focus.

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Eğitim Yönetimi Araştırmalarının Durumu: Eğitim Yönetimi Dergilerinin Analizi, 1999-2007

(Özet)

Problem Durumu: Dergi makalelerini incelemeye ilişkin çalışmalar, alandaki değişimler hakkında önemli bilgiler sunmaktadır. Eğitim Yönetimindeki bu tür çalışmalar, alanın mevcut durumunu belirlemek ve alanın geliştirilebilmesi için ihtiyaçların belirlenmesi için önemli bakış açıları kazandırır. Eğitim yönetimi alanındaki çalışmaları değerlendirmek amacıyla yapılan birçok değerli araştırma bulunmaktadır. Bu araştırmalar çoğunlukla birkaç değişkeni ve sadece en prestijli birkaç dergiyi ele almıştır.

Araştırmanın Amacı: Bu araştırmanın amacı, eğitim yönetimi alanında 1999-2007 yılları arasında yayınlanan 13 ampirik eğitim yönetimi dergisinden rastgele seçilen 449 makalenin yazar, literatür, yöntem, konu, kullanılan kaynak sayısı, sayfa sayısı, analiz ünitesi gibi değişkenler açısından analiz ederek, alandaki en kapsamlı araştırma olarak, eğitim yönetimi alanındaki çalışmaların durumunu ortaya koyarak, gelecek çalışmalara ışık tutmaktır.

Araştırmanın Yöntemi: Araştırma yöntemi meta-analizdir. Doküman analizi yapılmıştır. Araştırmanın örneklemi belirlenirken ilk olarak dergilerdeki makale sayıları tespit edilmiştir. Bu makalelerin içinden örnekleme alınan makaleler yansız seçilmiştir. Örneklemi oluşturmak için seçim yaparken öncelikle dergilerin en az %20'sinin temsil edilmesi amaçlanmıştır. Örnekleme sadece ampirik araştırmalar dahil edilmiştir. Bu nedenle eğer, yansız seçilen makale ampirik değilse diğer makaleye geçilmiştir. Eğer bir sonraki makale de ampirik değilse, yansız seçilen ilk makaleden bir önceki makale seçilmiştir. Bu çalışmanın analiz ünitesi makaledir.

*Araştırmanın Bulguları:*Araştırmanın bulguları a) yazar b) literatür taraması c) yöntem d) konu ve alt konular açısından tespit edilmiştir. Sonuçların ortaya koyulmasında frekans ve yüzde gibi istatistiksel hesaplamalar yapılmıştır.

Genel olarak, eğitim-yönetimi dergilerinde literatür taramalarının nitelikleri yüksektir. Ortak çalışmaların sayıları ve nitel araştırmaların sayısı artsa da, örneklem belirlemeye ilişkin bilgiler açık değildir. Alanda daha çok betimsel ve ilişkisel çalışmalar baskındır. Çalışmaların geçerliliği ve güvenirliliği büyük oranda belirtilmemiştir. Analiz ünitesi uygun şekilde açıklanmamıştır fakat makalelerin kaynak sayılarına ve sayfa numaralarına ulaşılabilinmektedir. Araştırmada incelenen makalelerin büyük çoğunluğunda, okul büyüklüğü, okulun nerede bulunduğu, özel okul mu devlet okulu mu olduğuna dair açık bilgi bulunmamaktadır.

Tek yazarlı makale sayısının azaldığı görülmüştür. Yardımcı doçentlerin yayın konusunda en üretken grup olmaması şaşırtıcı bir sonuçtur. Bu çalışmada yardımcı doçentlerin yayın sayısı, doçent ve profesörlerden çok az oranda fazladır.

Bu çalışmada belirlenen başlıca temel yönelimlerden birisi, kadınların yayın sayısındaki artıştır. Bu durum en prestijli dergiler için de söz konusudur. Makalelerde ilk yazarlar en çok " eğitim yönetimi", "politika" ve "liderlik" alanında görev yapmaktadırlar. Yazarların %25'i Amerika kökenlidir. Asya ve Afrika kökenli yazar sayısı en azdır.

Makalelerdeki literatürlerin değerlendirilmesinde, 1-4 arası Likert tipi puanlama kullanılmıştır. Puanlama yapılırken araştırmacılar birbirlerinden bağımsız olarak aynı makaleyi değerlendirmişlerdir. Daha sonra hakemler arası tutarlılığa bakılmıştır. Makalelerin literatürleri büyük oranda güçlü bulunmuştur.

Liderlik %16 oranla dergilerde en sık çalışılan genel konudur. "Öğretme,

Öğrenme ve Ölçme" ikinci sırada ve hemen ardından çok az farkla "Yöneticilik" konusu üçüncü sırada makalelerde ele alınan konulardandır. En az çalışılan genel konular ise "reform", "özel eğitim programları", "danışma ve rehberlik", "uzman yetiştirme", "donanım ve material" tutum oluşturma ve değiştirme konularıdır. Dergilerdeki makalelerin geçerlilik güvenirlilik çalışmaları için en çok Cronbach Alpha kullanılmıştır.

Makalelerde en çok yer alan alt konular, "yönetici rolleri, liderlik, okul ve toplum" konularındadır. En az değinilen alt konu ise, "öğrencinin kişisel gelişimi"dir. Makalelerde en çok nitel araştırma yöntemleri kullanılmıştır. Ayrıca, çalışmaların %16'sı nicel ve nitel yöntemleri bir arada kullanmıştır.

Dergilerde analiz ünitesi olarak en çok okul alınmıştır. Dergilerde okul düzeyi en çok üniversite ve ilköğretim düzeyindedir. En az okul öncesi kurumlarda araştırma yapılmıştır. İncelenen makalelerin kaynak sayısı ortalama olarak 40'tır. Makalelerin sayfa aralığı ise 4-58 sayfa arasındadır.

Araştırmanın Sonuçları ve Önerileri: Eğitim yönetimindeki bilim adamları, eğilim ve konulara dayalı olarak yeni alanlar bulabilmek için alana tekrar odaklanmalıdırlar. Dergiler makalelerin yayınlanması için, açık kurallar ve değerlendirmeler ortaya koymalıdır. Bütün dergiler sağlam araştırma yöntemlerini kullanmalıdır. Teorinin ve metodun her ikisinin de gelişmesi için, ampirik çalışmalar desteklenmelidir. Eğitim yönetimi dergileri, kullanılan yönteme ilişkin geçerlilik ve güvenirliğin belirtilmesi konusunda daha disiplinli olmalıdır.

"Liderlik" konu başlığı dergilerde en geniş yeri bulsa da, bu geri kalan dergilerdeki tüm ülkeler için aynı değildir. Bu nedenle eğitim yönetimi araştırmalarındaki bilginin yayılması ve paylaşılması konusunda sorunlar mevcut olabilir. Eğitim yönetimi dergilerinde çok az yer verilen bazı konular eğitim politikaları ile dergilerde yer almış olabilir.

Anahtar Sözcükler: Eğitim yönetimi, dergi makaleleri, yönelimler ve sorunlar, ampirik çalışmalar

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Motivators and Barriers in the Development of Online Communities of Practice*

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Abstract

Problem statement: Recently, online Communities of Practice have become a very popular teaching method in teachers' professional development. However, keeping teachers active in these learning environments is a very challenging process. Therefore, investigating this challenge is critical for designing effective online Community of Practice (oCoP) environments for teachers' professional development.

The purpose of the study: This study aims to reveal possible motivators and barriers in the development of oCoP environments for teachers' professional development.

Methods: The two research phases of the study are 1) a mandatory participation term, and 2) a voluntary participation term. In the first phase, 28 preservice teachers from three universities were required to participate in an online discussion environment with the researchers. In the second term, 177 community members, who are teachers, academicians, and other preservice teachers, voluntarily participated in the environment. The data of this study were collected by qualitative data collection methods: interviews, written reflection reports and online discussion history.

Findings and Results: The motivators and barriers discussed have been place into three categories: interpersonal, personal and environmental. "*Inter-*

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personal motivators" are gaining a reputation, defending ideas of each other, sincerity in the environment and collectivism. "*Personal motivators*" are gaining more responsibility, self-confidence and having wide-ranging knowledge, a sociable personality, readiness for life long learning, great interest in a topic and altruism. "*Environmental motivators*" are the quality of tools and the advantage of online environments. On the other hand, "*Interpersonal barrier*" is a feeling of the availability of others. "*Personal barriers*" are a lack of time, the idea of "max benefit minimum effort", hesitancy to misdirect, unwillingness and involuntary participation and low priority. Finally, "*Environmental barriers*" are limited familiarization with ICT and technical glitches, difficulties in access to the Internet and computer availability, asynchronous communication and problems raised from the design of the PDC.

Recommendations: The results of the study suggest that practitioners and other academicians who are willing to design and develop online learning communities for teachers should take into account the motivators and barriers that are reported in this study.

Keywords: Communities of practice, computer-mediated communication, teachers, professional development, Internet.

Over the years, there has been much discussion about how learning occurs. Recently, communities of practice have been a new look into the social theory of learning (Wenger, 1998, p. 4). Wenger (1998) stated that this social learning theory is a different look at learning problems though "it is not a replacement for other theories" (p. 4). This theory for adult learners focuses on learners as social beings and their active engagement in the world to gain knowledge. In other words, this theory claims that learning is an ongoing core process to being a member in a community and community members are a group of people who get together because of a common interest, problem or task (Wenger, 1998).

Teachers' professional development is the main research aim of this study. In the traditional educational system, teachers improve their practice mainly on the job after they are equipped with theoretical knowledge and limited practice in their undergraduate years. Similarly, Birol, Dagli and Silman (2010) indicated that the universities, the center of teacher education, have not used knowledge management tools helping students to obtain practical knowledge. In this sense, a lack of practical knowledge in teacher education is a very important problem. In recent years, to overcome this problem, some popular approaches have been the focus on educational research, collaborative reflection and case studies (Wang & Hartley, 2003).

Teachers are isolated from other professionals as result of geographic location and they have limited opportunities for collaborative face-to-face discussions (Kurtts, Hibbard & Levin, 2005). Many researchers have revealed that technology provides an easy and effective way to present this kind of environment to teachers and to help to overcome isolation problems (Barnett, 2006). More specifically, Barnett (2002) said

that information and communication technologies (ICT) have great importance in teacher education since they allow teachers to access ongoing, quality professional development and they can communicate, collaborate and reflect on their teaching. Moreover, Mehlinger and Powers (2002) stated that distance education technologies in teacher education courses increased professional development capacity for teacher education, provided quality teaching and learning opportunities and gave an opportunity to distribute the teacher education courses in a more effective way.

Sprague (2006) exemplified several models for an online teacher education program. In addition to informal efforts, which use e-mail, discussion boards, case study discussion and course web sites to support their teacher education courses, there are some web-based efforts supported by formal institutions. To her, all models aim to improve teachers' understanding of learning and to change their practice. In this point, for teacher educators, the curriculum of teacher education is rich enough to use new pedagogical approaches. However, faculty members have limited abilities to integrate new technology into lessons. Therefore, curriculum developers should take into account all possible ways to integrate ICT in education. So, it is important to conduct new research studies on this topic to guide curriculum developers.

Previous studies on teachers' professional development courses indicated teachers' dissatisfaction with traditional learning environments (Baran & Cagiltay, 2006). Furthermore, running conventional face-to-face professional development systems for all teachers seems impractical because of financial and logistical problems. Building online Communities of Practice environments as an alternative to traditional professional development courses is today's very popular way of producing meaningful learning and practical knowledge (Jonassen, Howland, Marra & Crismond, 2008). Even though the literature indicated that there were serious attempts to build online knowledge-sharing environments, most instructional designers agree that sustaining such environments may present several difficulties (Barab, Kling & Gray, 2004). This study focuses on this challenge and discusses the alternative ways to sustain online communities. Therefore, the purpose of this study is to discuss motivators and barriers affecting teachers' involvement in online professional development communities.

Method

The Professional Development Environment

The researchers developed a computer-mediated communication tool, which was called "The Professional Development Circle (The PDC)" (Figure 1). The main theme of the PDC is mathematics teaching. The PDC has three main parts: 1) a digital library to share electronic resources; 2) a digital video component that has video recordings from real classrooms of teachers teaching; and 3) forum and communication tools. In addition to the PDC, a discussion list was used to arrange asynchronous discussions.

Figure 1. A screenshot from The Professional Development Circle (The PDC)

Research Process

There were two main phases of this study. The first phase, "The mandatory participation term", took four months in the 2005-2006 fall term. Twenty-eight senior teacher candidates from three different universities in different regions of Turkey participated to this phase as part of their regular teaching practice course, comprising a rich group of preservice teachers with different backgrounds. The participants, who were grouped based on their universities, earned a partial grade at the end of this phase. This phase had one meeting session and four discussion periods. The researchers announced the starting and ending dates of the discussions at the beginning of each period. During the meeting period, the participants introduced themselves to the others via email. In each discussion period, the participants were responsible for watching an assigned digital video of the period and sending at least three e-mail messages about each video (Figure 2).

Figure 2. The videos recorded in real classrooms (the topics are geometric figures, subtraction, cubes, and symmetry)

Every period had a curricular process: participants from one of the universities started the discussion, the second university's students added their comments, and the third university's students composed a revised lesson plan for the video class in light of criticism from the other participants. In every period, the responsibility of the

universities was changed so that each participant had a chance to contributing to each activity.

In the second phase, "the voluntary participation term", inservice teachers and academicians voluntarily participated in the PDC, along with the teacher candidates of the first phase. The researchers announced the portal on some web sites and discussion lists to increase the number of members. This phase took six months in the 2005-2006 spring term. The membership history showed that 177 newcomers participated in the online community at the end of this new phase. That is, in this new phase, the participants formed a larger community ranging from experienced to novice community members. This phase had four periods and each took approximately one month. The starting and ending dates of each period were a bit flexible. Sometimes intensive discussions required extending the periods.

Sample of the study

In the mandatory participation term, 20 out of 28 participants were female, and only eight men participated in the study. The participants' ages ranged from 21 to 24. They were from the Middle East Technical University, Ankara University and Çanakkale 18 Mart University. Only 10 out of the 28 participants had a computer in their homes. Most of the participants' Internet connection durations were between 1 and 5 hours per week.

In the voluntary participation term, membership to the online discussion environment increased over time. In January 2006, 30 new preservice teachers participated in the environment. Then, owing to announcing the environment, the number of community members, which including inservice teachers, academicians and preservice teachers, reached 177 at the end of the term.

Data collection and analysis

The data were collected in terms of written reflection reports, interviews, observations and discussion list messages. The researchers began to analyze the data with the mandatory participation term. There were 28 reflection reports and 186 discussion list messages. The researchers read each reflection report twice so that they could grasp the whole picture. Then, they tried to find codes and themes in the data. Obtained codes were compared with the data from discussion list messages and interviews. Then, analysis of the voluntary participation term started with analysis of all 219 messages, which were sent to the discussion list. Synchronously, six interviews about both mandatory and voluntary terms were analyzed. Lastly, the results of the mandatory and voluntary terms were combined according to the emerging themes.

Trustworthiness

To establish the trustworthiness of this research study, the following strategies were used; 1) data were recorded mechanically; 2) the researchers were at the research site for a long time to built trust with the participants; 3) the researchers carefully selected informants to obtain the best data; 4) in this study, the researchers used different triangulation approaches. First, the researchers used different sources

of knowledge (interviews, reflection reports and document analysis) to ensure the accuracy of the codes. Second, the researchers collected data from the same participants at different times. There were some similar questions in interviews and reflection reports. Third, the researchers asked the participants' ideas, which were stated in their reflection report to interviewees for evaluation.

Findings

In the mandatory phase, there was an average of 2.46 messages per student per period. However, some participants sent more than three messages. In the voluntary phase, 23 teachers, 14 preservice teachers, two academicians and the researchers participated in the discussions. That is, only 19% of total members sent messages to the discussion list. Four preservice teachers in the mandatory phase continued the discussion. Therefore, tentative motivators and barriers were generated to explain why some participants were willing to participate in the discussions while some were not.

Motivators

A tentative "motivators model" was generated at the end of data analysis (Figure 3). This model had three categories: inter-personal, personal and environmental motivators. Each of them also affects another.

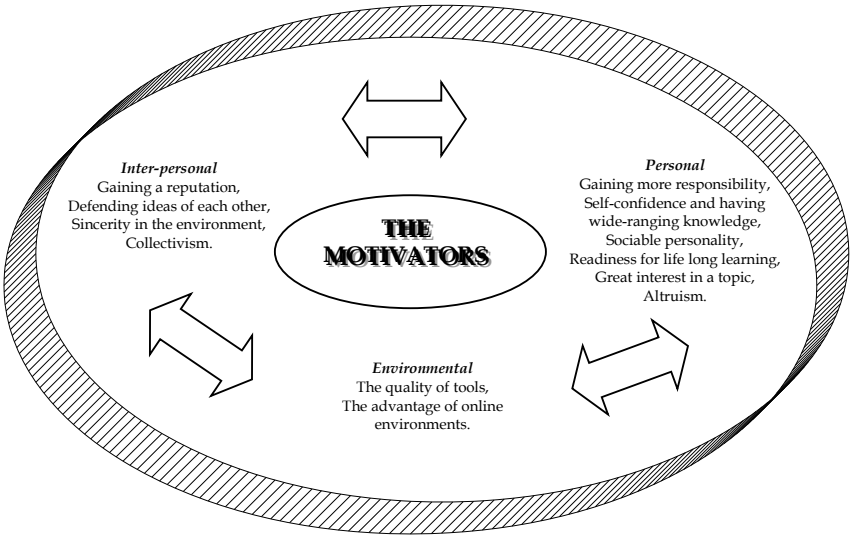

Figure 3. The motivators that make teachers actively increase the quality of knowledge sharing.

Personal motivators. As for the mandatory phase, "gaining more responsibility" meant taking on a greater study burden. It was observed that this idea annoyed the participants. But even though additional responsibilities would affect their grades, they did not discuss this with the researchers. However, as for the voluntary phase, it means that some community members were still willing to make additional contributions to the community. After one of the participants' promotions in the community, she requested to organize a new discussion month in the community. She was authorized to become a discussion moderator of the "fractions and misconceptions" topic. As moderator she asked some interesting questions, found additional material and never omitted coming messages to take attention from other community members on the discussion topic.

"Self-confidence" and "having wide-ranging knowledge" were two interrelated personal motivators for the two phases. The participants said that if teachers believed in themselves they would state their standpoints without hesitation. And, if a participant had wide-ranging knowledge about topic, he/she would be a more active member during discussions. However, neither self-confidence nor having wide-ranging knowledge standing alone were sufficient motivators of activity, since these factors, together, impelled community members to share knowledge with others.

The results showed that more "sociable participants" easily adapted to the PDC, communicated with other teachers and shared knowledge in this environment. The participants' "readiness for life-long learning" was a very important motivator, which directly increased their activities in the PDC. If the participants adopted a life-long learning principle as a life philosophy, they were willing to develop themselves professionally for their personal benefit. That is, grading was not such an important factor for them especially in the mandatory phase. They did not see these kinds of environments as a barrier that they had to surmount to be able to graduate from university. Therefore, teachers who accepted this system as a part of life-long learning participated in activities willingly and benefited from the community and the tools in the system. The discussion list history indicated that these preservice teachers were also active members in the voluntary phase.

"Great interest in a topic" was another reason to be active in two phases. The discussion history revealed that some participants asked questions to other community members about their interests. The existence of questions showed that members were, in that way of being, an online community.

The ultimate goal of altruism's is "to increase the welfare of one or more individuals other than oneself" (Batson, Ahmad & Tsang, 2002, p. 436). In this study, "altruism" was also revealed as one of the factors increasing the activity of teachers in two phases. Some of the participants thought that other members needed their materials or suggestions. Therefore, they wanted to be beneficial to them.

Interpersonal motivators. The participants had limited face-to-face interaction with each other owing to first meeting in the beginning of the mandatory phase. The participants stated that this first meeting was not sufficient to get to know each other more closely. However, in time, the participants had begun to give virtual

personalities to other people in the community owing to their ideas, writing styles and activities during discussions. Their "reputation" increased parallel to their activity. Through the voluntary phase, some participants had become close friends. The interviewees underlined that a desire to be known by the community members impelled them to be more active during discussions. So, some unrelated messages, celebration or jokes, were sent to the discussion list.

In the mandatory phase, it was clear that the same university students "defended ideas of each others" against other groups when their own group had stated an idea or submitted a teaching activity. Similarly, in the voluntary phase, each member individually defended his/her own ideas when another community member criticized him/her. As a whole, this finding revealed that community members tended to support their own ideas when there were either a part of a group or individual members in the PDC.

The participants said that they wanted to feel "sincerity" in the community to participate in online discussions or to share their own resources with others. That is, before sharing their knowledge, they wanted to know whether or not others set a high value on them. One of the participants stated "I shared my materials with others because I knew members of this community. In another environment I have to see sincerity of its members before sharing my ideas and materials with them."

Collectivism means "motivation with the ultimate goal of increasing the welfare of a group or collective" (Batson, Ahmad & Tsang, 2002, p.437). This study revealed that some preservice teachers wanted to be beneficial to their teacher community. In other words, they participated in online discussions and sent their teaching materials to other community members because of a commonality of teaching issues.

Environmental motivators. "the quality of tools" was an environmental motivator that affected teachers' participation in discussions. Rich digital videos let teachers discuss effectively and efficiently with other community members about real teaching issues. The participants stated that in addition to good cases in videos, teaching problems or students' learning difficulties increased the quality and quantity of discussion messages. When the participants compared two discussion phases, they especially emphasized the benefits of videos in the mandatory phase, which included obtaining the experiences of inservice teachers, not repeating faults in videos and visiting various teachers' classrooms in a cost-effective way.

The participants stated, both in reflection reports and interviews, that they comfortably expressed their opinions and ideas in the Internet environments because of the "anonymity attribute of asynchronous communication tools", which did not allow for hearing others' voices or seeing others' gestures. However, to them, in face-to-face environments, people do not prefer explaining their ideas since they hesitate hurt others with their words.

The Barriers

A tentative model with regard to the participants' low contribution to online discussions and the low quality of their comments is presented in Figure 4. Similar to

the motivators, the barriers were also categorized as inter-personal, personal and environmental. Each of them also affects another.

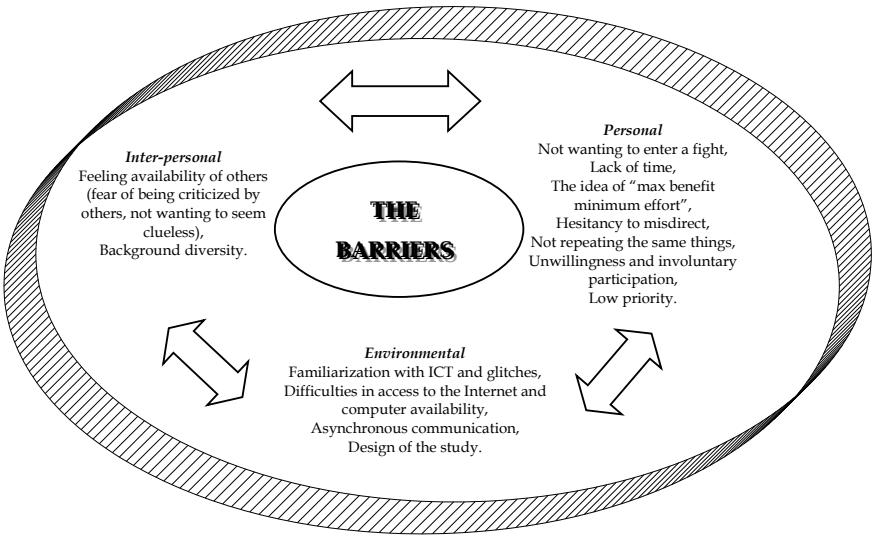

Figure 4. The barriers that make preservice teachers less active and decrease the quality of knowledge sharing.

Personal barriers. The first barrier was "not wanting to enter a fight" with the community members. The results indicated that in the mandatory phase, most of the participants hesitated to talk with other preservice teachers since they did not want get into disputes with them. So, they tended to reply their own group members' messages. In the voluntary phase, some community members believed that there was no end of ideas in debates. Similarly, the discussion history showed that one of the participants generally did not turn any reply to the other participants after one hot point of the discussion and the rest of the participants generally remained quiet during this discussion.

"Lack of time" was the second barrier, which decreased the amount of knowledge to be shared in both phases. In this study, the participants were fourth-year preservice teachers. Therefore, they stated that their first priority in life was to graduate from the university and then get a good result on the teacher entrance exam before being appointed teachers.

In addition, interviewees stated that most of the preservice teachers did not want to spend extra effort in a voluntary environment. They preferred the easiest way to access to knowledge sources. Trying to learn something related to the teaching profession is not a desirable way of obtaining knowledge. That is, the idea of "maximum benefit minimum effort" decreased their contribution to the community.

As another barrier, some participants thought that they would "misdirect to other community members". One of them stated, "How much I was qualified on fractions? If I am not sure about my competency on the topic, I hesitate to make comments because I may make wrong comments. I did not hesitate to send e-mail but rather I hesitated to speak if I had not been sure about the accuracy of information."

"Not repeating the same things" was another barrier that decreased preservice teachers' contribution to discussions. During a discussion, preservice teachers searched for new things to contribute. If they did not had anything new to say, they stayed quiet since they did not want to repeat the same things.

The participants stated that "unwillingness and involuntary participation" had a critical impact on the PDC's success. In the mandatory phase, the unwillingness of the participants who were mandated to participate in online discussions by the researchers was a challenge. Both in face-to-face visits and in reflection reports, they frequently underlined this issue. Interviews also supported this inference coming from reflection reports and they explained this barrier as one of the reasons for being passive in the voluntary phase.

The last personal barrier was "low priority". The results showed that the PDC was not the primary study of preservice teachers in the mandatory phase. Similary, the members of voluntary phase used the PDC as a secondary knowledge source.

Interpersonal barriers. The interviewees stated that they felt the explicit "availability of other community members" in the PDC. They thought twice before sending any message or material to the discussion list because other people could criticize them. Furthermore, what others' thought about their comments was very important. So, they did not want to seem clueless to others. Since some participants thought that there might be some people who might look down on other participants, they preferred not to share their ideas or knowledge sources.

"Background diversity" was an interpersonal barrier. In the first term, selecting preservice teachers from different departments and universities was a design decision that was determined at the beginning of the study. However, the participants stated that this decision decreased the quality of knowledge sources. First, similar studies came from the same university students. Second, every university student evaluated their group participation more effective. The voluntary phase included people having different backgrounds. In this complex environment, there were various points of view. For example, some experienced teachers believed that the real school environments were different from what is taught in university education. Furthermore, they believed that academicians have still tried to teach the same things to preservice teachers. However, academicians also criticized experienced teachers. They believed that teachers did not develop themselves and frequently complained about the educational system. Therefore, there were some differences between teachers and academicians in terms of perception of understanding teaching. In this polarization, preservice teachers hesitated to reflect on their opinions comfortably since they did not want to challenge either academicians or experienced teachers.

Environmental barriers. "Familiarization with ICT and technical glitches" was the first environmental barrier that decreased the quality of the discussions. Poor computer literacy courses and low Internet and computer access were reasons for the participants' unfamiliarity with computers. In addition, some preservice teachers did not like to use computer-based studying tools such as typing on keyboard or using word processor programs to format text. Rather, they said that they preferred to use traditional tools. Since they could not alter their traditional working habits to use digital devices, they were too exhausted to share their knowledge sources.

Another barrier was "difficulties in accessing to the Internet and computer availability". The PDC required preservice teachers' active participation in discussions and, therefore, active use of computers and the Internet. However, they had limited access to them. Only 10 out of 28 participants had a home computer and 7 of those 10 participants had an Internet connection. Sixteen of the participants' weekly Internet connection durations were between 1 and 5 hours.

Furthermore, "the asynchronous communication tool (discussion list)" had some disadvantages, which decreased preservice teachers' activity and message quality. The results indicated that because some preservice teachers did not frequently connect to the Internet, they had lots of unread messages when they opened their inbox. Therefore, they preferred to skim over received messages rather than opening and reading each message.

"The length of the discussion periods" was another environmental barrier that was criticized by the participants. In this study, the discussion duration for each video was two weeks. Some participants needed more time for discussions while some of them reported that it was appropriate and requested more videos to view. In addition, every participant had to send at least three e-mail messages in each term. Some participants found "the three e-mail rule" nonsensical. This rule caused the following results: ineffective comments, dividing whole opinions into smaller parts, sending similar messages, and sending out topic e-mails. In other words, the quality decreased in the discussions.

Conclusion, Discussion and Suggestions

Interpersonal Factors

The background of the community members affected the amount and quality of messages. Similar to the PDC, the Inquiry Learning Forum (ILF) is an online community for K-12 teachers and administrators, preservice teachers, and educators. Moore and Barab (2002) have defined the general scope of the ILF as "a research and instructional design effort centered around Internet based professional development" (p. 45). Makinster, Barab, Harwood and Anderson (2006) indicate that although preservice teachers gave great value being with other people on the same platform, their community, the ILF, prevented them from talking about certain topics or concerns because of differences in the participants'backgrounds. As for message

quality, preservice teachers of the same university sent very similar lesson plans. Therefore, we propose using at least two discussion forums, which will bifurcate students' discussions from public discussions. In addition, participants should be motivated to produce their own teaching sources by the practitioners.

This study revealed that *sincerity in the environment* has directly affected teacher's participation and some members have pointed out that the attitudes of some participants caused less contribution by others. Baek and Schwen (2006) emphasized that teachers build trust among them to be able to reflect on their teaching. In our study, an introductory discussion period was beneficial for icebreaking. However, it was not sufficient for warmer relationships. We argue that not right away, but in the following months, a face-to-face meeting could be more beneficial since participants wanted to learn the details of others in their community. Alternatively, in the forum part of the PDC, teachers can introduce themselves to other members. When a teacher wants to learn the profile of another teacher, s/he can examine this part. Educators should keep in mind that developing sincerity among teachers will require more time than expected.

Collectivism was one of the motivators of people sharing knowledge on the discussion lists (Batson, Ahmad & Tsang, 2002; Cheung & Hew, 2004; Hew, 2006). As a practical solution to increase in collectivism, the community designers may let preservice teachers see the outcomes of their knowledge sharing. If they see good results of their participation in discussions, they will be more motivated. The digital library part of the PDC is truly the place to accomplish this. After each discussion period, important and valuable resources coming from members can be published in the portal. Furthermore, if the moderator starts discussions about what community members learned from other regular discussions and how they use them in their classrooms, the developed welfare of community will be exhibited to all community members. So, motivation for increasing the welfare of the teacher community can increase.

Personal Factors

A unique factor *getting more responsibility* impelled some members to be more active in the community. Hence, we propose that educators give more tasks to some community members. On this point, characteristics of community members are very important. This study revealed that *self-confidence* and having *wide-ranging knowledge* were two interrelated motivators to increase the degree of participation. Similarly, Jakobsson (2006) showed that self-confidence was an important factor in online environments. Similarly, Hew (2006) revealed that the outspoken personalities of discussion list members increased to share knowledge with other members. Another factor is that sociable community members easily adapted to their environment, communicated with other preservice teachers and shared knowledge. Vonderwell (2003) showed that in online environments, if preservice teachers had not met before, they hesitate to write each other. Furthermore, community members' *readiness for life-long learning* was a very important motivator, which directly increased their participation in the PDC. Therefore, we propose that practitioners can give additional responsibilities to some community members who are self-confident,

sociable and life-long learners. These members will enable other community members to be more active.

Great interest in a topic was another reason to be active in the two phases. Similarly, Hew (2006) reveals that one of the motivators to share knowledge in a discussion list is personal gain. He describes personal gain as obtaining more knowledge from the others. One of the strategies to motivate these types of people is to come out with different knowledge sources. Therefore, carefully planning the discussions is very important. The discussion moderator should often ask questions to different people to include their opinions. Discussion topics should be appropriate to keep the attention of members that have different perspectives. In addition, different experts can be invited for discussion topics.

In the study, some of the preservice teachers' knowledge sharing and participation in discussions decreased since they *hesitated to misdirect* other community members. Similarly, Hew (2006) revealed that unfamiliarity with the discussed topic hindered discussion list members knowledge sharing. Therefore, community members should be motivated to participate in discussions without any hesitation. However, discussion moderators should control the accuracy of their sharings. Another reason for decreasing activation is a lack of self-confidence. Furthermore, *not wanting to repeat knowledge* is another barrier. Similarly, Hew (2006) revealed that "no new or additional knowledge to add" is one of the barriers to sharing knowledge. To overcome this barrier, the discussion moderator should support the online community with additional materials. In rich online discussions, every member can find to say something.

The most frequent challenge to using e-mail to support teachers is the participants' finding computer time (Davis & Resta, 2002; Baek & Schwen, 2006). Baek and Schwen (2006) proposed that activities in these environments should be directly relevant to teachers' daily tasks. In daily life, every preservice teacher is part of larger or smaller communities (Wenger, 1998). The priority of these communities in a teacher's daily life changes from one teacher to another. If an online community participant has a *lower priority in her/his life* than others, that teacher might not find time to be online. Similarly, preferring to participate in other communities causes *unwillingness and involuntary participation* in online communities. Therefore, in the design of an oCoP environment, practitioners should design very simple and easy to understand environments rather than complex ones. Similarly, Baek and Barab (2005) revealed that in their study, complex design principles were criticized by online community members.

Environmental factors

Similar to previous studies (Wang & Hartley, 2003; Knight, Pedersen & Peters, 2004; Sherin & van Es, 2005), this study showed that videos were an outstanding tool to show teaching practice from real classrooms and to enhance teachers' professional knowledge. Therefore, we propose that other practitioners use digital videos showing real classroom environments.

Related to *anonymity*, many research studies indicated that introverted people overcome shyness through asynchronous communication tools and become more active than when they are in face-to-face discussion courses (Nicholson & Bond, 2003; Vonderwell, 2003; Cheung & Hew, 2004). Similarly, our study also found that the discussion list had a big advantage in making community members active. However, Davis and Resta (2002) examined the influence of using e-mail to support novice teachers. In their findings, one of the challenges is the difficulty in expressing feelings via e-mail. Therefore, they proposed making regular meetings in addition to the electronic collaboration. In a more recent study, while some participants emphasized the positive aspect of a feeling of anonymity, some participants pointed out the importance of real-time, face-to-face exchange (Cook-Sather, 2007). As a result, it can be said that Internet environments have the advantage on anonymity, but they also have some limitations in expressing opinions and feelings. Therefore, practitioners should keep in mind that their oCoP environments should include tools that allow developing social relationship among participants and expressing feeling, such as emoticons.

Some research studies revealed preservice teachers' criticisms to receiving delayed replies to their messages (Vonderwell, 2003; Cheung & Hew, 2004; Cook-Sather, 2007). Levin and Robbins (2006) determined that the number of participants preferring synchronous discussions increased after all participants' experienced synchronous discussion because of the response time and length of the response. Therefore, practitioners should keep in mind that asynchronous communication in online communities may cause unreplied messages in the system. If possible, we propose to use synchronous discussion at specific times.

Finally, this study included some participants who have *low technology use skills* and *limited connection to the Internet*. These participants thought that the discussion duration was too short to allow them to read all their messages and reply to them on time. Therefore, they did not like to discuss on the PDC. Similar to the complaints of our students, Jakopsson (2006) found that some of their participants were frustrated by working through the Internet. In addition, some of our participants found the three e-mail sending rule nonsensical since it caused the following results: ineffective comments, dividing whole opinions into smaller parts, similar messages and off topic e-mails. In sum, educators should set their discussion duration and their mail sending responsibility according to the characteristics of their community members.

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Çevrim İçi Uygulama Topluluklarının Geliştirilmesinde Güdüleyici ve Engelleyici Faktörler

(Özet)

Problem Durumu: Eğitim alanında yıllardan beri devam eden temel tartışmalardan birisi, öğrenmenin nasıl gerçekleştiği ile ilgilidir. "Uygulama Topluluğu" yaklaşımı, bu tartışmaya farklı bir bakış açısı getirmiştir. Bu yaklaşım, yetişkin insanları sosyal varlıklar olarak kabul eder ve öğrenmenin gerçekleşebilmesi için, onların sosyal etkileşim ortamlarında, aktif olarak bulunmaları gerektiğini savunur. Bilim insanları, öğretmenlerin "öğretmeyi öğrenme" sürecinde elde etmeleri gereken pratik bilgiyi kazanmaları için bilgi alışverişinde bulunacakları sosyal ortamların olması gerektiğini savunmaktadır. Türkiye' de görev yapan öğretmenlerin hepsini bir araya toplayacak bu tür sosyal ortamları geleneksel eğitim sisteminde oluşturmak gerek maliyet ve gerekse teknik

açıdan oldukça zordur. Bu sebeple, öğretmen eğitiminde İnternet'in kullanılması fikri oldukça ilgi çekicidir. Uygulama toplulukları fikri ve İnternet'in bir araya gelmesiyle birlikte "çevrimiçi uygulama toplulukları" çalışmaları ortaya çıkmıştır. Bu araştırma alanında en büyük problem, bu toplulukların üyelerini, topluluk içerisinde aktif tutmak, onların ortama katılımcı olmalarını sağlamak ve topluluğu uzun süreli yaşatabilmektir.

Araştırmanın Amacı: Bu çalışma, öğretmenler için tasarlanmış çevrimiçi uygulama topluluğunun üyelerini, topluluk içerisinde aktif tutmak, ortama katılımcı olmalarını sağlamak ve topluluğu uzun süreli yaşatabilmek için gerekli, güdüleyici ve engelleyici faktörleri ortaya çıkartmayı amaçlamaktadır.

Araştırmanın Yöntemi: Bu çalışmada, "Mesleki Gelişim Çemberi (MGÇ)" isimli çevrimiçi ortam geliştirilerek kullanılmıştır. Matematik öğretimi ile ilgili materyaller içeren ve tartışma ortamları sunan bu ortam üç ana kısımdan oluşmaktadır; 1) Bir sayısal kütüphane, 2) Gerçek okul ortamında çekilmiş videolar, 3) Elektronik forum ve iletişim araçları. Ayrıca, iletişimi sağlamak için bir elektronik tartışma listesi kullanılmıştır.

Bu çalışma birbirini izleyen, ancak farklı tasarımlara sahip iki aşamada gerçekleştirilmiştir. Birinci aşama olan, "Zorunlu dönem" dört ay sürmüştür. Üç farklı üniversiteden, 28 son sınıf öğretmen adayı bu aşamaya katılmıştır. Bu dönemde, her ay gerçek sınıf ortamında çekilmiş bir video üzerine çevrimiçi tartışmalar düzenlenmiştir. Öğretmen adayları bu ortamda gerçekleştirdikleri aktivitelerinden derslerini etkileyecek bir not almışlardır. Araştırmada ikinci aşama olan, "Gönüllü dönem" yaklaşık altı ay sürmüştür. Birinci aşamanın katılımcıları haricinde, öğretmenler, akademisyenler ve farklı öğretmenlerden oluşan 177 kişilik yeni üye grubu gönüllü olarak bu aşamadaki tartışmalara katılmıştır. Bu dönemde tartışmaların başlangıç ve bitişleri sabit değildir ve yoğun tartışmalar tartışmaların uzamasına sebep olmuştur.

Araştırmanın Bulguları: Bu çalışmanın bulgularına göre, topluluk üyelerinin bütün tartışmalara katılmadığı ortaya çıkmıştır. Nitel veri analizi yoluyla belirlenen güdüleyiciler ve engelleyiciler; "kişiler-arası", "kişisel" ve "ortamsal" başlıkları altında sunulmuştur. "*Kişiler-arası güdüleyiciler*", grup içinde tanınma, fikirlerini savunma, ortamdaki samimiyet ve ortaklıktır. "*Kişisel güdüleyiciler*", bazı üyelere daha fazla sorumluluk verme, üyelerin hayat boyu öğrenme için hazır bulunma durumu, üyelerin bir konu ile yakından ilgilenmeleri ve özveridir. "*Ortamsal güdüleyiciler*", kullanılan araçların kalitesi ve internet ortamının avantajlarıdır. Diğer taraftan "*Kişiler-arası engelleyiciler*", ortamdaki diğer kişilerin varlığından ve üyelerin farklı kimliklere sahip olmasından kaynaklanmaktadır. "*Kişisel engelleyiciler*", tartışmaya girmekten kaçınmak, zaman eksikliği, maksimum fayda minimum çaba düşüncesi, yanlış yönlendirmekten kaçınmak, aynı şeyleri tekrar etmekten kaçınmak, isteksizlik ve gönülsüzlük ve ortamın üyeler için düşük önceliğidir. "*Ortamsal engelleyiciler*", bilgi ve iletişim teknolojilerine aşinalık, teknolojik hatalar, bilgisayar sahipliği ve İnternet

erişimi, asenkron iletişim ve çalışmanın tasarımından kaynaklanan faktörlerdir.

Araştırmanın Sonuçları ve Önerileri: Bu çalışmanın sonuçları *kişiler-arası*, *kişisel* ve *ortamsal* konu başlıkları altında tartışılmıştır. Kişiler-arası faktörlerden dikkat çekicilerden bir tanesi, "katılımcıların farklı kimlikleri" dir. Öğretmenlerin, öğretmen adaylarının ve akademisyenlerin aynı platformda bulunmaları katılımcıların çekimser olmalarına sebep olmuştur. Bu sebeple topluluk üyelerinin katılımcı tiplerine göre ayrılmaları önerilebilir. Diğer bir faktör, "ortamdaki samimiyet" öğretmenlerin bir uygulama topluluğunda hissetmek istedikleri önemli bir konudur. Saygılı bir ortam katılımcıların bilgi paylaşımını artırırken, olumsuz tutumlar topluluk üyelerini ortamdan uzaklaştırmaktadır. Bu sebeple, uygulama toplulukları uygulayıcılarının, İnternet ortamı dışında yüz yüze toplantılar düzenlemeleri önerilebilir. Yine de bir topluluk tasarımında topluluk üyeleri arasında samimiyet kurmanın zaman alacağını kabul etmek gerekmektedir.

Kişisel faktörlerden birisi, "daha fazla sorumluluk almaktır". Topluluk üyelerine yeni görevler vermek, onların ortamı sahiplenmelerini sağlayacaktır. Burada unutulmaması gereken önemli bir nokta, bu görevlerin zaman içerisinde kademe kademe olması gerektiğidir. Ayrıca, bu ortamda kendine güvenen, bilgili, sosyal ve hayat boyu öğrenme fikrini benimsemiş katılımcıların daha aktif oldukları ortaya çıkmıştır. Bu sebeple, topluluk üyelerine görevler verileceği zaman bu katılımcı tipine sahip kişilerin seçilmesi daha uygun olacaktır. Diğer bir faktör, "bir konu ile yakından ilgilenmektir". Topluluk üyelerinin, kişisel kazanımlar için bu ortama katıldıkları bir gerçektir. Bu sebeple, çevrimiçi uygulama topluluklarında ilginç ve yenilikçi konuların seçilmesi ve sürekli güncel tutulması gerekmektedir. Ayrıca, farklı uzmanlık alanına sahip kişilerin ortama davet edilmesi, farklı tipteki katılımcıların ilgisini çekecektir. Diğer bir faktöre göre, bazı katılımcıların diğer üyeleri yanlış yönlendirmek istemedikleri için katılımcı olmadıkları ortaya çıkmıştır.

Bu çalışmada ortamsal faktörlerden en önemlisi video kullanımı olmuştur. Videonun, pratik bilginin ortaya çıkartılmasında ve yansıtıcı düşüncenin oluşturulmasında oldukça etkili bir araç olduğu ortaya çıkmıştır. Ayrıca, asenkron İnternet ortamında katılımcılar kimlikleri gizli kaldığı için duygu ve düşünceleri rahat ifade etmişlerdir. Diğer önemli bir konu, asenkron iletişimin bazı mesajların yanıtsız kalmasına sebep olduğudur. Uygulayıcıların bu durumu dikkate alarak tartışma sırasında gönderilen mesajların yanıtsız kalmasını engellemeleri gerekmektedir. Son olarak, bir tartışmanın süresi ve bu tartışmada gruba gönderilmesi gereken mesaj sayısı katılımcıların günlük İnternet'e bağlı kalma süresine ve e-posta kontrol etme sıklığına göre belirlenmelidir.

Anahtar Sözcükler: Uygulama toplulukları, bilgisayar temelli iletişim, öğretmenler, mesleki gelişim, Internet.

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English-Medium Higher Education: Dilemma and Problems

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Abstract

*Problem statement***:** "Non-English speaking" countries have no choice but to learn English in order to survive in the international market. Establishing English-medium higher education institutions is one of the educational policies that has been adopted by countries like Turkey, in order to provide a greater advantage for the country in the international market.

*The purpose of the study***:** This research was conducted at an English-medium university located in a non-English speaking country in order to assess its effectiveness at the university level from the perspective of students and instructors. The research surveyed the perspectives of the students and instructors based on their rate of foreign language proficiency and their attitudes toward English-medium education. Their recommendations were also gathered to help improve the system.

***Methods*:** Both quantitative and qualitative methods were employed for data collection and analysis. The research was conducted using a random sampling from a population of 1011 students and 117 instructors. A balanced percentage (10%) of the student and the instructor population, from each faculty, was included in the study. Data was gathered through two sets of questionnaires consisting of closed and open-ended questions. Multiple choice and the Likert Scale format (1 to 5) were used for the close-ended questions. Both the instructor's and student's questionnaires were prepared in their mother tongue in order to obtain more detailed information. The data was subjected to a quantitative (descriptive) and qualitative (content) analysis

Results: The results show that students feel disadvantaged during their college years, due to a self-perceived low language proficiency. Both the students and the instructors believe that if the system is improved it will

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provide great benefits to the whole university student population, not only in Turkey but in all EU Countries.

Conclusions and recommendations: In order to reconcile the instructor's misgivings, as well as enhance student performance, a middle ground should be found at which students can reach their potential. Therefore, it is recommended that special text be prepared for English-medium educational programs, or for any other language being used in a non-native environment. It should integrate subject matter, English text, and native language supplemental explanations. Lectures, class discussion, and testing should continue in English, thus retaining the prime advantages of immersion learning techniques. In this way, a student will find ease in continuing to read and communicate concepts in a foreign language. Further, Turkey should expand its language education by promoting the acquisition of a second language in order to have a head start on its own ascension into the global community, modeling itself on the EU aspirations for a majority of their citizens to speak two foreign languages.

Keywords: English-medium education, higher education, European Union Policies

Since the latter part of the twentieth century, a new social science experiment has been underway: the transformation of the European Continent into one united nation. At the heart of this transformation is the need for a common language for communication, while holding on to each country's mother tongue. As stated by the European Union's (EU) Communication report to the EU Parliament, "The new Union will be home to 450 million Europeans from diverse ethnic, cultural and linguistic backgrounds. It will be more important than ever that those citizens have the skills necessary to understand and communicate with their neighbors," (COM 2003). This will result in Europeans needing to speak more than their own language. Though this may seem a daunting task, the current levels of second language attainment have shown this goal to be attainable. In fact the true goal is for each individual in the EU to speak two languages beyond their own (COM 2003). Multilingualism is seen as one of the "*key abilities* needed in the shaping of the European citizen of the future" (Chambers, 2004). One of the prime tools in teaching EU citizens is Content and Integrated Learning, more commonly termed as Medium Based Learning (Wilkinson, 2004). By introducing a subject matter through a foreign language students are immersed by reading, speaking, and literally thinking in that language. All subject matter is given in the foreign language. By doing so, the learner gains the language skill for immediate use. This method, though painful at first, offers the learner a high degree of self confidence in both the language and the subject base for which they are trained. This becomes an active skill rather than a passive subject.

According to Ammon and McConnell (2002), the EU countries have 1061 HE Institutions, of which 360 of them offer Medium Based Learning programs taught solely in English. The same study showed that the rationales for this English-medium education are mostly due to internationalization (15 countries), student exchanges (6

countries), staff mobility (9 countries), and university graduate employability (9 countries). In fact, English is the most common language used in the EU, comprising 51% (COM 2003).

There has been considerable discussion for and against having higher education in one's mother tongue or in another language such as English. This research aims to study this dilemma from the perspectives of students and instructors in an English-medium university in Turkey, which has long aspired for EU Membership.

In the Turkish education system, English has become the most commonly learned second language at both private and state Higher Education (HE) institutions. The need for English goes beyond just Turkey's ascension to EU membership; it takes on monetary and prestigious implications. These English-medium universities are held in high prestige and their graduates are readily hired both by the government and private industry, due to their English fluency and their ability to converse on a technical level. It is, therefore, apparent that some knowledge of English is necessary. Consequently, many parents, especially those from middle or upper class families, strive to have their children educated in an English-medium school, both at the secondary and HE levels.

With a population of approximately 70 million, Turkey has a student enrollment of almost 2 million studying at HE institutes (Higher Education Council, 2007). The Turkish HE system presently consists of 53 state universities, two of which are English-medium and one which is French-medium. In addition, there are 25 private universities, all English-medium. Intensive preparatory English courses are required for admission to English-medium universities. Each year, more than 1,600,000 high-school graduates take the national exam, of which English forms an integral part, to fill approximately 393,000 university freshman openings. Of these openings, only 57,000 are within these exclusive English-medium HE institutions.

This research was conducted at one of these private English-medium universities in order to assess the pros and cons of English-medium education from the perspective of students and instructors. The following research areas were examined:

1) How do students and instructors rate their foreign language proficiency in regard to English-medium education?
2) What are the students' and instructors' attitudes toward English-medium education?
3) What recommendations can be provided to make the system better?

Methods

Research Design

Both quantitative and qualitative methods were employed for data collection and analysis. The effectiveness of English-medium education at the university level was assessed based on the perspectives of students and instructors.

The private university where the research was conducted has a student body of approximately 11,000, 300 of which are from 50 other countries. It has 9 faculties, 2 four-year applied schools, 2 two-year vocational schools, the School of English Language, plus 7 graduate schools. It has about 1000 academic staff members; 90% of them hold degrees from prominent European and North American universities and 25% are non-Turkish. The employment of international faculty and the integration of international students into the programs are facilitated by the fact that the medium of instruction is in English. The institution participates in collaborative projects and exchange programs with many universities abroad, namely in the USA, Canada, and EU Countries.

Sample

The research was conducted on a random sampling with a population consisting of 1011 students and 117 instructors. A balanced 10 percent of both the student and the instructor population, from each faculty, was included in the study. Table 1 shows the breakdown of subjects based on faculty bases.

Table 1

Breakdown of Student and Instructor Bodies in Numbers

Faculty	Students n=	Instructors N=
Faculty of Engineering	106	16
Faculty of Humanities and Letters	173	15
Faculty of Music and Performing Arts	73	6
Faculty of Business Administration	139	25
School of Tourism and Hotel Management	118	20
School of Applied Languages	118	8
Faculty of Science	47	4
Faculty of Art, Design & Architecture	118	12
Faculty of Economics, Administrative & Social Sciences	118	11
TOTAL	1011	117

When considering the demographic characteristics of the student sample, they were randomly chosen from each grade level, looking for different cumulative grade point averages, and asked whether they had studied at a preparatory school (Prep.) (Table 2). Half of the population had a cumulative grade point average (CGPA) between 2.00-2.50 and almost 2/3 studied at preparatory school before starting their freshman year. 15 percent were randomly selected from the first year and the rest were 2nd, 3rd, and 4th year students.

Table 2
Demography of Student Group (in %)

Grade level (year)				(CGPA) of participant						Prep.	
1st	2nd	3rd	4th	1.00-1.50	1.50-2.00	2.00-2.50	2.50-3.00	3.00-3.50	3.50-4.00	YES	NO
15	20	30	35	1	13	50	23	9	4	73	27

Research Instruments

The data was gathered through two sets of questionnaires (instructors' and students' questionnaires) consisting of closed and open-ended questions. Both questionnaires were prepared in the mother tongue in order to obtain more detailed information. Closed-ended questions were used to assess students' and instructors' ratings of their foreign language proficiency in regards to English-medium education and their attitude toward it. Those closed-ended questions included both multiple choice and the Likert Scale format (1 to 5). Recommendations to make the system better were also gathered through open-ended questions.

Data Analyses

The SPSS package program was used to analyze the quantitative data. The results of the analysis are presented by frequencies and percentages. Open-ended questions were analyzed using the "content analysis" technique in order to identify the codes and themes coming from the study.

Findings and Results

How do students and instructors rate their foreign language proficiency in regards to English-medium education?

All classes are required to be held in English and are given by both Turkish and foreign instructors. The research focused on how students and instructors view their English language confidence. Therefore, students and Turkish instructors were asked to evaluate their own and each other's English proficiency. Moreover, students evaluated their Turkish instructors regarding their "subject matter knowledge" and foreign instructors regarding their efficiency in relating the course content into the Turkish context.

These evaluations were based on the Likert Scale: (1) very ineffective, (2) effective, (3) neutral, (4) effective, and (5) very effective. In order to assure diversity in student population, the data was gathered from students in different departments, at different grade levels, and with different GPAs (see the methods section).

The results showed that while instructors rated their own proficiency as being between "effective" (59%), and "very effective" (38%), they rated their students' proficiency as "neutral" (59%) to "effective" (39%). When students were asked to evaluate their instructor's "English proficiency" and "subject matter knowledge", they rated Turkish instructors' English proficiency as being "effective" (47%) and their subject matter knowledge as being "neutral" (41%). When students were asked to evaluate their foreign instructors' effectiveness to modify the lessons to a Turkish context most students (44%) rated them "effective". 40% of the students and intructors consider their language skills to be proficient.

What is the students' and the instructors' attitude towards English-medium education?

Results showed that there were strong arguments both for and against English-medium education. When asked the most important reasons for English-medium education, instructors responded that: "English is an international language" (43%); "Turkish is insufficient regarding the new terminology of technology" (32%); "Turkey is in need of relations with developed countries" (14%); and that English-medium education was important for "political reasons" (11%). Similarly, students listed the factors that they consider when choosing education in a foreign language. They were in order to: "have a much better chance of obtaining a good job" (38%); to "have a much better chance studying abroad" (23%); to "have a much better chance of a job abroad" (19%); to "keep ... informed regarding developments outside Turkey" (8%); and to "be more sensitive to the values and traditions of people abroad" (7%). 5% of the students stated that there were "no actual factors " contributing to their choice.

Results showed that most instructors were in favor of English-medium education (76%) and strongly agree (77%) that all students in Turkish schools should learn English. Similarly, almost half of the students (41 %) strongly agreed that English should be used as a medium of instruction. Regarding the affect of English-medium education on students' success, there were opposing views. Over half of the instructors (58%) believed that English-medium education affected students' success in a positive manner. Whereas, most students (73%) contended that "studying in English has decreased their school success". 58% said that "studying in their mother-tongue would be more beneficial for their success." Despite being in favor of the program, instructors had concerns as well. 40% strongly agreed that, "students' general creativity is decreased when taught in a foreign language." Secondly, 40% also agreed that the "self-confidence of the students is detrimentally affected by learning in a foreign language." Moreover, most of them (67%) agreed that "this program has decreased [their] teaching satisfaction".

While evaluating the courses, instructors and students made contradictory statements. 87% of instructors and only 17% of the students agreed that "the whole of the class time is in English." Secondly, 82% of the instructors stated that, "course contents are relevant to Turkish context." However, students (64%) asserted that they "study irrelevant content due to using foreign books." Moreover, all of the instructors agreed that "there are enough English resources for the course in the

library," and a majority (75%) strongly agreed that "Turkish material is necessary to prepare the resources." Lastly, most of the students (58%) contended "they have communication problems with foreign instructors" and 73% stated that they "prefer Turkish instructors and it does affect class preference."

When students were asked the most persistent problems they faced in an English-medium university, they said that their own English wasn't sufficient to learn subjects in detail (24%) and to take part in class discussions (31%). Moreover, some students (30%) even do not find themselves fluent enough to follow the lessons. Lastly, a small group of students (15%) believed that not enough attention was paid to conversion of subject matter to a Turkish context. Similarly, instructors were asked what were the most important factor affecting their success using English in the classrooms. Most of them (62%) said that "the presence of many low language ability students in the class" had an effect on their success. Other problems were listed included, "the student's negative reaction to English-medium classes" (18%), "the large class size" (17%), and "instructors' confidence and fluency in speaking English" (3 %).

What recommendations can be made for a better system?

Recommendations to make the system better were gathered through open-ended questions and the results were analyzed by qualitative methods. All of the students and instructors stated that they were aware of the importance of English-medium education and of the problems related to its implementations in a non-English speaking environment. They constructively criticized English-medium education and provided the following suggestions.

First, almost all of the instructors and students pointed out that textbooks were primarily American and English publications, which created problems for the students to relate to the contexts. Students and instructors emphasized that although students took English preparatory courses and passed their English Proficiency Exam, most of the students had difficulty studying in English. The more successful students were those who had attended English-medium secondary schools or those who had spent time abroad or with English speaking friends. One instructor said:

> *The text books we use are written for the people whose mother tongue is English. However, there are cultural, social and knowledge based differences between societies' perspectives. The content is even sometimes difficult for an English speaking person.*

One of the students similarly stated:

> *I would understand reasons to use American or English publications however, we expect the course content to have relavant examples to a Turkish perspective, and for example, I would like to learn Taxation in Turkey rather than Taxation in USA.*

Secondly, instructors and students stated that it was not a matter of "passing or failing the English Proficiency Exam" since the proficency level was assessed by standardized exams which were grammer based. One of the 3rd year students emphasized:

> *There is field-related English proficiency, which relates to "subject matter". However, when I took the profiency exam, it was just basic English, therefore, I started my freshman class without the necessary field-related vocabulary. For a native English speaker it isn't a problem. They have most of their reguired vocabulary.*

Another 4th year student supported the idea by saying

> *I used a dictionary throughout my university life, meaning although I passed English proficiency, I couldn't reach the reading and writing level of a native speaker. I spent at least double the time of a normal English speaking student. It is not fair.*

Students mentioned that due to their low proficiency in English they have problems understanding the content in detail and they tend to memorize parts of textbooks without clearly understanding them. Instructors stated that students tend to think in Turkish, but had to speak and write in English, therefore, they remain passive in class due to their lack of confidence. One 2nd year student described some of their class settings as "funny" and explained: "Proficiency is not always the problem. Sometimes we don't have any foreign students or instructors in class. We are all Turkish speakers however have the classes in English. It is the rules; however, it sounds and looks funny.

Most students described the classes as being "half English, half Turkish" in that, the instructor may start in English and finish in Turkish or vice versa. One 2nd year student gave an example: "Sometimes the language in class can not be classified as English or Turkish. It is English and Turkish words used together in one sentence." Another 1st year student said, "sometimes we ask questions in Turkish during the class, however, the instructor either does not answer or answers in English." Instructors said they could not violate the rules of an English-medium university.

Some students stated that they did not want to participate in the class discussions because their friends made fun of their English. Furthermore the instructor might concentrate on their English rather than their content proficiency. Supporting this situation, one instructor said, "I asked a question to a student, he asked me if he could answer in Turkish. I said 'No, this is an English-medium university' and he then did not answer my question." Most instructors believe that the classroom is the only environment in which the students have the opportunity to use their English; therefore they should be encouraged to speak English as much as possible. Instructors said they knew the difficulties in studying in English. They explain that they had the same experiences during their own education, but they appreciate those years now since their English proficiency has made it possible for them to teach in an English-medium university.

Instructors emphasized that even though classes were conducted in English, students' content expression should not be affected by their low English proficiency. Prep schools and Freshman English should be strengthened and should concentrate on conversational skills, as well as grammer. Students suggested that English-medium education should be supplemented with mother tongue clarifications. Likewise, there is a need for textbooks that are specifically geared toward English-

medium education as a second language. Moreover, students emphasized that instructors should be more proficient in English so that course content would not be neglected or diluted. English should not deter class discussions. Content should take priority and students should be aware that testing would be conducted in English. Therefore, content understanding could be relative to the native language, but expressed in English.

There were two opposing attitude among instructors regarding exams: one group stated that they were not language instructors and were not interested in grammer mistakes; they only assessed students' content knowledge. Another group believed they should decrease grades if there were language mistakes. Students stated that they sometimes knew the content, however, since they may not be able to express it in a "grammatically correct way" they were reluctant to talk or write.

Lastly, most students who had experienced being in an English-speaking environment emphasized that they were proud to be educated in an English-medium university. They felt confident, although they did express soem of the same concerns mentioned. One 4th year student explained that even if they had disadvantages during the academic years they started their professional life one-step ahead, since their English was superior when compared to students from other universities.

Conclusions and Recommendations

Certainly, it is a necessity with today's turbulent times and with the advent of globalization that the international community adopts a common language. "Globalization has encouraged the spread of English, but the spread of English also encouraged globalization (Graddol, 2007)." The imposition of English, though arbitrary, seems inevitable (at least for a time). This fact is almost guaranteed by the fact that English non-native speakers are increasing to be more abundant than native speakers (Hobson, 2005). This spiral of one language's increase is unheard of (with the exception of biblical discussions) and is certainly a "new phenomenon" (Coleman, 2006). As a result of the 5 to 1 ratio of non-native to native speakers, the issue of methodology by which the non-native speakers attain high proficiency is a subject of discussion. English-medium education is proving such results and is the method of choice when coupled with HE.

In this study, there are two prime reasons cited for English-medium higher education, according to the respondent's opinions: a) English is considered the leading international language; b) A person's employability and status increases when they are fluent in English. In fact, the instructors overwhelmingly believe that all students including primary, secondary, and university students should be schooled in English. With Turkish the national language and a majority of parents desiring that their children are educated in English-medium schools, Turkey's educational system has a dilemma to overcome. It literally must devote a high degree of its energy toward educating its students in a particular discipline while teaching them a foreign language. Learning English or any other foreign language in a native speaking environment is much more difficult than going to an English speaking country for the same purpose. However, in Turkey, as well as in the EU, students

attending English-medium universities rarely speak English outside of the class yet the results are outstanding.

Those who are involved in the English-medium process have expressed very pointed and opinionated feeling toward the whole experience. Instructors find fault with English-medium education in that they feel, to a degree, that they have been relegated into a language instructor and, by doing so, the prime subject matter has become diluted and of second importance. This also reflects in the student's opinions. They believe that the instructors are more efficient in English than they are in their own subject matter. However, both students and instructors support the basis for which the English-medium education is undertaken. In very basic terms, instructors and students differ in their need for English-medium education, with the instructors overwhelmingly supporting it and the students faulting it for lack of success. This success must be judged in the long run, not in the short term pane. English-medium education has been in place for over 30 years and those who have graduated from these programs are among the most successful individuals in Turkey and throughout the EU. Likewise, they now literally form their own community and assure that their children will continue on the same track. Even now, as these communities grow within Turkey, and within other countries, a paradigm shift is underway by which English is becoming a quasi-native language. This shift certainly may have a direct reduction on the total native speakers teaching in foreign settings as the non-native speakers children become native speakers. As was pointed out, "the new language which is rapidly ousting the language of Shakespeare as the world's lingua franca is English itself – English in its new global form" (Graddol, 2007).

Though the students and instructors find fault with the English-medium educational process, there are a number of theoretical rationales for teaching language skills with substantive content. Traditional approaches tend to "dissociate language learning from cognitive or academic development" (Snow, Met & Genesee, 1989), and there are considerable studies supporting the immersion model. Though the instructors believe that students in English-medium education lose their general creativity and experience a loss of self confidence, this sheer fact of predominance of former students tends to negate this opinion. However, the instructors state that they lose a degree of personal satisfaction. They feel that their prime role has become that of a language instructor rather than a teacher of their individual disciplines. This can also come to mean that the education in the post modern era has become a tool for creating and managing probable futures" (Summak, 2003). It is obvious that language proficiency should not be the prime role of instructors teaching in English-medium settings. In fact, it is the subject that is by far the most important part of education (Alexander, 1997), not talking to provide an English class. Unfortunately, both students and instructors in our study do not see it that way.

Considerable attention must be employed when conveying highly technical and complicated concepts (Judge, 1999). The concept may have to be unpacked "and then repackaged … in a manner appropriate to the concept scheme of the language." Of course, the student of English thinks in his or her native language and there is a lag time between hearing the spoken sentence and perceiving the intended conveyance.

In this regard, many students admit that their English skills are lacking to properly understand the subject matter in detail. The European Council (EC) Consultant Prof M. Ivanova (Personal communication, September 18, 2007) emphasizes:

> *As EC Consultants we visit various universities in Europe and if it is an English-medium university in a non-English speaking environment like Turkey, instructors should be aware of the dilemma and should allow more time for each course load compared to English-speaking university programmes.*

In order to reconcile the instructor's misgivings, as well as enhance student's performance, a middle ground should be found by which students can reach their potential. It is, therefore, recommended that special text be prepared for English-medium educational programs, or for any other language programs being used in a non-native environment. It should integrate subject matter, English text, and native language supplemental explanations. Lectures, class discussion, and testing should continue in English, thus retaining the prime advantages of immersion learning techniques. In this way, a student will find it necessary to continue to read and communicate concepts in a foreign language.

Public institutions, which educate the bulk of students in most countries, will submit to the rules that either legislated or set forth by bureaucratic policy or political dictates. There is a rising dissent to educating ones population in a foreign language, for a number of reasons. The main arguments are that, by doing so, there is a loss of ones national heritage found in native languages. But perhaps the most hotly contested is that it leads to the establishment of a separate society within that society. These fears are being tested in many cultural settings, all over the world. Within the EU, this is the "consequence of the further cohesion between the countries of the EC, and resulting development of a cosmopolitan culture by a part of the … elite" (Dronkers, 1993). Even though there are misgiving, 83% of the EU member states acknowledge the benefits to be realized by being multilingual.

Of course, if one expects to reap the benefits of high employability in an international setting, then there are dues that must be paid, both from the monetary and time associated with immersion programs. Total immersion leaves many with a "sink or swim" situation. The loss of content from the subject matter gives rise to concerns regarding the quality of the education, but they certainly are more employable and they do form an elite cosmopolitan society.

With new technology there comes new language. Only the mortar, which ties the old and new language together, gives meaning to new technology and is of importance in this study. Should new technology verbiage be a foreign language or should it be a person's native tongue? Of course, there are two benefits to be considered, one being the acquisition of a technical occupation and the second being able to sell that occupation to a receptive market, with the advent of globalization in an international market (Huppauf, 2004). At this point in Human history, with all of the cards stacked in favor of English, it stands to reason that, if opportunity presents itself, a student should learn in an English-medium educational program (Crystal, 2003). Within the European setting, the same reasoning is given for learning a foreign language (of

course, one which is indigenous to the continent): expressed as better job opportunities and the global prestigious associated within being able to converse in a second or third language (COM 2003). This study embraces the concept that students can't learn a language and then start using it, but they can and should using it during the learning process, or their education in the language will fail. Turkey should promote its language education by promoting the acquisition of even a second non-native language in order to have a head start on its own ascension into the global community.

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Eğitim Dili İngilizce Olan Yüksek Öğretim Kurumları: Çelişkiler ve Sorunlar

(Özet)

Problem Durumu:Eğer anadili İngilizce olmayan bir ülkeyseniz, uluslararası piyasalarda tutunmak için İngilizce öğrenmekten başka çareniz yoktur. Bunu sağlamak için geliştirilen eğitim politikalardan biri de, Türkiye'de olduğu gibi, eğitim dili İngilizce olan yüksek öğretim kurumları açmaktır.
Araştırmanın Önemi: Bu çalışma anadili İngilizce olmayan bir ülkede eğitim dili İngilizce olan bir üniversitede yapılmıştır. Öğrencilerin ve öğretim elemanlarının bakış açılarından yola çıkarak üniversite düzeyinde eğitimin İngilizce yapılmasının olumlu veya olumsuz etkileri değerlendirilmiştir. Çalışmada öğrencilerin ve öğretim elemanlarının sisteme bakış açıları, yabancı dil yeterlilikleri ve eğitimin İngilizce olmasına karşı tutumları baz alınarak incelenmiştir. Ayrıca sistemin iyileştirilmesi için deneklerin önerileri istenmiştir.
Araştırmanın Yöntemi: Veri toplamada ve analizinde hem niteliksel hem niceliksel metotlar kullanılmıştır. Çalışma 'rastgele örnekleme' yöntemiyle seçilen, 1011 öğrenci ve 117 öğretim elemanı ile yapılmıştır. Seçilen örneklem hem öğrenciler hem de öğretim elemanları açısından her fakültenin %10'nunu oluşturmaktadır. Veriler her birisi açık uçlu ve kapalı uçlu sorulardan oluşan öğrenci ve öğretim elemanı anketleri kullanılarak toplanmıştır. Kapalı uçlu sorularda çoktan seçmeli ve likert tipi ölçek kullanılmıştır. Daha detaylı bilgi toplayabilmek için araştırma anadilde

yapılmıştır. Veriler niteliksel ve niceliksel analiz yöntemleri kullanılarak değerlendirilmiştir.

Araştırmanın Bulguları: Bulgular, öğrencilerin yüksek öğrenim sürecinde kendilerini dezavantajlı bir konumda gördüklerini ve bunun aslında İngilizcede yetersiz olduklarını düşünmelerinden kaynaklandığını göstermektedir. Bunun yanısıra, her iki denek grubu da sistemin geliştirildiği takdirde sadece Turkiye'deki öğrenciler için değil bütün Avrupa Birliği ülkeleri için daha yararlı olacağına inandıklarını belirtmişlerdir.

Araştırmanın Sonuçları ve Önerileri: Öğretim elemanları, öğrencilerin performans potansiyellerini yükseltmek için sistemin olumlu ve olumsuz yönlerini dengeliyen bir orta yolun bulunmasını önermişlerdir. Bu bağlamda, eğitim dili İngilizce olan kurumlarda kullanılan materyallerin özel olarak "anadil dışında eğitim gören" öğrencilere uygun olarak hazırlanması önerilmektedir. Bu materyaller, alan bilgisinin yanısıra İngilizce metinler ve anadilde ek açıklamalar içermelidir. İngilizce eğitim almanın avantajlarından ödün verilmemek için, ders anlatımı sınıf içi tartışmalar ve sınavlar İngilizce olmalı ki öğrenciler yabancı bir dilde okumanın ve iletişim kurmanın gerekliliğine inansınlar. Bütün bu önerilerin yanısıra, Avrupa Birliğinin "iki yabancı dil konuşan vatandaş" standardına parallel olarak, Türkiye dil eğitimini, İngilizce'nin yanısıra ikinci bir yabancı dili dahi öğretecek şekilde teşvik etmeli ve böylece küreselleşme sürecine daha etkin katılmayı olanaklı kılmalı.

Anahtar Sözcükler: Eğitim dili olarak İngilizce, Yüksek öğretim, Avrupa Birliği politikaları

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Organizational Citizenship Behaviors of Teachers in Vocational High Schools

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Abstract

Problem Statement: Since the establishment of the Turkish Republic, vocational and technical education in the country has become one of the major issues in the education system. Characteristics and the quality of teachers are important for school organizations. Organizational behaviors of teachers are determinatives of the success of the schools. Organizational citizenship behaviors constitute the dimension of behaviors of teachers in schools. However this dimension affects other elements of behavior and is affected by behaviors of teachers.

Purpose of research: The aim of this research is to determine the level of organizational citizenship behavior of teachers working in vocational and technical high schools in Turkey.

Method: The research consisted of 651 teachers who work for vocational and technical high schools. The sample was selected using the stratified sampling method, during the 2007-2008 Academic Year. In the calculation of the data, frequency, and percentage, the Sperman Brown Correlation coefficient and Manova Multi Variable Variance Analysis have been used.

Results: Organizational citizenship behaviors of teachers are low. According to the variable, it is understood that male teachers, those with a graduate degree, and those working in the industry of vocational high schools displayed behaviors at a higher level than other high school teachers. The teachers over 21 years of seniority had the lowest average.

Suggestions: According to the obtained results from this study, some suggestions are presented. Organizing activities which consolidate organizational integration, taking precautions for achievement, declaring

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the expectations for success, and creating an organizational culture can develop the citizenship behaviors of the teachers. Conducting scientific surveys, with regard to the relationship between the organizational citizenship behaviors of the teachers and the organizational socializing, culture, rewarding, etc., can make a contribution to the literature. Principals should receive in-service training regarding school management and leadership

Keywords: Organization, organizational citizenship, vocational and technical high school, teacher

Vocational and technical education has been one of the basic subjects of the educational system in Turkey since the establishment of the Republic. With a rapid decrease in the number of students, policies being continued by the educational decision makers have been insufficient to fix the ongoing problems (Ministry of Education [MEB], 1999). The success of a system is closely related with the quality of the input. The school organization should be able to use input during the educational process in the most efficient conditions. The executives of this system are the teachers. The qualifications of the teachers and the physical and abstract conditions of the school environment directly affect the teachers in the education process. The organizational behaviors of the principals and the teachers can be the basic characteristic of this process. Organizational citizenship behavior forms one dimension of the behaviors of teachers in school and this dimension affects other behavioral elements.

When reaching organizational goals, leaders generally are most interested in the results, as a reflection of the success of the members of the organization. The resources related with the leadership, the requirements of being a leader, and the organizational goals are the most important subjects. In fact, the citizenship of the members of the organization is at the base of the organizational success (Brightman & Moran, 1999). Organizational citizenship behaviors are shown by the employees voluntarily, outside of the predetermined work and roles (Organ, 1988; Schnake & Dumler, 2003). These behaviors develop voluntarily (Lievens & Anseel, 2004) and according to personal preferences (Penner, Midili & Kegelmeyer, 1997).

Organizational citizenship behaviors are not included in the job descriptions and there are no sanctions due to these behaviors (Podsakoff, Mackenzie, Paine & Bachrach, 2000). This behavior is termed by Organ as a Good Soldier Syndrome (Podsakoff, Ahearne & MacKenzie, 1997). It increases the cooperation within the organization and also increases the work performance by improving the sense of responsibility (Niehoff & Moorman, 1993; Jahangir, Akbar & Haq, 2004). Organizational citizenship behavior is studied in scientific research because it is an important factor in organizational activities (Podsakoff et al., 1997). Therefore, it has first been studied in fields such as human resources management, economics, and health (Lievens & Anseel, 2004). Cohen and Vigoda (2000) specify that these behaviors have a positive effect on the organizational effectiveness and efficiency.

There is a relationship between personal characteristics, work satisfaction (Organ & Lingl, 1995), organizational variables (Penner et al., 1997), performance (Allison, Voss & Dryer, 2001), organizational commitment, values (Feather and Rauter, 2004), organizational learning (Somech & Drach-Zahavy, 2004), justice, commitment (Ertürk, Yılmaz & Ceylan, 2004), and organizational citizenship. Deluga (1994) and Samanci, (2007) specify that organizational citizenship behavior is related to the organizational trust. Farh, Zhong, and Organ (2004) have regarded the basic dimensions of citizenship behavior as a nested set group and have specified these groups as individual, group, organization, and society.

Even if organizational citizenship behavior is not required by the management of the organization, it has a strategical importance in the continuation of the activities of the organization (George, 1999) because this behavior affects the performance of the organization (Bachrach, Bendoly, & Podsakoff, 2001). For this reason, Mackenzie, Podsakoff, and Ahearne (1998) have a mutual agreement on the necessity of evaluating organizational success and of measuring the performances of the employees as important elements in the research of organizational citizenship behavior. Organ has specified these behaviors as a general harmony and selflessness in the first step (Bateman & Organ, 1983). Later, he specified the behaviors under five basic headings (Organ, 1988):

Altruism: The member's unreturned and voluntary help to other members working toward a solution for the problems faced within the organization. In other words, this means to support one's the colleagues whenever required (Podsakoff & MacKenzie, 1994). This is done on behalf of the organization. An example of this is to help colleagues who fall behind in their jobs (Schnake & Dumler, 2003).

Civic virtue: This is the active and voluntarily participation in the organizational activities (Podsakoff & MacKenzie, 1994). In this type of behavior, the organization's benefits to its members is the most important element (Allison, et al, 2001) and the most important requirement is that the employees should be highly committed to the organization (Podsakoff et al., 2000). Some examples as this kind of behavior are: that the individuals are continuously active within the organization, participating in the activities which develop the image of the organization, continuously participating in the meetings, and keeping up with the developments within the organization (Elçi & Alpkan, 2006).

Conscientiousness**:** This is when the members of the organization exhibit positive behavior above what is expected (Allison et al., 2001). In this type of behavior, the employees fulfill their roles in line with the regularity, participation, and harmony of the organization rules (Farh, Earley & Linn, 1997). Some examples of this kind of behavior are to participate in the meetings, not to take extended break times, and to work extra after normal working time (Podsakoff, Mac Kenzie & Hui, 1993).

Gentlemanliness: This is to spend effort on preventing any negation which can occur within the organization (Organ, 1988): to be patient with present problems in the organization and not to complain about them (Organ, Podsakoff & MacKenzie, 2006). This type of behavior also means not to exaggerate the faced problems (Allison

et al., 2001), endure the difficulties with ease (Deluga, 1994) and avoid complaining and improves the amount of time spent on constructive endeavors in the organization (Jahangir et al., 2004).

Courtesy: This is when an employee is aware of the problems and needs of other employees. They can propose solutions and ways to prevent the problem in the future (Allison et al., 2001). This type of behavior is also specified as keeping the employees informed in order to prevent business related problems from occurring (Organ & Lingl, 1995). It also includes making an effort to create and maintain positive communication within the organization (Organ, 1988).

The increase in the work performance of individuals is an important element for managers in order to achieve goals. In this respect, that the teachers display citizenship behaviors may contribute to the more effective realization of successful educational services. However, there is no available research regarding citizenship behaviours in vocational and technical high school teachers in Turkey. Research of this manner will greatly contribute to the current existing literature. The organizational success of vocational and technical high schools is closely related to the behavior of the teachers. The purpose of this research is to determine the quality of organizational citizenship behavior in teachers at vocational and technical high schools and to develop proposals regarding solutions to the found problems.

Method

A descriptive method, based on screening, was used in this study.

Sample

This study consisted of teachers from vocational and technical high schools in the central counties of the Ankara province. The sample was selected using the stratified sampling method, during the 2007-2008 Academic Year. It is stated that in the stratified sampling method, a representation of sub-groups can be guaranteed (Balcı, 2004). Each of the eight counties of Ankara was accepted as a stratum. The number of teachers in each county was accepted to represent a sample according to its ratio in society. 651 teachers from 72 vocational and technical high schools connected to the central counties participated in the research.

Instrument

In the research, the teachers' level of organizational citizenship behavior was measured using the organizational citizenship behaviors scale developed by Smith, Organ, and Near (1983). In addition, the comparative scale application study, developed by Basim and Sesen (2006), was used. The questionnaire included five sub categories: Altruism, Civil Virtue, Conscientiousness, Gentlemanliness, and Courtesy. The organizational citizenship behaviors scale was translated from English to Turkish and the opinions of English and Turkish language experts were considered during the adaptation process. Later, the Turkish questionnaire was translated back into English and was re-evaluated by the experts. The obtained scale

was compared with the study of Basım and Sesen and with similar articles. Later, it was re-translated back to Turkish by English teachers and the questionnaire was finalized. The prepared survey employed the five-likert grading scale.

Data Analyses

The teachers who participated in the survey identified their answers using the options "Never" (1), "Seldom" (2), "Occasionally" (3), "Often" (4) and "Always" (5). In order to determine the reliability of the questionnaire, a pre-application was made for over 60 teachers; 20 teachers from 3 different school types. The questionnaire was re-arranged according to the results of the pre-application. Cronbach's alpha reliability coefficient was 0.93. The scale was found to be reliable so, the reliability was considered to be sufficient. In the calculation of the data, the frequency (f), percentage (%), the Sperman Brown Correlation coefficient, and the Manova multi variable variance analysis were determined. The results have been tested at the $p<.01$ and $p<.05$ level.

Findings and Results

The types of high schools at which the teachers were working were distributed as: 35.1% Vocational High School for Girls, 24.9% Industry Vocational High Schools, and 40% Trade and Tourism Vocational High Schools. 71% of the teachers were teachers of vocational and technical lessons and 29% of them were teachers of general culture. The experience of the teachers was: 8.6% in between 1 and 5 years, 19.5% in between 6 and 10 years, 27% in between 11 and 15 years, 25.9% in between 16 and 20 years, and 18.9% more than 21 years. 4.9% of the teachers had a post graduate diploma and 95.1% of the teachers had graduate diplomas. 57.3% of the teachers were women and 42.7% of them were men.

Table 1

Correlations of the Sub Dimensions with Each Other

		Altruism	Courtesy	Civil virtue	Conscientiousness	Gentlemanliness	Coefficient of reliability	Number of item
Altruism	Coefficient of correlation	1.000					α.78	4
	p	.						
Courtesy	Coefficient of correlation	0.777(**)	1.000				α.82	4
	p	0.000	.					
Civil virtue	Coefficient of correlation	0.543(**)	0.630(**)	1.000			α.77	4
	p	0.000	0.000	.				
Conscientiousness	Coefficient of correlation	0.564(**)	0.638(**)	0.518(**)	1.000		α.86	5
	p	0.000	0.000	0.000	.			
Gentlemanliness	Coefficient of correlation	0.644(**)	0.705(**)	0.652(**)	0.712(**)	1.000	α.87	6
	p	0.000	0.000	0.000	0.000	.		
							Total α.95	Total 23

*p <0.01

When the sub dimensions' correlations with each other were analyzed, it showed that positively directed, high level relations exist. For example, a high level of a positive directed relation of 0.78 has been observed between Altruism and Courtesy ($p<0.01$). As the positive views increased for the Altruism sub dimension, positive opinions in the Courtesy scale also increased. However, the relation in between the Conscientiousness and Civil Virtue sub dimensions (0,51; $p<0.01$) is positive but is at the lowest level.

Table 2

Group Averages of Teachers

Variables	Altruism	Courtesy	Civil virtue	Conscientiousness	Gentlemanliness
Gender					
Female	6.84	6.91	6.76	7.49	10.20
Male	8.49	8.25	8.28	9.53	12.15
Total	7.55	7.48	7.41	8.36	11.03
Education					
Undergraduate	7.29	7.16	7.13	7.97	10.58
Graduate	12.56	13.78	13.00	16.00	19.89
Total	7.55	7.48	7.41	8.36	11.03
Type of School					
Trade Tour.V.H.S	7.39	7.17	7.19	7.93	10.52
Ind.Voc. H.School	8.86	8.70	8.68	10.49	12.95
Girl Voc.H.School	7.00	7.18	6.97	7.71	10.60
Total	7.55	7.48	7.41	8.36	11.03
Branch					
Vocational and technical	7.63	7.74	7.68	8.78	11.63
Liberal education	7.42	7.09	7.01	7.73	10.14
Total	7.55	7.48	7.41	8.36	11.03
Length of Service					
1-5 years	8.63	8.69	819	10.94	13.31
6-10 years	8.53	8.14	7.97	8.81	11.86
11-15 years	7.73	7.96	8.04	9.06	10.06
16-20 years	6.96	6.78	7.02	7.40	11.92
21 years and plus	6.63	6.60	6.17	7.14	9.31
Total	7.55	7.48	7.41	8.36	11.03

When the general averages of the data were evaluated, it was understood that the teachers seldom exhibit organizational citizenship behavior in the dimensions of Altruism ($\overline{X}$:7.55), Courtesy ($\overline{X}$:7.48), Civic virtue ($\overline{X}$:7.41), and Gentlemanly behavior ($\overline{X}$:11.03) and that they never exhibit the dimension of conscientiousness

($\overline{X}$:8.36). When altruistic behavior was analyzed in terms of an independent variable, Altruism of those teachers that have a master degree rose to "occasionally" ($\overline{X}$:12.56). Meanwhile, those teachers who are women ($\overline{X}$:6.84), who have a bachelor's degree in terms of educational status ($\overline{X}$:7.29), who work in vocational high schools for girls ($\overline{X}$:7.00), and who have worked 11-15 years ($\overline{X}$:6.96) and 21 years or more ($\overline{X}$:6.63) never show Altruism. When Courtesy was analyzed according to independent variables, those teachers who have master degrees show this behavior often ($\overline{X}$:13.78). Those teachers who are women ($\overline{X}$:6.91), who have a bachelor's degree ($\overline{X}$:7.16), who teach general culture ($\overline{X}$:7.09), who work in vocational high schools for girls ($\overline{X}$:7.18) and high schools of commerce ($\overline{X}$:7.17), and who have worked 11-15 years ($\overline{X}$:6.78) and 21 years or more ($\overline{X}$:6.60) never exhibit this behavior. When Civic virtue was analyzed according to independent variables, those teachers who have master degrees show this behavior occasionally ($\overline{X}$:13.00). Those teachers who are women ($\overline{X}$:6.76), who have a bachelor's degree ($\overline{X}$:7.13), who teach general culture ($\overline{X}$:7.01), who work in vocational high schools for girls ($\overline{X}$:6.97) and high schools of commerce ($\overline{X}$:7.19), and who have worked 11-15 years ($\overline{X}$:7.02) and 21 years or more ($\overline{X}$:6.17) never exhibit this behavior. When Conscientiousness was analyzed according to independent variables, it is understood that those teachers who are men ($\overline{X}$:9.53), who work in industrial vocational high schools ($\overline{X}$:10.49), and who have worked 1-5 years ($\overline{X}$:10.94) and 16-20 years ($\overline{X}$:9.06) seldom show this behavior. Those teachers who have master degrees occasionally exhibit conscientiousness behavior ($\overline{X}$:16.00). When Gentlemanliness was analyzed according to independent variables, only those teachers who have master degrees occasionally show this behavior ($\overline{X}$:19.89). Those teachers who are women ($\overline{X}$:10.20), who have bachelor's degree ($\overline{X}$:10.58), who work in vocational high schools for girls ($\overline{X}$:10.60) and high schools of commerce ($\overline{X}$:10.52), who work in the field of general culture ($\overline{X}$:10.14), and who have worked 11-15 years ($\overline{X}$:10.06) and 21 years or more ($\overline{X}$:9.31) never exhibit gentlemanly behavior.

When the variables were evaluated according to all of the sub-dimensions, it was understood that those teachers who are women, who have bachelor's degrees, who have worked 11-15 years and 21 years or more never display organizational citizenship in any of the sub-dimensions. The organizational citizenship of those teachers who have master degrees was higher compared to the other variables.

Table 3

Variance Analysis (Manova) Results about the Opinions of the Teachers Related with the Subject

Kaynak	Dependent variable	Sum of squares	SD	Average of the square	F	P	Difference
Gender	CV	26.306	1	26.306	4.547	**0.035**	(p<0.05)
	Cons.	41.034	1	41.034	6.084	**0.015**	p<0.05
Education	A	60.582	1	60.582	8.610	**0.004**	
	Cour.	79.692	1	79.692	13.655	**0.000**	
	CV	56.527	1	56.527	9.771	**0.002**	
	Cons.	84.227	1	84.227	12.488	**0.001**	
	G	177.802	1	177.802	14.598	**0.000**	p<0.05
Type of School and Gender	G	79.413	2	39.706	3.260	**0.042**	p<0.05
Branch and Length of Service	A	89.866	4	22.467	3.193	**0.015**	p<0.05
	Cour.	69.291	4	17.323	2.968	**0.022**	p<0.05
	CV	49.404	4	12.351	2.135	0.080	p>0.05
	Cons.	28.526	4	7.131	1.057	0.380	p>0.05
	G	128.787	4	32.197	2.643	**0.036**	p<0.05
Type of School Branch and Length of Service	A	84.314	6	14.052	1.997	0.070	
	Cour.	62.896	6	10.483	1.796	0.105	
	CV	87.173	6	14.529	2.511	0.025	p>0.05
	Cons.	93.345	6	15.557	2.307	**0.038**	p<0.05
	G	153.743	6	25.624	2.104	0.057	p>0.05
Gender and Length of Service	A	52.314	4	13.078	1.859	0.121	
	Cour.	25.133	4	6.283	1.077	0.371	
	CV	37.593	4	9.398	1.624	0.172	
	Cons.	30.269	4	7.567	1.122	0.349	p>0.05
	G	120.858	4	30.214	2.481	**0.047**	p<0.05

*p<0.05

The teachers' opinions of organizational citizenship behaviors have been tested by the Variance Analysis with Multiple Variables (MANOVA). According to the obtained results, no meaningful difference has been found between branch and gender; between type of school, branch, and gender; or between type of school and working period. However, a meaningful difference has been found in the measured results, between Conscientiousness and Civil virtue according to gender. A

meaningful difference at all of the sub dimensions was found regarding the education level. The opinions given for Gentlemanliness were affected by the type of school and the gender variables. Branch and working period together affect the opinions given of Altruism, Courtesy, and Gentlemanliness. The type of school, branch, and working periods together affect the opinions given of Conscientiousness. Gender and working period together affect the opinions given of Gentlemanliness.

Conclusions and Recommendations

The purpose of this research was to determine the levels of organizational citizenship behavior in teachers who are on duty at vocational and technical high schools. According to the obtained results, it has been understood that the organizational citizenship behaviors of teachers at vocational and technical high schools are at a low level. When the averages were evaluated according to the variables, it is observed that the more the education level increases, the more citizenship behaviour develops; the more the length of service increases, the less citizenship behaviours develop. The citizenship behaviors of the general knowledge teachers are at a lower level than that of the branch teachers, but Gentlemanliness is at a higher level. The employees' display of organizational citizenship behaviors is a factor which increases both their performance and productivity and the organizations performance and productivity (Özdevecioğlu, 2003). The low display of citizenship behavior by the teachers can also be said to affect the already bad condition of the vocational high schools today. According to the surveys on vocational high schools, it is indicated that teachers' motivation, work satisfaction, etc. is very low; this level is far lower when teachers of general knowledge are considered (Kocatürk, 2007; Sadıkoğlu, 2007, Emeksiz, 2003). According to Smith, Organ, and Near, since extroverted individuals are more sensitive toward their external environment and social stimulants, they are more inclined to show organizational citizenship behaviors. The personal characteristics of teachers who displayed citizenship behaviors included feeling energetic, ambitious, and successful and having the ability to think abstractly (Yücel & Kaynak, 2008). It can also be said that personal and psychological characteristics are as important as the organizational conditions. The results concerning citizenship behaviors according to gender are incompatible with those obtained by Celep, Polat, Elbir and Yapici (2004) and Cetin, Yesilbag, and Akdag (2003), mentioning that the organizational citizenship behavior of males are higher than females. Nevertheless, in the study performed by Cetin et al., it was observed that the teachers having longer working periods in high schools exhibit less citizenship behavior in Conscientiousness. It can be said that younger teachers are more flexible in meeting their requirements within the organization than older teachers who show more strict behaviors (Jahangir et. al., 2004). In addition, the stress and burnout may cause a decrease in performance, desensitization, and, as a result, a decrease in motivation (Ozden, 2001). Also, the harmony among individuals and the organization affects the citizenship behavior in a positive manner (Cheng, 2004). The image of the organization is closely related with the job satisfaction,

motivation, commitment to the organization, and performance of the employees (Vigoda- Gadot & Ben-Zion, 2004), the justice perception of the teachers, leadership properties of the administrators, the qualification of the relations in between teachers and the school administration, support received from administration affect the organizational citizenship behavior (Cheng, 2004). Also, the participation of the teachers in the decision process positively affects behavior (Somech, 2007). So, when principals provide participation opportunities for the teachers, citizenship behaviors develop at a faster rate (Bogler & Somech, 2005). In the surveys conducted with the vocational high school principals it was observed that the principals do not adequately realize the managing processes (Kasım, 2008), and that their unethical behaviours negatively affect the work satisfaction and success of the teachers and cause exhaustion (Selimoğlu, 2008). According to the social learning theory, individuals form their behaviors by observation (Bandura, 1986). According to the social information processing theory, individuals show the behaviors they observe and the ones approved by the society (Salancik & Pfeffer, 1978). Teachers may not observe the expected citizenship behaviors from their colleagues or these behaviors may not be accepted by society. Thus, it can be said that the low level of citizenship behavior is an established culture. Vigoda-Gadot, Beeri, Birman & Somech (2007) argue that the citizenship behaviors of the teachers should be the good platoon syndrome. If the teachers are led to observe and realize the citizenship behaviors as a team, the other teams at school will be impressed and follow suit, leading to the success of the school. The teachers whose organizational citizenship feelings are strong should use their abilities in line with the aims of the school (Dipaola & Hoy, 2005). The responsibility of the principal is to create a vivid school environment which will ensure these behaviors. Principals are the leaders who should ensure change and progress. Smith, Organ, and Near (1983) state that the support of the leader is directly related to the display of organizational citizenship behaviors. As a result, the principals are needed as the solution to the problem. An organizational culture aimed toward achieving the highest quality is required for attaining success and reaching goals (Sahin, 2008).

Suggestions

According to the obtained results some suggestions can presented. Organize activities which consolidate organizational integration. Take precautions for achieving organizational success. Declare the expectations of the teachers through evaluations. Take precautions for motivating teachers to be successful. By making this as an organizational culture, schools can develop teachers who display the desired behaviors. Conduct scientific surveys regarding the relationship between teachers' behavior and organizational systems such as socializing, culture, rewarding and communication, personality characteristics, and the competency levels of the teachers and principals. Comparing the citizenship behaviors of the teachers at schools having a low level of success and schools having a high level of success would be an important contribution to the literature. The principals' periodically receiving in-service training on leadership, human relations, sociology, philosophy,

new management approaches, etc. can have a positive impacts on their relationships with the teachers, in turn affecting the success of the schools.

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Meslek Lisesi Öğretmenlerinin Örgütsel Vatandaşlık Davranışları

(Özet)

Problem Durumu: Türkiye'de mesleki ve teknik eğitim Cumhuriyetin kuruluşundan bu yana eğitim sisteminin temel konularından biri

olmuştur. Öğrenci sayılarındaki hızlı düşüş, eğitim karar vericilerinin, mesleki ve teknik eğitim alt sisteminde sürdürdüğü politikalar günümüze kadar süregelen sorunların çözümünde yeterli olamamıştır. Bu olumsuz sürecin milli eğitim şuralarında, kalkınma planlarında ve hükümet programlarında değerlendirilmesi ve tartışılması; bakanlık uygulamalarının çoğunluğu, öğrenciler üzerine olmuştur. Ancak sistem çıktısı olan öğrencinin süreç içinde birlikte olduğu, uygulamalarından etkilendiği öğretmenler, karar vericilerin dikkatini yeterince çekememiştir. Bir sistemin başarısı, sistemin girdilerinin niteliği ile yakından ilgilidir. Okul örgütü de eğitim sürecinde girdilerini en olumlu koşullarda kullanabilmelidir. Bunun uygulayıcısı da öğretmenlerdir. Öğretmenlerin niteliği, özellikleri ve okul örgütü içinde karşılaştığı soyut ve somut koşullar, öğretmenlerin eğitim sürecindeki etkisini yönlendirecektir. Okul yöneticileri ve öğretmenlerin örgütsel davranışları niteliğin temel belirleyici olabilmektedir. Örgütsel vatandaşlık davranışları ise örgütün verimliliğini sağlamada yardımcı olan, gönüllülüğe dayalı davranışlardır ve kişisel tercihe dayalıdır. Örgütsel vatandaşlık davranışları eğitimde niteliği artırıcı ve eğitimde etkiliğe neden olan davranışlardır.

Araştırmanın Amacı: Bu araştırmanın amacı; mesleki ve teknik liselerde görev yapan öğretmenlerin, örgütsel vatandaşlık davranış düzeylerinin belirlenmesidir.

Araştırmanın Yöntemi: Çalışmanın evrenini Ankara ili merkez ilçelerinde bulunan mesleki ve teknik liselerde görevli öğretmenler oluşturmaktadır. Araştırmada, tabakalı örnekleme yoluyla örneklem seçilmiş ve Ankara'nın sekiz merkez ilçesinin her biri, bir tabaka olarak kabul edilmiştir. Her bir ilçede yer alan öğretmen sayısının, toplam içindeki oranına göre araştırma örnekleminde temsil ettiği kabul edilmiştir. Araştırmaya merkez ilçelere bağlı 72 mesleki ve teknik liseden 651 öğretmen katılmıştır. Öğretmenlerin örgütsel vatandaşlık davranış düzeyleri; Smith, Organ, & Near (1983) tarafından geliştirilen örgütsel vatandaşlık davranışları ölçeği ile Basım ve Şeşen (2006) tarafından karşılaştırmalı ölçek uyarlama çalışması kullanılarak ölçülmüştür. Ankette örgütsel vatandaşlık davranışları beşli Likert ölçeği ile ölçülmüştür. Verilerin hesaplanmasında frekans (f), yüzde (%), Sperman Brown Korelasyon katsayısı, Manova çok değişkenli varyans analizi kullanılmıştır. Sonuçlar $p<.01$ ve $p<.05$ düzeyinde test edilmiştir.

Araştırmanın Bulguları: Araştırma sonuçlarına göre mesleki ve teknik liselerde görev yapan öğretmenlerin örgütsel vatandaşlık davranışlarını; diğerkamlık, nezaket, sivil erdem, centilmenlik boyutunda "nadiren" gösterdikleri; vicdanlılık boyutunda ise "hiç" göstermedikleri sonucuna ulaşılmıştır. Öğretmenlerin örgütsel vatandaşlık davranışları değerlendirildiğinde; erkek öğretmenler kadın öğretmenlere göre az da olsa daha olumlu algılara sahiptir. Eğitim durumuna göre incelendiğinde; lisans derecesine sahip öğretmenlerin davranışı düşük, yüksek lisans derecesine sahip öğretmenlerin ise orta düzeydedir. Okul türüne göre

incelendiğinde; endüstri meslek lisesi öğretmenlerinin ortalamaları üç okul türü birlikte değerlendirildiğinde az da olsa yüksek görünmektedir. Öğretmenler branşlarına göre değerlendirildiğinde; mesleki ve teknik öğretmenlerin davranışları daha yüksek görünmektedir. Kıdemlere göre incelendiğinde ise 1-10 yıl kıdemi olan öğretmenlerin, daha fazla kıdeme sahip öğretmenlere göre daha olumlu algıları olduğu belirlenmiştir. Araştırmada en yüksek ortalama yüksek lisans mezunu öğretmenlerde görülmüştür. En düşük ortalama ise 21 yıl ve üzeri kıdeme sahip öğretmenlerdedir. Eğitim durumuna göre tüm alt boyutlarda anlamlı fark bulunmaktadır. Okul türü ve cinsiyet ikisi birlikte etkileşimleri söz konusu olduğunda centilmenlik alt boyutuna verilen görüşler etkilenmektedir. Branş ve kıdem değişkenin ikisi birlikte diğerkâmlık, nezaket ve centilmenlik alt boyutlarına verilen görüşleri etkilemektedir. Okul türü, branş ve kıdem değişkenin üçü birlikte görev bilinci alt ölçeğine ilişkin görüşleri etkilemektedir. Cinsiyet ve kıdem değişkenin ikisi birlikte centilmenlik alt boyutuna verilen görüşleri etkilemektedir.

Araştırmanın Sonuçları ve Önerileri: Bu araştırmanın amacı; mesleki ve teknik liselerde görev yapan öğretmenlerin, örgütsel vatandaşlık davranış düzeylerinin belirlenmesiydi. Araştırma sonuçlarına göre mesleki ve teknik liselerde görev yapan öğretmenlerin örgütsel vatandaşlık davranışlarının düşük düzeyde olduğu sonucuna ulaşılmıştır. Ortalamalar değişkenlere bağlı olarak değerlendirildiğinde; eğitim düzeyi yükseldikçe vatandaşlık davranışının arttığı; kıdem yükseldikçe vatandaşlık davranışının azaldığı; genel kültür öğretmenlerinin vatandaşlık davranışlarının branş öğretmenlerine göre daha düşük düzeyde olduğu; centilmenlik davranışının diğer davranışlara göre yüksek düzeyde olduğu sonucuna ulaşılmıştır. Araştırma sonuçları kuramsal bilgiler ve yapılan diğer bilimsel araştırmalarla uyumludur. Mesleki teknik liselerde okul yöneticilerinin örgütsel bütünleşmeyi sağlayıcı etkinlikler düzenlemesi, öğretmenleri başarıya güdüleyici önlemler alması öğretmenlerin vatandaşlık davranışını geliştirebilir. Öğretmenlerin örgütsel vatandaşlık davranışının, örgütsel sosyalleşme, ödüllendirme ve iletişim ile ilişkisi; öğretmenlerin ve müdürlerin yeterlilik düzey, kişilik özellikleri; başarısı düşük ve yüksek olan okullarda öğretmenlerin vatandaşlık davranışlarının karşılaştırılmasına yönelik bilimsel araştırmaların yapılması literatüre katkı sağlayabilir. Okul yöneticilerinin belirli sürelerle liderlik ve yeni yönetim yaklaşımları vb. konularda hizmetiçi eğitim almaları, öğretmenlerle ilişkilerinde olumlu kazanımlar sağlayabilir.

Anahtar sözcükler: Örgüt, örgütsel vatandaşlık, mesleki ve teknik lise, öğretmen

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The Construct Validity, Reliability of Self-Perception Profile for Adolescents: Original versus Revised Version

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Abstract

Problem situation: Harter's Self-Perception Profiles have a central position among multi-dimensional measurement instruments and are used frequently in studies of self. Harter's Self-Perception Profile for Adolescents (SPPA), developed for 14-18-year olds, measures self-perception with eight sub-dimensions including scholastic competence, athletic competence, social acceptance, close friendship, romantic appeal, job competence, physical appearance, behavioral conduct, and global self-worth interwoven with other dimensions. Despite its common use, there are some concerns about the scale's questionnaire format as well as its construct validity.

Purpose of the study: Taking its common use and criticisms into consideration, the aim of the study is to explore the construct validity and reliability of the more appropriate version of the SPPA for Turkish culture, the original or revised version.

Method: After having the instrument translated, the original version was applied to 366 adolescents and the revised version to 395. The exploratory factor analysis was carried out and the results were compared for the two versions. The factor structure of the version, which yielded more satisfactory results, was tested by confirmatory factor analysis with a different sample (N=279). Internal consistency and test-retest reliability studies were conducted on data collected from 110 adolescents.

Findings and results: The comparison of the exploratory factor analysis results of the SPPA's original and revised versions showed that the factor

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structure of the latter was more consistent with Harter's factor structure. Based on the results of the exploratory factor analysis of the revised version, the dimensions that Harter's version took place under the seven factors (romantic appeal, flirt preferences, athletic competence, physical appearance, social acceptance/close friendship, behavioral conduct/scholastic competence and job competence) with 32 items. However, model-data fit indices (χ^2=665.54 (N=279, sd=386, p=.00), χ^2/sd=1.69 RMSEA=0.050, RMR=0.069, GFI=0.86, AGFI=0.84 and CFI=0.86) of the CFA indicated that the revised SPPA has a reduced number of 30 items with a six-factor structure (exclude flirt preferences). The Cronbach-alpha coefficient for subscale coefficients ranged between .56 and .78; the r values for test-retest reliability in subscales ranged between .60 and .93.

Conclusions and recommendations: The revised SPPA is a valid and reliable measure of the different dimensions of self-concept for Turkish adolescents. However, future studies will better disclose the psychometric properties of the scale within the Turkish culture.

Keywords: Self-perception, adolescence, revised version.

The self was defined for the first time by William James (1893) as a ratio of an individual's successes to his or her pretensions. Studies focusing on the self accelerated greatly thereafter. Following James' definition, Cooley (1902) added a social dimension to the definition and defined the self as the internalization of others' reactions to oneself. However, it was not until the 1950s, that self-concept was defined as a cognitive as well as an affective construct and subsequently, instruments for measuring the self-concept started to emerge. Rosenberg (1965) and Coopersmith's (1967) pioneering scales, developed in line with James and Cooley's definitions, measured a global self-concept with cognitive and affective constructs as one dimension. In recent scales, self-concept is seen as a part of a large self system built on a cognitive base (cited in: Keith & Bracken, 1996). As a reaction to the complaints that one single dimension does not reflect specific characteristics, multi-dimensional approaches measuring the different dimensions of self-concept have started to appear (Thomson & Zand, 2002). Harter (1988; 1996) maintains that self-concept is a multi-dimensional system and as individuals develop, new self images appear and crystallize. Therefore, the self-concept scales developed by Harter include sub-dimensions relating to different life stages.

Within the multi-dimensional frame, Harter developed the Self Perception Profile for Children, Adolescents, College Students, Adults, and Learning Disabled Students. These self-concept profiles have a central place among other self-concept scales and are frequently used in studies of the self (Wichstrøm, 1995). Harter (1989) based these self-concept profiles on the studies of James and Cooley and the ratio between perceived competence and aspirations in any area of life. Harter also claimed that the individual's perceived competence in the domains that they regard

as important are predictors of self-worth. He also said that the degree of the positive regards from others' perceptions of their global self worth may be shaped with the perceived importance of each dimension of self-concept.

The Self-Perception Profile for Adolescents (SPPA), developed for 14-18-year olds, measures global self worth and the eight sub-dimensions of self perception: scholastic competence, athletic competence, social acceptance, close friendship, romantic appeal, job competence, physical appearance, and behavioral conduct. This scale is an extended version of Harter's Self-Perception Profile for Children (SPPC), which has six sub-dimensions. Three further sub-dimensions—job competence, close friendship, and romantic appeal—were added (Keith & Bracken, 1996).

Harter's study (1988) provides evidence for internal consistency reliability, but does not provide evidence for construct validity. Wichstrøm (1995) notes that the SPCC's psychometric properties cannot be generalized to the SPPA due to the different age groups of adolescents. Therefore, factor analysis studies for the SPPA conducted in America and in other cultures offer important evidence for construct validity. Among the studies revealing the scale's factor structure, Trent, Russel and Cooney (1994) obtained strong evidence within Australian culture to confirm Harter's multi-dimensional model. However, in Worell's (1997) study of academically skilled students, only the items in four sub-dimensions (scholastic competence, athletic competence, job competence, and behavioral conduct) appeared under the factors mentioned by Harter while other items were distributed under different factors. Similarly, in Thomson and Zand's (2002) study with African-Americans, and Wichstrøm's (1995) study with Norwegian adolescents, only the items in two sub-dimensions (physical appearance and athletic competence) took place under the factors that were determined by Harter.

In addition to its psychometric properties, the question format of the scale also got serious criticism. First, the logic of the SPPA's question format is misunderstood by many people. The pilot studies done by Wichstrøm (1995) for this investigation showed that the population frequently marked either one single side in the response columns (particularly the left hand side) or both sides for each question. Noticing this problem, Harter suggested that individual's first response should be considered. However, as Wichstrøm said (1995), this not only seriously limits the usability of the scale, but also makes it impossible to check during implementation while causing ethical issues. The complex questionnaire format of the scale is full of long and time-consuming instruction.

Harter (1988) stated SPPA was structured in such a way that largely minimized the possible effects of social desirability bias on the questionnaire format (see Figure 1) and the response type, but this statement was not supported with research findings. For each item in Harter's original question form, two almost completely opposite statements exist. Adolescents are asked to choose the more suitable one for themselves first, and then choose either "really true for me" or "sort of true for me" for the statement.

Really true for me	Sort of true for me			Sort of true for me	Really true for me
☐	☐	Some teenagers are able to make really close friends	BUT Some teenagers are unable to make really close friends	☐	☐

Figure 1. The original question format

Since each item was written in both a positive and negative expression, it is required for respondents to reread item and this takes more time. This leads to fatigue when reading the whole scale and weariness of the respondents. Since the incomprehensibility and vagueness of the scale's format contributes to this fatigue, respondents tend to leave the items unanswered or complete it incorrectly. Therefore the number of the responses that are excluded increases (Fox & Corbin, 1989). Marsh and Holmes (1990) report that they had to exclude 31 % of their samples due to such wrong completions (cited in: Wichstrøm, 1995). In order to solve this problem with the SPPA, Wichstrøm (1995) revised it and tested for usability.

	Describes me very poorly	Describes me quite poorly	Describes me quite well	Describes me very well
I am able to make really close friends	1	2	3	4

Figure 2. The revised question format.

In Wichstrøm's study (1995), conducted within the Norwegian culture, one single statement for each item was written, forming the revised version (see Figure 2). Using a large sample, the study compared the psychometric properties of the original and revised versions. The results of Wichstrøm's study suggested that the validity of the original version was below the acceptable criteria and its factor pattern was poorly repeated. On the other hand the results for the revised version confirmed the factor structure mentioned by Harter (1988). No significant difference was found between the two versions of the scale with respect to social desirability bias. Wichstrøm's (1995) results revealed that the SPPA's original version is time-consuming and boring, and therefore, there is no need to use it.

Despite its deficiencies and the criticism of its features, it is still widely used. Therefore, it was adapted to different cultures (Fox, 1990; Eiser, Eiser & Howermans,

1994; Trent, et al., 1994; Wichstrøm, 1995; Byrne, 1996; Worrell, 1997; Thomson & Zand, 2002). The aim of the study is to explore the construct validity and reliability of the version of the SPPA that is more appropriate version for Turkish culture, its original or revised version. The literature in Turkey reveals that the SPPA was used as a data collection instrument in certain studies (Şahin & Güvenç, 1996; Özbay, Örsel, Akdemir, & Cinemre, 2002) and is among the most commonly used scales in the country (Öner, 2006); however, no findings exist about its construct validity. It is necessary to examine the scale to make valid and reliable measurements for Turkish adolescents so that studies using this scale can meet scientific criteria.

Method

Participants

Group I. The SPPA's original version was implemented on a total of 430 adolescents ages 14-18 years (X= 16; Sd=1,6) with different income levels who were attending schools during the spring semester of the 2007-2008 academic year. After the elimination of 64 incomplete or incorrectly completed scales, data from a total of 366 adolescents (170 females, 196 males; 150 low, 84 middle and 132 upper incomes) was used for exploratory factor analysis.

Group II. For exploratory factor analysis of the revised SPPA, it was implemented on 400 adolescents ages 14-18 years (X= 15,8; Sd=1,7) attending different schools than the first group during the spring semester of the 2007-2008 academic year. The data from five participants was excluded and the second exploratory factor analysis was conducted with the data collected from a total of 395 adolescents (204 females, 191 males; 120 low, 186 middle and 79 upper incomes).

Group III. For confirmatory factor analysis, SPPA was implemented on 279 adolecents (144 females, 135 males; 97 low, 112 middle and 70 upper incomes) between the ages of 14-18 years (X= 15,7; Sd=1,6) who were attending different schools from the first two groups mentioned above during the fall semester of the 2009-2010 academic year.

Group IV. In both applications only the data from 110 participants were analysed to conduct test-retest reliability of revised SPPA with 32 items.

Measures

Harter's SPPA (1988) was developed to measure competence or adequacy in eight separate domains, as well as global self-worth. Nine different scores (eight sub-dimensions and global self-worth) are calculated with 45 items. Positive and negative statements are randomly distributed throughout the instrument; items are scored on a four-point scale and negative statements are recoded so that higher scores represent positive self-perceptions.

The SPPA was implemented on four samples of adolescents in Grades 8 through 11. The samples were at the middle socio-economic level and the majority (90 %) were white Americans. The internal consistency coefficient of the entire scale was .81 and the six sub-scales were seen to have good internal consistency. Scholastic competence's Alpha range was .77-.91; athletic competence's was .86-92; social

acceptance's was .81-.90; close friendship's was .80-.85; romantic appeal's was .80-.85; physical appearance's was .84-.89; behavioral conduct's was .58-.60; and job competence's was .59-.77. However, behavioral conduct and job competence were found slightly below the acceptable level (Harter, 1988).

Although information about the scale's construct validity was not presented by Harter (1988), some of the studies (Trent, et al., 1994; Wichstrøm, 1995; Worrel, 1997; Thomas and Zand, 2002) present evidence about the construct validity of the SPPA. SPPA's original version and the revised version, which use only one statement for each item, were compared by Wichstrøm (1995). Job competence and behavioral conduct sub-scales were not included in Wichstrøm's study so exploratory factor analysis (with oblique rotation) was conducted with 35 items. According Catell's scree test, a six-factor solution accounted for 54.9 % of the total variance in both versions. The revised SPPA results showed that it had better reliability and better convergent and factorial validity than the original version. The discriminant validity and the contamination by social desirability bias were the same for both versions. The factor loadings of the 35 items of the six dimensions (physical appearance/global self-worth; romantic appeal; social acceptance; athletic competence; close friendships; and scholastic competence) range between .42 and .87.

Procedure

The original and revised format of th scales (as Wichstrøm, 1995 proposed) were translated into Turkish, as translation procedure required. First, the 45 items in the original SPPA were implemented on 366 adolescents, and the exploratory factor analysis was performed. Two months later, the revised version with 45 items was applied and data was collected from 395 adolescents for exploratory factor analysis. The results were compared and 19 months later the more suitable version (the revised form with 32 items) was subjected to confirmatory factor analysis. For the test-retest reliability of the revised SPPA with 32 items, data was collected in a one-month interval from 110 adolescents.

Data Analysis

In order to test the construct validity of the scale, 45 items, including the 5 items about global self worth, were subjected to factor analysis. Harter pointed out that global self worth was not evaluated as a separate factor since it was interwoven with other self perception dimensions. Therefore eight factors were sought in this study as Harter (1988) suggested.

Data analysis was performed on SPSS and factor analysis was carried out for the scale's construct validity. The selection criteria used in the study included a minimum common factor variance of .30, with a loading of .45 or more in one single factor. In both versions of the SPPA, the "principle component analysis" and varimax rotation technique, which was conducted in multidimentional scales in which the inter-correlation between the majority of the items was less than .20 (Field, 2005), was used to identify the factors formed by related items. Confirmatory factor analysis (CFA) was carried out by using LISREL 8.51 in order to confirm the structure obtained through exploratory factor analysis. Cronbach's Alpha coefficients for internal consistency reliability and the Pearson moment correlation coefficients for test-retest reliability were used.

Results

The Results of the Construct Validity Studies of Both of the SPPA's Versions.

Comparison of Exploratory Factor Analysis Results of the SPPA's Original and Revised Versions. The exploratory factor analysis was performed on the data obtained from the SPPA's original version and the revised version. In this analysis, the KMO coefficient and Bartlett Sphericity yielded meaningful results in both versions. According to the criteria defined (minimum factor loading of .45) by the researcher, 16 items were excluded and 29 items remained. With these items, an eight-factor structure was obtained that was different than the structure Harter presented (1988). The first of these factors explained 9.35 % of the total variance of the scale, the second 7.28 % of it, the third 7 %, the fourth 6.91 %, the fifth 6.46 %, the sixth 5.91 %, the seventh 5.28 % and the eighth 5.02 %. The total variance explained by these eight factors was 53 %.

In the revised version, 13 items with a load less than .45 were excluded, leaving 32 items remaining. With these items, a seven-factor structure was obtained which was more in line with Harter's structure. The first of these factors explained 10.05 % of the total variance, the second 8.08 %, the third 7.67 %, the fourth 7.08 %, the fifth 6.28 %, the sixth 5.37 %, and the seventh 4.73 %. The total variance explained by these seven factors was 50 %. The factor analysis results of both versions are given in Table 1.

Table 1

Table I. The explartory factor analysis results of SPPA's original and revised versions.

Sub dimensions	SPPA's dimen. Items	Factor 1		Factor 2		Factor 3		Factor 4		Factor 5		Factor 6		Factor 7		Factor 8	
		Orig.	***Rev.***	Orig.	***Rev.***	Orig.	***Rev.***	Orig.	***Rev.***	Orig.	***Rev.***	Orig.	***Rev.***	Orig.	***Rev.***	Orig.	***Rev.***
	1									.592							
School Compet.	10							.658			***.644***						
	19										***.499***						
	28							.509									
	37		***.452***														
	3				***.822***	.773											
Atlethic Compet.	12				***.806***	.758											
	21				***.775***	.710											
	30															.705	
	39				***.556***											.484	
	2								***.560***			.516					
Social Accept.	11	.680							***.548***								
	20											.582					
	29		***.655***	.639													
	38	.556															
	8	.706							***.464***								
Close Friendship	17	.760							***.572***								
	26															.661	
	35								***.643***			.655					
	44								***.651***			.553					
	6		***.576***														
Romantic Appeal.	15													.779	***.753***		
	24		***.710***														
	33		***.521***														
	42													.773	***.784***		
	4						***.601***										
Physical Appear.	13						***.749***										
	22						***.773***										
	31		***.635***	.788													
	40		***.578***	.747													
	7									.588							
Behavior Conduct.	16							.668			***.695***						
	25	.607															
	34										***.508***						
	43										***.562***						
	5									.667			***.772***				
Job Compet.	14																
	23									.547			***.769***				
	32																
	41												***.594***				
	9						***.477***										
Gen. Self - worth.	18							.591									
	27			.461													
	36																
	45						***.508***										

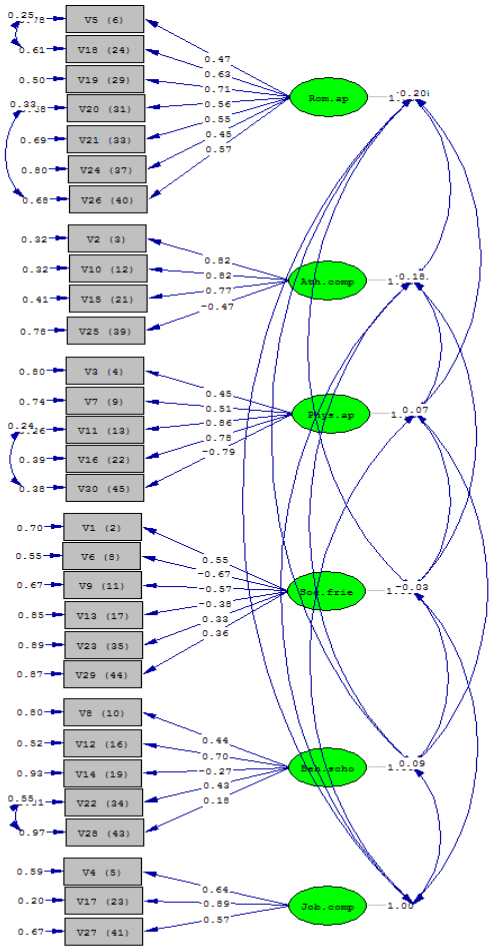
In the original version, three items of the romantic appeal sub-dimension were excluded and it was used as a separate factor with two items about flirt preferences under Factor 7. Also in the revised version, the same two items took place as a separate factor under Factor 7. The remaining three items, with load values ranging between .452 and .710, were integrated with two physical appearance items about being attractive that can be related to romantic appeal, one social acceptance item about popularity, and one scholastic competence item about being intelligent, and formed a separate factor under Factor 1 (6, 24, 29, 31, 33, 37, 40). Due to the relevant looking contents of the items, those sub-dimensions under this factor may be related to being fancied by the opposite sex and therefore considered in the romantic appeal sub-dimension. It seems that the two items under Factor 7 with loads of .753 and .784 (15, 42) should be considered in the flirt preferences sub-dimension.

In the original version of the scale, three of the athletic competence sub-dimension items were placed under Factor 3 and two under Factor 8, whereas one was excluded in the revised version and four items with very high load values were placed under Factor 2. Therefore, the items under Factor 2 of the revised version (3, 12, 21, 39) can be considered the "athletic competence" sub-dimension more strongly, and their factor load values range between .556 and .822. While in the original version only two physical appearance items were placed under Factor 2 with one relevant social acceptance and one global self worth item, in the revised version two items under the same factor as romantic appeal items were placed under Factor 1, and the remaining three under Factor 3. As two self worth items describing emotions about physical attributes were placed under Factor 3, the items under this factor (4, 9, 13, 22, 45) obviously form the "physical appearance" sub-dimension with their loads ranging between .477 and .773. In the original version of the SPPA (except for one item) and its revised version, most social acceptance and close friendship items were placed under one single factor. When examined separately, two of the social acceptance items in the original version were placed under Factor 1, one under Factor 2 and two under Factor 6, whereas in the revised version, one was under Factor 1 and two under Factor 4. The original version's two close friendship items were placed under Factor 1, two under Factor 6 and one under Factor 8, while in the revised version, one item was excluded and four items were placed under Factor 4.

Although the items of social acceptance and close friendship are more scattered and fewer in the original version, more items appeared clearly and more significantly in the revised version. Therefore, items gathered under Factor 4 of the revised version (2, 8, 11, 17, 35, 44) can be called the social acceptance/close friendship subdimension and their item load values range between .464 and 651. While two of the scholastic competence sub-dimension items in the original version were placed under Factor 4 and one under Factor 5, two of the remaining three items in the revised version were placed under Factor 5 and one under Factor 1. Two items with high load values which were placed under Factor 5 in the revised version were gathered under the same factor as the three behavioral conduct items so their content would be consistent. As behavioral conduct items were not distributed to other factors but only gathered under this factor, it can be said that Factor 5 in the revised version (10, 16, 19, 34, 43) may be considered the behavioral conduct/scholastic competence sub-

dimension. In Table 1, the load values of the items in this factor range between .499 and .695. Also in the original version, two scholastic competence items, one behavioral conduct and one global self worth items were placed under the same factor; however, since one of the two remaining behavioral conduct items were placed under Factor 1 and the other under Factor 5, the behavioral conduct sub-dimension did not emerge in this version. Therefore, the revised version also yielded more appropriate results for scholastic competence and behavioral conduct sub-dimensions. While in the original version two job competence sub-dimension items were placed under Factor 5 together with one scholastic competence and one behavioral conduct item, in the revised version three job competence items (5, 23, 41) with higher load values (.594, .769, .772) were placed under Factor 6 without being mixed with other factor items. The items in the revised version would form the job competence sub-dimension. General self worth items were not examined and were not expected to emerge as a separate factor. While one item about general self worth was placed under Factor 2 and one under Factor 4 in the original version, only two items were placed under the physical appearance sub-dimension in the revised version and the others were excluded. The exploratory factor analysis results obtained from the SPPA's original and revised versions show that the factor structure of the revised version is more consistent with Harter's factor structure and that the revised version is more appropriate for use in Turkey.

The Results of Confirmatory Factor Analysis (CFA) of the SPPA's Revised Version. First the seven closed variables model scale mentioned above was explored in the confirmatory factor analysis. When the path diagram and output file were examined, since t values were less than 1.96, the flirt preferences subscale with two items was removed from the model (Şimşek, 2007) and the analysis was done again. The CFA results were as follows; χ^2=866.21 (N=279, sd=390, p=.000), χ^2/sd=2,22 RMSEA=0.066, RMR=0.072 GFI=0.83,, AGFI=0.79 and CFI=0.80. Although the results were at an acceptable level to provide a better model, modification indices were investigated. The second group modification indices suggest to add paths of covariance between error terms for items 5 and 18; 11 and 30; 20 and 26, and 22 and 28. Since these pairs appeared to manifest the same latent variable, the second group modification recommendations were taken into consideration and the model was changed accordingly. Although items 14 and 28 have low factor loadings (.27 and .18) and high error variance (Figure 3), they were not excluded from the model because their t-values were higher than 1.96. The CFA results are as follows (Figure 3); χ^2=665.54 (N=279, sd=386, p=.00), χ^2/sd=1.69 RMSEA=0.050, RMR=0.069, GFI=0.86, AGFI=0.84 and CFI=0.86. The final model shows that the goodness of fit statistics (χ^2, RMSEA, RMR,GFI, AGFI, CFI) are at an acceptable level (Marsh, Balla & McDonald, 1988).



Chi-Square=655.54, df=386, P-value=0.00000, RMSEA=0.050

Figure 3. The results of CFA for the standardized solution of the revised SPPA's six-factor model

The intercorrelations among the subscales of revised SPPA. In Table 2, it was seen that r values which reflect the relationship between the revised SPPA's subscales are low. When the relationship between the subscales were examined it was found that the romantic appeal subscale has a significant correlation with only

two subscales (athletic competence and job competence); while athletic competence subscale has a significant relationship with the other subscales. The highest relationship was between the social acceptance and close friendship subscales and the behavioral conduct and scholastic competence subscale (r=.298); the lowest relationship was between social acceptance and close friendship subscale and the job competence subscale (r=.053).

Table 2

The Intercorrelations Among the Subscales of SPPA

SPPA Subdimens.	Rom. App.	Ath. Comp.	Phys. App.	Social Acc.& Close Friend.	Beh. Con. & Scholast. Comp.	Job Comp.
Rom. App.	1					
Ath. Comp.	.231**	1				
Phys. App.	.075	.209**	1			
Social Ac.& Close Frien.	.064	.178**	.133*	1		
Beh.Con. & Schol. Co.	.104	.274**	.231**	.298**	1	
Job Comp.	.137*	.123*	.134*	.053	.077	1

* p<.05, **p<.001

The Results of Reliability Studies of the SPPA's Revised Version

The Cronbach's alpha coefficient (α) was calculated for the SPPA's internal consistency reliability and the Pearson moment correlation coefficient (r) was calculated for its test-retest reliability.

The Revised SPPA's Internal Consistency. The internal consistency coefficients of the SPPA's sub-dimensions were as follows: .78 for romantic appeal, .76 for athletic competence, .69 for physical appearance, .68 for social acceptance/close friendship, .56 for behavioral conduct/scholastic competence and .58 for job competence.

The Revised SPPA's Test-Retest Reliability. In order to conduct test-retest reliability of SPPA with 32 items (not 45 items), the first data was collected from 128 adolescents who had never seen the scale before. However absent students and students who did not fill out the scales properly with a one-month interval during the second application were excluded from the analysis and the data from 110 adolesents were analyzed by omitting 18 participants' scales. In conclusion the revised SPPA with 32 items was re-implemented on the same 110 adolescents after

one month and the data collected was used to calculate Pearson moment correlation coefficients. The r values obtained for the SPPA's test-retest reliability were .88 for romantic appeal, .70 for athletic competence, .68 for physical appearance, .60 for social acceptance/close friendship, .93 for behavioral conduct/scholastic competence and .79 for job competence.

Conclusions and Recommendations

It is important to examine the construct validity and reliability of Harter's (1988) Self-Perception Profile for Adolescents, one of the most frequently used scales in studies focusing on the self, to make valid and reliable measurements within the Turkish culture so the studies using this scale meet the required scientific criteria in Turkish literature. A comparative construct validity study was conducted with both the original version of the scale and its revised version, which was reported to be more appropriate (Wichstrøm, 1995). As emphasized especially by Fox and Corbin (1989), the unusual style of the form which leads to substantial losses in the studies is not economical. Also in this study, as also mentioned by Marsh and Holmes (1990) (cited in: Wichstrøm, 1995), data from 64 participants (15 %) were lost in the original version and 5 (1.2 %) in the revised version. Harter's failure (1988) to show evidence that this unusual questionnaire format controls social desirability bias and Wichstrøm's (1995) finding that there is no meaningful difference between the revised and original versions with respect to social desirability error reveal why the revised version should be preferred over the original. This should be the case even for pure reasons of economy, let alone construct validity.

In this study the construct validity results of the original and revised SPPA suggest, parallel to Wichstrøm's (1995) findings, that the factor structure of the revised version is more consistent with Harter's factor structure, supported also by confirmatory factor analysis. Therefore, the revised version is a better alternative for Turkish culture. Different from Wichstrøm's (1995) and Thomson and Zand's (2002) factor analysis but parallel to Trent, et al. (1994) and Worrell's (1997) study, job competence items were included in the factor analysis. Even though two items were excluded at the end, the three job competence items formed a separate dimension with their 5.37 %-contribution to the total variance explained. In the revised and original versions, the social acceptance and close friendship sub-dimension items were placed under the same factor. This finding is corroborated by Trent et al. (1994), Wichstrøm (1995), Worrell (1997) and Thomson and Zand's (2002) findings, as well as Harter's (1988) items separately measuring social acceptance and close friendship in white American adolescents. It has been shown that they measure the same dimension in European, Australian, and Turkish adolescents as in African-American adolescents. The integration of three behavioral conduct items and two scholastic competence items under the same factor is theoretically meaningful. The literature significantly supports the relationship between student attitudes, behaviors, and academic success (Theresa, 2006; Steinberg, 2007). Other studies released different conclusions for these two sub-dimensions. Thomson and Zand (2002) similarly defined a behavioral conduct item and four scholastic competence items as the

academic and general competence sub-dimension, and defined a four-item (three of the same items) behavioral conduct sub-dimension. However, in Wichstrøm's study (1995), all behavioral conduct items were excluded and the scholastic competence factor was confirmed with its five items. The biggest contribution to the variance explained by the scale was made by the romantic appeal sub-dimension with 10 %. However, the social acceptance item added to the three romantic appeal items was also seen in Worrell's (1997) and Wichstrøm's (1995) revised version results. Also, the addition of two physical appearance items and one scholastic competence item related to this sub-dimension as indicators of the same closed variable is appropriate for Turkish culture. Canpolat, Örsel, Akdemir, and Özbay (2003) have shown that adolescents who are satisfied with their physical appearance and consider themselves intelligent believe that the opposite sex perceives them as attractive. On the other hand, the emergence of two items which belong to romantic appeal (Harter, 1988) as a separate factor both in the original and revised versions is in compliance with theoretical views (Steinberg, 2007). Different from the romantic appeal items, the relevance of both flirt preferences and their high load value may mean that romantic appeal and flirt preferences are different closed variables in Turkish culture. However the flirt preferences subscale was excluded with confirmatory factor analysis. Only one of the athletic competence sub-dimension items was omitted and the other four items were placed under the same factor without being distributed to other factors and therefore made the biggest contribution to the explained communality (8 %). Findings pertaining to the athletic competence sub-dimension are largely consistent with Harter (1988), Trent et al. (1994), Wichstrøm (1995), Worrell (1997) and Thomson and Zand's (2002) findings. In the physical appearance sub-dimension, three physical appearance and two general self esteem items contributed to the communality of 7.7 % and formed a separate factor. Consistent with these findings, Wichstrøm (1995) obtained strong relationships showing that the items in these two dimensions could not be separated. Harter (1999) also emphasized that adolescents' physical appearance perceptions are the most important predictors of global self-esteem. The final model results obtained from CFA confirm that there are six dimensions in the scale that are independent from each other. Since the final model showed that goodness of fit statistics were at an acceptable level, it is recommended that further research should be done to test the cross validity of this model. The intercorrelations among the subscales of the revised SPPA showed that the relationship between some subscales was not significant while relationships were significant but low between other subscales. Consistent with Harter's (1988) explanation that domain-specific competences are viewed as distinct constructs, these results indicated that the dimensions of the SPPA are independent from each other.

The scale's internal consistency results show that the coefficients obtained from the revised version were higher than those obtained from the original version. The highest internal consistency coefficient was obtained from the athletic competence sub-scale. This finding and the low internal consistency coefficients from the behavioral conduct/scholastic competence and job competence sub-dimensions are largely consistent with Harter's (1988) and Trent, et al.'s (1994) findings. The test-

retest reliability results of the scale are more satisfactory than internal consistency coefficients.

To conclude, the 30-item (11 reversed) SPPA revised version is a valid and reliable measure of the different dimensions of self-concept (romantic appeal, athletic competence, physical appearance, social acceptance/close friendship, behavioral conduct/scholastic competence and job competence) within the Turkish culture. At the beginning of the study the aim was to analyze the construct validity and reliability of the SPPA scale. However, the difficulties in the application of the scale due to questionnaire format and the problems explaining the results of the explanatory factor analysis shifted the aim of the study to exploring the construct validity of SPPA by comparing the original and revised forms of the scale. Therefore an important limitation of this study was not to compare the original and revised form in the same sample. Since there were no similar scales with the same theoretical background in the Turkish culture, the concurrent validity of the scale was not assessed in this study. However, future studies will reveal the psychometric properties of the scale better within the Turkish culture.

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Ergenler İçin Benlik Algıları Profili'nin Yapı Geçerliği, Güvenilirliği: Orijinaline Karşın Değiştirilmiş Versiyon

(Özet)

Problem Durumu: James ve Cooley'in tanımlarıyla tutarlı bir biçimde ilk geliştirilen ölçekler tek boyutlu genel bir benlik kavramını ölçmüşlerdir. Son geliştirilen ölçeklerde benlik kavramı duyuşsal olduğu kadar bilişsel bir temel üzerine geniş bir benlik sistemi olarak ele alınmış ve tek boyutluluğun spesifik özellikleri yansıtmadığı gerekçesi ile benlik kavramının farklı boyutlarını da ölçecek biçimde çok boyutlu yaklaşımlar benimsenmiştir. İlgili alan yazında sıklıkla kullanılan ölçeklerden biri olan Harter'ın 14-18 yaşları için geliştirdiği Ergenler İçin Benlik Algıları Profili (Self-Perception Profile for Adolescents-SPPA) okul yeterliliği, atletik yeterlilik, sosyal kabul, yakın arkadaşlık, romantik çekicilik, iş yeterliliği, fiziksel görünüş ve davranışsal uygunluk alt boyutlarının yanında genel benlik değerini de ölçen dokuz alt boyuttan oluşmuştur. Bu ölçek Harter'ın Çocuklar İçin Benlik Algıları Profili'nin (Self-Perception Profile for Children-SPPC) genişletilmiş hali olup SPPC ile altı alt boyutu paylaşmaktadır. Bu ölçeğe iş yeterliliği, yakın arkadaşlık ve romantik çekicilik alt boyutları da eklenerek 45 maddelik bir ölçek haline getirilmiştir.

Harter araştırmaya dayalı kanıt göstermeksizin, SPPA'nın soru formatını sosyal beğenirlik yanlılığından etkilenme olasılığını büyük ölçüde azaltacağı beklentisiyle alışılmışın dışında bir biçimde oluşturmuştur. Ölçeğin orijinal soru versiyonunda her bir madde için neredeyse birbirine zıt içerikte iki ifade bulunmakta, önce bu ifadelerden ergen için daha uygun olan birini seçmesi, sonra da bu ifadeyi "benim için tamamıyla doğru", "benim için kısmen doğru" seçeneklerine göre değerlendirip kendisine en uygun olan seçeneği işaretlemesi istenmektedir. Alan yazındaki araştırma bulguları ise bu formatın sosyal beğenirlik yanlılığını azaltıcı etkisi olmadığını; zaman alıcı ve karmaşık bulunduğundan bıkkınlıkla karşılandığını ortaya koymuştur. Ayrıca ölçeğin değiştirilmiş versiyonunun Harter'ın işaret ettiği faktör yapısını daha çok doğruladığını ve daha güvenilir ve geçerli sonuçlar ürettiğini göstermiştir.

Amaç: Orijinal ve değiştirilmiş versiyonuna ilişkin alan yazındaki bulgular dikkate alınarak bu araştırmada SPPA'nın orijinal versiyonu ile değiştirilmiş versiyonunun açıklayıcı faktör analizi sonuçları karşılaştırılarak daha yeterli sonuç veren versiyonunun diğer psikometrik özelliklerinin Türk kültüründe incelenmesi amaçlanmıştır. SPPA (Self-Perception Profile for Adolescents) Türkçe'ye Ergenler İçin Benlik Algıları Profili (EBAP) adıyla uyarlanmıştır.

Yöntem: Ölçeğin çeviri çalışması tamamlandıktan sonra orijinal versiyonu 366 ergene, değiştirilmiş versiyonu da 395 ergene uygulanmıştır. Bütün

veriler 14-18 yaş arasında, cinsiyet ile gelir düzeyi (düşük, orta, yüksek) bakımından dengelenmiş örneklemlerden toplanmıştır. Her iki veri grubuna açıklayıcı faktör analizi (temel bileşenler analizi) yapılmıştır. Daha uygun faktör yapısı sunan (değiştirilmiş), versiyonun belirlenen bu yapısını doğrulamak amacıyla 279 ergenden toplanan verilerle doğrulayıcı faktör analizi (DFA) de yapılmıştır. Ölçeğin iç tutarlılık güvenilirliği için Cronbach-Alfa katsayısı hesaplanmış, ölçeğin test-tekrar test güvenilirliği için 110 ergenden bir ay ara ile toplanan verilerle Pearson Momentler Çarpımı korelasyon katsayısı hesaplanmıştır.

Bulgular ve Sonuç: Yapı geçerliğine ilişkin olarak SPPA'nın orijinal versiyonu ile değiştirilmiş versiyonundan elde edilen sonuçlar karşılaştırıldığında, değiştirilmiş versiyonun faktör yapısının daha açık biçimde Harter'ın işaret ettiği faktör yapısıyla tutarlı olduğu görülmüştür. Bu versiyonda toplam varyansın %50'sini açıklayan ve yüksek yük değerlerine sahip yedi faktörlü (romantik çekicilik, atletik yeterlik, fiziksel görünüş, sosyal kabul /yakın arkadaşlık, davranışsal uygunluk /okul yeterliği, iş yeterliği, flört tercihleri) bir yapı elde edilmiştir. Değiştirilmiş versiyonun 1. faktörünün üç romantik çekicilik ve ilişkili olabilecek iki fiziksel görünüş maddesi, popülerliğe işaret eden bir sosyal kabul maddesi ve bir de zeki olmaya işaret eden okul yeterliği maddesi .452 ile .710 arasındaki yük değerleri ile "romantik çekicilik" alt ölçeğini (6, 24, 29, 31, 33, 37, 40) oluşturmuşlardır. Değiştirilmiş versiyonun 2. faktörünün altında toplanan maddelerin (3, 12, 21, 39) daha güçlü bir biçimde "atletik yeterlik" alt ölçeğini oluşturduğu ve faktör yük değerlerinin .556 ile .822 arasında değiştiği görülmüştür. Değiştirilmiş versiyonda üç fiziksel görünüş maddesi ile iki genel benlik değeri maddesi tutarlı bir biçimde 3. faktörün altında yer almış (4, 9, 13, 22, 45), .477 ile .773 arasında değişen yük değerleriyle "fiziksel görünüş" alt ölçeğini oluşturmuşlardır. Değiştirilmiş versiyonun 4. faktörü altında toplanan maddelerin (2, 8, 11, 17, 35, 44) daha açık olarak "sosyal kabul /yakın arkadaşlık" alt ölçeği olarak adlandırılabileceği ve madde yük değerlerinin .464 ile 651 arasında değiştiği görülmüştür. Bu versiyonun 5. faktörü altında yer alan iki okul yeterliği maddesi ile üç davranışsal uygunluk maddesi aynı faktörün altında içerikleri tutarlı olacak biçimde toplanmışlardır. Bu faktör altındaki maddelerin (10, 16, 19, 34, 43) yük değerlerinin .499 ile .695 arasında değiştiği ve açık olarak "davranışsal uygunluk /okul yeterliği" alt ölçeğini oluşturdukları söylenebilir. Değiştirilmiş versiyonda daha yüksek yük değerlerine (.594, .769, .772) sahip üç iş yeterliği maddesi (5, 23, 41), 6. faktör altında yer almış ve açık biçimde "iş yeterliği" alt ölçeğini oluşturmuşlardır. Genel benlik değeri maddeleri ise ayrı bir faktörü oluşturmayıp, sadece iki maddesinin elenmeden fiziksel görünüş alt ölçeği altında yer aldığı görülmüştür.

Ölçeğin değiştirilmiş versiyonunun açıklayıcı faktör analiziyle elde edilen 7 faktörlü yapısı DFA ile test edilmiştir. İlk sonuçlar modelin uyum iyiliğinin önemli göstergeleri olan değerlerin kabul sınırları içinde

olmadığını göstermiş, flört tercihleri maddelerinin t değerleri 1.96'dan küçük olduğu için modelden çıkarılmalarına karar verilmiştir. Tekrarlanan analiz sonrasında iyileştirmeye işaret eden düzeltmeler modele eklenerek analiz tekrarlanmıştır. 14. ve 28. maddelerin bulundukları faktördeki yük değerleri düşük ve hata varyansları büyük olsa da t değerleri 1.96'dan büyük olduğu için modelden çıkarılmamalarına karar verilmiştir. DFA sonuçlarıyla elde edilen model veri uyumunun kabul edilebilir olduğunu gösteren kriter değerleri χ^2=665.54 (N=279, sd=386, p=.00), χ^2/sd=1.69 RMSEA=0.050, RMR=0.069, GFI=0.86, AGFI=0.84 and CFI=0.86 olarak elde edilmiştir. Ölçeğin iç tutarlık güvenilirliği için hesaplanan Cronbach-Alfa alt ölçek katsayılarının .56 ile .78 arasında değiştiği; test-tekrar test güvenilirliği için elde edilen r değerlerinin alt ölçeklerde .93 ile .60 arasında olduğu görülmüştür.

Sonuç ve Öneriler: Bulgular 30 (11'i ters ifade edilmiş) maddeden oluşan SPPA'nın değiştirilmiş versiyonunun Türk ergenlerde benlik kavramının 6 bağımsız (romantik çekicilik, atletik yeterlik, fiziksel görünüş, sosyal kabul /yakın arkadaşlık, davranışsal uygunluk /okul yeterliği ve iş yeterliği) boyutuna ilişkin geçerli ve güvenilir ölçüm yaptığını ortaya koymaktadır. Ancak ileride yapılacak benzer amaçlı çalışmalar ölçeğin Türkiye için sahip olduğu psikometrik özelliklerini daha güçlü bir biçimde ortaya koyacaktır.

Anahtar Kelimeler: Benlik algıları, ergenlik, değiştirilmiş versiyon.

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Conversational Repair in Foreign Language Classrooms: A Case Study in a Turkish Context

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Abstract

Problem Statement: A speaker's language proficiency level can be determined by observing the repair types employed during conversation. When a non-native speaker of English performs self-initiated self-repair, this means that s/he has attained native-like proficiency. However, when other-initiated other-repair is performed, the non-native speaker of English has achieved less native-like proficiency in the interaction. Thus, repairs are significant signs indicating the proficiency level of the language user and have significant roles in the achievement of native-like norms. Nearly all existing studies focus on repair strategies used in the interaction between native-native speakers of English and native-nonnative speakers of English. The number of studies on repair strategies in the repertoire of nonnative speakers of English is limited. When studies in Turkey are investigated, to the best knowledge of the writer, there is no study that focuses on the types of conversational repair or repair strategies employed by Turkish learners of English. Therefore, this paper can be regarded as the first investigation of conversational repairs by Turkish learners of English.

Purpose of the study: The purpose of this study is to investigate what types of repair strategies Turkish speakers of English prefer to use and in what cases they prefer to repair their utterances. The study aims to explore the competence of Turkish speakers of English in realizing their own conversational problems and self-correcting them.

Methods: This is a qualitative case study. 10 hours of conversation classes were recorded for data analysis. For conversational analysis, turn-taking, adjacency pairs and subsequent sentences in discussions and presentations were transcribed, from which repair strategies were identified and categorized.

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Findings and Result: According to the findings, the Turkish English-speaking students perform lexical, phrasal and phonological self-repair but not content or pragmatic repair. However, to have native-like interaction and proficiency, non-native speakers of English should perform self-initiated self-repair on the pragmatics and content of their utterances. The students perform self-initiated other repair, but that is not a commonly used conversational repair. When the interlocutors in the class have problems understanding what the presenter or another student says, they do not initiate repair.

Conclusion and Recommendation: In foreign language classrooms, it should be emphasized that repair, repair strategies and the monitoring of one's utterances are natural processes in communication and social interaction. Students should be encouraged to make self-initiated self-repair on content and pragmatics and to initiate repair to repair problems in their classmates' utterances.

Keywords: Conversational repair strategies, conversational analysis, foreign language education, language performance, competence in the target language

Repair in communications is defined as "practices for dealing with problems or troubles in speaking, hearing, and understanding the talk in conversation" (Schegloff 2000, p. 207). In other words, repair is a kind of treatment for difficulties that occur in interactive language use. Studying repair in this context means to explore problems in understanding and to investigate remedial acts. These remedial acts should not be handled as corrections. Schegloff, Jefferson and Sacks (1977) draw attention to the difference between repair and correction, stating that repair is a general domain of occurrences, whereas self- or other corrections are particular types in a domain. Schegloff et al. (1977) emphasize that the term "correction" is commonly understood as the replacement of an error or mistake by the correct form, but that conversational repair is not limited to such replacement.

Schegloff et al. (1977) investigate the conversational repairs employed by native speakers of English through conversational analysis and identified the following four structural types of repair:

(a) Self-initiated self-repair. A self-repair taken by the speaker of the trouble source. Most self-initiated self-repairs are initiated in the turn that contains the trouble source. The vast majority of them are accomplished successfully within the same turn.

(b) Self-initiated other-repair. A repair taken by the speaker of the trouble source initiated with words or sounds (e.g., *I mean*, *hh* and *uh*). The interlocutor in discourse provides a remedial act in the next turn. The remedial act is then completed by the speaker of the trouble source.

(c) Other-initiated self-repair. A repair initiated when the interlocutor uses techniques (e.g., the expressions *Y' mean*, *what* or *huh*) to locate the trouble source for the speaker. The next turn affords the speaker of the trouble source an opportunity to initiate repair.

(d) Other-initiated other-repair. A repair made by the interlocutor. The interlocutor identifies the trouble in hearing or understanding. In the next turn, the speaker of the trouble source cannot make the repair. In the following turn, the interlocutor repairs the trouble.

According to Schegloff et al. (1977), before initiating remedial acts, a speaker employs specific initiator techniques to signal the trouble s/he is having (i.e., the use of *cut-offs*, *sound stretches*, or the formulaic expression *I mean*). In other-initiated repair strategies, the interlocutor uses initiator techniques different from those of self-initiated repairs to indicate the location of the trouble source—for example, the use of "what"' or "huh ↑?", "who" or "when" (often with a rising intonation), the repetition of the trouble source turn and the use of jokes (Schegloff 2000, p. 168).

Markee (2000) points out that the number of studies on conversational repairs in non-native speakers in foreign language classrooms is limited (see Hoekje, 1984; Kasper, 1985; Kingerger, 1995; Steedhouse, 1998). Markee then points to a need for studies that describe and identify conversational breakdowns in foreign language classrooms and investigate the kinds of strategies employed by students and teachers to repair such breakdowns.

Hoekje (1984) investigates where and how non-native speakers of English repair their communication breakdowns in foreign language classrooms and presents the following strategies used by students:

1- The repetition of a word or sentence with slow and distinct pronunciation

2- A change of the utterance that included communication breakdowns

3- A clarification of the utterances through a variety of devices such as gestures, examples, definitions and codeswitches to the mother tongue

Similar to Hoekje, Kasper (1985) focuses on the repair patterns occurring in a foreign language classroom at a Danish gymnasium. Observing two different class sessions—one language-centered and one content-centered—Kasper states that in the language sessions there is a preference for "delegated repair over self-completed repairs". In the content-based sessions, the students do self-correction. Likewise, Kingerger (1995) and Steedhouse (1998) state that in instructional activities students produce other-initiated and other-completed repair, whereas while participating in natural tasks they use code-switching more frequently than repair initiation. In opposition to Steedhouse, Kasper and Kingerger, for Hoekje, the nature of activities seems to be less important since non-native speakers of English tend to use similar conversational strategies across different activities.

In contrast to Kingerger and Steedhouse, Shehadeh (1991, 1999) points out that success in L2 learning may be measured by the proportion of self-initiated, self-completed repair to other-initiated, other-completed repair, and by the proportion of content and pragmatic repair to linguistic repair. Thus, the more self-initiated and self-completed the content and pragmatic repairs, the more native-like the interaction. As a corollary, the more other-initiated and other-completed the linguistic repair, the less native-like the interaction. Likewise, Schegloff et al. (1977,

2000) point to the distributional patterns of repair strategies in conversation. In normal conversation, the norm is self-initiated and self-completed repair. In non-normal conversation, the proportion of other-initiations and other-completions is higher than expected. It has also been observed that in NS/NS discourse (Schegloff et al., 1977) and NS/advanced NNS discourse (Kasper, 1985) the vast majority of repair consists of content and pragmatic repair rather than linguistic (phonological, lexical, morpho-syntactic) repair.

When the studies conducted in Turkey on language pedagogy and foreign language education are investigated, to the best knowledge of the writer, there is no study that focuses on the types of conversational repair or repair strategies employed by Turkish learners of English. Only Genç (2007) investigates conversational strategies; he examines such strategies employed by 23 freshman students at Çukurova University. He mainly focuses on L1-based (language switch and literal translation) and L2-based (repetition, avoidance, paraphrase, ask for help, and mime) repair strategies. He mentions only the frequency of filler-type repetitions and self-repairs in the language production of all participants, and his main focus is not on the repair strategies employed by Turkish users of English from the perspective of Schegloff et al.

The current study handles conversational repair and repair strategies employed by Turkish users of English within the framework of Schegloff, Jefferson and Sacks (1977). It investigates whether Turkish users of English perform the types of self-repair proposed by Schegloff et al., Shehadeh and Kasper. For conversational analysis, this study identifies the types of conversational repair and repair strategies used and in what cases Turkish users of English prefer to repair their own utterances. It also presents common words, structures and formulaic expressions used for conversational repair during presentations by and interaction among English-speaking Turkish classmates.

Method

Research Design

Participants of this study were graduates of Anatolian Teacher Schools, where they had had intense English instruction for eight years. All study participants passed the English proficiency exam administered by the Department of Basic English at Middle East Technical University. The mean of the proficiency score of the participants was 90, which is equivalent to TOEFL IBT 116 and IELTS 8.5.

Data were collected from first-year students enrolled in speaking courses in the Department of English Language Teaching at Middle East Technical University. Permissions for video recordings were obtained from both the students and the instructors. A video recorder was then placed in the classroom so as to view all class interaction. The first two hours of recording were not included in data analysis since the students controlled their utterances in the initial phase of the recording. After two hours, they ignored the camera and spoke naturally.

Data came from thirteen student presentations and subsequent discussions. Ten hours of conversation classes were recorded but only eight hours were transcribed for data analysis. The tokens of retrieved items from transcription numbered 40, but only 13 of them are handled here due to space limitations. In selecting only 13 samples, special attention was paid to data that encompassed the entire set of collected data. In the retrieved items, the students' errors are written without correction.

Research Questions

This study aims to answer the following questions:

1-What types of conversational repair are used by the first-year students of the Department of Foreign Language Teaching at Middle East Technical University?

a) Do the students employ content or pragmatic repair?

b) Do the students use linguistic (phonological, lexical, morpho-syntactic) repair?

2- In what cases do the first-year students of the Department of Foreign Language Teaching employ repair in their utterances?

For question 1, sub-categories are given to help explain the types of repair that the first-year students employ. Listing only the repair strategy is not enough to comprehensively understand the repair process of the students. Knowing in what aspects of language formulation and use (i.e., lexical or pragmatic) L2 learners need to repair their utterances will help us understand their production processes and proficiency levels in conversational repairs and the target language.

Data Analysis

For conversational analysis, turn-taking, adjacency pairs and subsequent sentences in classroom discussions and presentations were transcribed. The repair strategies employed by Turkish users of English are handled in terms of the following conversational repair types proposed by Schegloff et al. (1977): (a) self-initiated self-repair, (b) self-initiated other-repair, (c) other-initiated self-repair and (d) other-initiated other-repair. The repair strategies were then identified and categorized by the researcher. During the categorization process, another researcher checked whether the categorization was correct. Four samples that were not well-understood by the students were excluded from the analysis. The repair types the students use are discussed in the order listed here.

Findings

Self-Initiated Self-Repair

To demontrate when the students need to self-initiate self-repair and how they start the repair, 6 extracts are given below. The utterances in which self-initiated self-repair repair appears are indicated by an arrow (→). In extract 1, the presenter talks about "Türk Eğitim Gönüllüleri Vakfı". S/he frequently uses "eee" or "iii" in his/her utterances, which makes him/her difficult to understand.

Extract 1

→1- Presenter: As you can (iii) understand the aim to go over (iii) through the go

2- through Ataturk's road (iii) and in TEGEV in the educational volunteers foundation of Turkey

....

5- Teacher: When they have no class at school

6- Presenter: Yes and there there is a relationship between education and

→7- educational volunteers so we send a track to their (eee) we send an

→8- automobile to their schools and

9- they came to our park. We have two lessons

In line 1, the trouble source is that the speaker uses the phrase "go over" and then, thinking that this phrase is not in accordance with her/his intended meaning, s\he replaces it with the words "go through". Similarly, in line 7, s/he says, "we send a track to their (eee)" and thinks that the meaning of the word is not the same as the vehicle they send. To prevent misunderstanding, s/he prefers to use another word.

Extract 2

In extract 2**,** the student talks about Zeus and the reasons Zeus's father ate his children.

1- Student 4: Zeus…. She is the god of everything…her his father used to eat her

→2- children because he hears that her children (ay): her children defends so

→3- when he was born his (3.) mother hide him, Zeus's mother hide him in a cave

In line 2, the student indicates the trouble in his/her utterance by saying "ay" and then repairs it as "her children defends so when he was born his mother hide him". In line 3, s/he says "his mother hide him" but s/he thinks that the meaning is unclear for the interlocutors. S/he rewords the utterance as "Zeus's mother hide him in a cave". As seen, there is a 3-second pause, which may indicate the student's process of monitoring the utterance.

In the following extracts, the presenters realize the incorrect pronunciation of words in their utterances and perform self-repair.

Extract 3

In extract 3 the presenter talks about Leanordo Vinci and his education.

→1- Presenter: Before going Milan, he was sent to near a painter and **slupcirir**

→2- **sculptor** (head gestures)

Extract 4

In extract 4, the presenter talks about dreams.

→1- Presenter: Maybe the dreams try to **convey cınvey** a message that you have

2- something that you have to examine with yourself.

An essential point in extracts 3 and 4 is that the presenters realize the problem in their pronunciation and do self-repair. In extract 3, the speaker pronounces the word "sculpture" as "slupcirir" but with a head gesture s/he re-pronounces it as "sculptor**".** In extract 4, the presenter pronounces the word "convey" as "konvey" but then re-pronounces it as "cınvey". No one in the class interrupts to initiate repair, although the mispronunciation causes communication breakdowns.

Extract 5

In extract 5, the presenter talks about the differences between right-handed and left-handed guitar-playing.

1- Presenter: Soled played guitar routine played guitar but there is a different

2- way which is occurred during eighties it is called finger tapping. While finger

→3- tapping, you only use your fingers to touch the strings to make it sound (he uses his fingers to show how one can touch the strings)

4- I want to show you a little movie you can understand better.

→ 5- (Showing the pictures) As you see he uses his fingers.

...

7- He is the most creative guitarist around the world up to now. He was always

→8- using the right-handed guitar as you see (showing the picture on the board)

→9- as as if it is a left-handed. But I mean (holding his guitar) this is right-handed

10- guitar. He was using it like that.

11- The audience: himm!

The presenter pays attention to whether his/her listeners understand. To clarify the information given, s/he constantly shows pictures to the listeners or plays the guitar. In line 5, the presenter uses the picture to show how Jimmy Hendrix holds the guitar and then, assuming that the interlocutors do not perceive the differences between right-handed and left-handed guitar-playing, he demonstrates how Hendrix holds the guitar. After this performance, the interlocutors say, "himm", which means they understand. Although s/he shows a picture, the interlocutors have problems understanding the message.

Extract 6 is also an example of pragmatic repair because, although there are no syntactical, phonological or lexical problems in the conversation, the presenter attempts to prevent possible communication problems or troubles.

Extract 6

In extract 6, the speaker talks about obesity.

1- Student: Causes and types of obesity: ….excessive sleep what I mean by

→2- excessive sleep is sleeping during the day.

The student uses the technical term "excessive sleep" and, assuming that it is not understood by the interlocutors, s\he explains what it means. In extracts 5 and 6, the presenters try to repair their utterances although the utterances have no phonological, syntactic or lexical problems. They try to perform pragmatic repair; that is, they take the interlocutors into consideration and try to prevent misunderstandings.

So far, in the extracts the students generally perform self-initiated self-repair when they do not remember the exact word or the pronounciation of that word. When they have trouble in their utterances and are going to repair them, the repairs are generally preceded by 'fillers' such as "iii", "eee" and "ay". Very rarely, students also perform pragmatic repairs. In such cases, they seek to render their utterances clear to their interlocutors through the use of further explanation, imitation or the showing of pictures.

Self-Initiated Other-Repair

In this part, 3 extracts are given to illustrate cases in which the students needed to intitiate other-repair, and what kind of strategies they followed in initiating it:

Extract 7

In extract 7, the presenter talks about the history of the Oscar award.

1- Presenter: The most asked question about Oskar is who is shown as no need

2- the Oscar most? The person who is shown as no need the Oscar is (1.) (ii)

→ 3- Emily (ii) I cannot remember her (she puts her hand on face)

→4- Teacher: Merilyn Strip

→5- Student 1: Merilyn Striip: dimi?

→6- Student 2: (eem) Meriln\\

→7-Teacher and another classmate: Strip:

→8- Presenter: (laughingly) Strip

In line 3, the speaker does not remember the name of the actress. S\he identifies the trouble source by saying, "I cannot remember", which is an initiation of repair. As seen, in lines 4, 6 and 7, the interlocutors perform repair by saying, "Merilyn Strip, Merilyn Striip: dimi?, (eem) Meriln\\ and Strip:" but the presenter at first does not recognize their repairs. Ultimately, in line 8, s/he repeats what the interlocutors have said.

Similarly, in the following extract, the presenter initiates repair by saying "ee". Then one of the interlocutors does lexical repair.

Extract 8

→1**-** Presenter**:** The kings were aware of the son the reasons to bee (looks at the notes and starts to find the correct word).

→ 2- One of the classmates: destroy?

→ 3- Presenter: (indicating 3 approvingly) to be destroyed.

In line 2, one of the interlocutors takes the floor and offers a repair that the presenter accepts.

These extracts show that self-initiated other-repair generally also occurs in lexical repair. When a presenter or speaker does not remember a word, the interlocutors provide some words which might be alternatives for the unremembered word.

Another strategy to initiate repair that the presenter follows is code-switching to Turkish—the mother tongue of the presenter. This strategy is exemplified in the following extract:

Extract 9

In extract 9, the presenter talks about a scene in the soap opera "Kurtlar Vadisi".

1- Presenter: As I remember from a soap opera, "Kurtlar Vadisi", there is a man

→2- named Çakır but (iii) cutting *the koparmak neydi* (laughing) the cutting the

3- ear of a man saying hippie (?) *çıkar şunu*.

4- Teacher: Really? Is this what actually he says?

5- Presenter: Yes.

The student utters the word "cutting" and realizes that the word does not correspond to her intended meaning. She switches to Turkish, her mother tongue, and initiates repair by saying "koparmak neydi". She uses this strategy to make her statement better understood. Since the interlocutors understand what she means, they do not participate in the repair process. In line 3, the phrase "çıkar şunu" in Turkish proves that code-switching to L1 is a strategy that the student employs to repair the trouble in her utterances.

As opposed to what occurs in cases of self-initiated self-repair, in almost all cases of self-initiated other-repair students initiated repairs by explicitly saying that there were problems in their utterances. They either said "I cannot remember", or code-switched from English to Turkish. Generally, as in cases of self-initiated self-repair, they started to other-initiate self-repair when they could not retrieve the right target word from their memories. In such cases the interlocutors usually prompted lexical repair.

Other-Initiated Self –Repair

2 extracts are given to demonstrate the occurences of other-initiated self-repair:

Extract 10

In extract 10, the presenter talks about a symbol in one of da Vinci's paintings.

1- Presenter: There is a interesting claim. Do you see? There is a symbol like

→2- V. This symbolizes the women in Christian times and it cause it is called

3- Holica. (The presenter realizes that the teacher has a problem understanding and repeats the last word.)

→4- Presenter: Holica

→5- Teacher: No. Where is the symbol?

→6- Presenter: (Pointing to the symbol with her finger)

7- Teacher: All right.

In line 3, the speaker utters the name of the symbol: "Holica". Then, seeing the teacher's gestures, s/he utters the word "Holica" again. In fact, the trouble source is not the name of the symbol but the fact that the presenter has not identified the symbol in the picture correctly. Her/his classmates do not understand the symbol, either, but they do not ask the presenter where the symbol is. Then, in line 5, the teacher wants the student to identify the symbol in the picture. After doing so, the teacher and all of the students understand where the symbol is. The trouble source is not due to the wrong use of the word or its mispronunciation but due to pragmatic reasons: the presenter, assuming that the interlocutors have perceived the symbol, does not use her/his gestures to point it out.

Similarly, in the following extract, the teacher initiates repair and presents what s/he understood from the student's utterance.

Extract 11

In the extract, the student talks about her\his assessment of the statement that when a person is sleeping, s\he does not tell a lie.

1- Student: I heard that the person who sleeps do not tell lie so I tried this and it is true?

→2- Teacher: It is true (2.) You asked a question.

3- Student: Ye I asked some questions.

The student states that s\he has come to a conclusion after checking the truthfulness of the premise. The trouble source in his\her utterance is that the student does not say how s\he reached such a conclusion. The teacher realizes the trouble and repairs it by saying in line 2, "You asked a question", to learn whether the student has come to this conclusion by asking someone who has had such an experience. The teacher repairs the trouble in the student's utterance by relying on contextual assumptions and implications.

As these extracts show, content-based repair in this study group is initiated by the teacher. This differs from the repair strategies previously presented. Though the speaker's classmates have problems understanding what the presenter or another speaker has said, they do not initiate repair. In this instance, other-initiated self-repair is initiated only by the teacher. Another important point to emerge is that the speakers do not check whether their interlocutors have any problems in understanding them. They do not pay attention to their interlocutors' body language or facial expressions.

Other-Initiated Other-Repair

2 extracts are given below to present the occurrences of other-initaited other-repair:

Extract 12

In extract 12, the presenter finishes his/her talk about pyramids. One of his/her friends wants to ask a question.

1- Presenter: This is the end of my presentation. Is there anyone who wants to ask

2- a question?

→3- Student: Yea: I watched the film and I saw there are lots of trip? Is there any

4- (ee) why they are?

→5- Presenter: Is there any (2.) why they are?

→6- Student: Any things why they are?

→7- Presenter: What do you say about?

→8- Student: Trips

→9- Presenter: Trips?

→10- Student: Yes.

→11- Other students: Trap.

→12-One student: (code-switching to Turkish) tuzak tuzak tuzak varmis.

13- Presenter: I do not know.

The student observer wants to ask a question about pyramids. The trouble source is in line 3: the word "trip". The presenter does not understand the question. The strategy the presenter employs is to repeat the question and emphasize the trouble point in his\her friend's utterance. One interlocutor tries to repair the trouble but his/her repair is not successful. The presenter initiates repair again by asking, "What do you say about?" The interlocutor then repeats the topic entity "trip". However, the presenter still does not understand. The other interlocutors realize the trouble and say the word with the correct pronunciation as "trap." One of the interlocutors prefers to do repair directly by saying a Turkish equivalent of the word. As seen, the repair is initiated by the presenter and completed by other interlocutors.

In the following extract, the teacher realizes that the presenter's utterance is not understood by the interlocutors since s/he does his/her presentation in haste, which makes it difficult for the students to follow and get the intended meaning. The teacher initiates repair by asking a question.

Extract 13

1- Teacher: So that makes one point clear Do you know denim is also used as

2- adjective. Okey which shows the shade of the blue… and you are going to

3- choose… But also denim is what? a type of

4- Presenter: A trouser

→5- Teacher: Is it a type of fabric isn't it?

6- Student: Is it a type of what? Sorry.

→7- Teacher: It is a type of fabric. The item of cloth that is used for jeans.

8- Teacher: When you do not understand something, please stop your friend and

→9- ask. So what was the reasons that denim was used for jeans? Because the

→10- other materials were? (1.)

11- Presenter: The others were not (?) as the jeans frequent watching was not (she reads the lines from the paper).

12- Teacher: So they were not (?) as denims each time….

In extract 13, the presenter gives a wrong answer to a question. The other interlocutors keep silent, which means that they have not understood anything from their friend's presentation. It is observed that though there is a communication breakdown, the interlocutors do not make a repair. As seen in line 5, the teacher uses the word "fabric" but the presenter does not understand it and initiates repair by repeating the structure the teacher has used and using the question word "what" to signal the trouble. The teacher uses the word "fabric" again in line 7 and gives the definition of the word. In line 9, the teacher asks another question related to what the presenter has said. In line 11, the presenter gives an answer but it is not clear since s/he reads it from the book. The teacher realizes that the other interlocutors have difficulty understanding the presenter's utterance and thus she rewords it. Also, this extract is a good sample since in line 8, the teacher complains about the students' being silent and not even attempting to repair the communication breakdown. The teacher tries to lead the students to interact naturally in the classroom, but the students do not. Though the teacher wants to trigger such interaction, as is seen in the following lines, the students still do not take part in the conversation.

Conclusions and Recommendations

The students in this study perform self-initiated repair. They perform lexical, phrasal and phonological self-repair but they do not perform self-repair on content. For Shehadah (1991,1999), to have native-like interaction and proficiency, non-native speakers of English should perform self-initiated self-repair on the pragmatics and content of their utterances. However, in this study, the number of students who perform self-repair on content and pragmatics is very small. In addition, although some students realize the problems in their utterances, they do not self-repair. They do not pay attention to whether their classmates have problems understanding their utterances. An underlying reason for this may be that the students memorize what they will say and try to say what they have in their memories without monitoring their utterances or their addressees' gestures during presentations. They may also think that assignments should be accomplished in the classroom without interaction with their classmates. They may even not be aware of the fact that these assignments are meant to improve their communication and interaction skills in the target language.

The students also perform repair when they do not remember a word or a structure they want to use. They utter a word or structure using their lexicon but suddenly realize the trouble and make a repair. This kind of repair is due to the type of task being dealt with. Another case that causes trouble in an utterance and requires repair is when students do not use their gestures enough or correctly when needed. Also, when students utter two words that they assume have the same

meaning (such as "pictures" or "posters") and come to the realization that the word they have used does not fit in the context, they perform a repair: they substitute the first word with the appropriate one. Finally, repair is performed when students pronounce English words with Turkish pronunciation and then remember the right pronunciation of the words. For instance, they use such words as "pilato," which sounds Turkish, instead of the English word "plateau". In these cases, students perform a repair as soon as they realize the trouble. Although the students do perform self-initiated other-repair, this is not the most common conversational repair strategy they employ. In such cases, they provide a lexical remedial act—that is, they initiate repair by saying "yaa" or using words from their mother tongue, such as "I do not know yelkenli". In some cases, they directly say, "I cannot remember" and use head gestures.

The students in this use initiator techniques for self-initiated self-repair and self-initiated other repairs such as the noises/words *ay, eee, iii* or *what I mean*, and codeswiches to Turkish. The native speakers in Schegloff et al. (1977), however, employ a variety of non-lexical speech perturbations such as cut-offs, sound stretches and jokes. The possible underlying reason behind codeswitching is the linguistic and cultural homogeneity of the language class, which impacts the repair strategy used and the negotiation of meaning in the interaction. Since the students share the same mother tongue and cultural background, it is easy for them to express themselves in their first language when they have communication problems. This finding confirms Kingenger's (1995) hypothesis about classroom homogeneity and its role in repair strategies.

In other-initiated repairs, the students in this study use techniques such as repetition of the trouble turn and of the trouble source turn with the addition of a question word (e.g., The who?, To where?). Native speakers of English in Schegloff et al.'s (1977) study employ different techniques, such as the word "what ↑" or "huh ↑?" with a rising intonation, the use of a single question word such as "who" or "when" with a rising intonation, the use of jokes and the formulaic expression "Y mean plus a possible understanding of prior turn". Though the interlocutors in the class sometimes have problems understanding what the presenters or other students say, they do not initiate repair. Other-initiated self-repair is initiated only by the teacher in the conversation class. According to Schegloff et al. (1977), other-initiated repair strategies are the most frequent repair strategies in native-speaker–to-native-speaker interactions, but that is not the case in the conversation class. A possible reason why the classmates do not lead presenters to repair their utterances may be that they do not want to cause in the presenter "negative face" through overt and public repair. In other words, the students try to save their friends' positive face and ignore their mistakes (see Cook, 1989; Brown & Levinson, 1987). Since the teacher has an authoritative role in classroom interactions (Pace & Hemmings, 2008), the teacher's repairs are not seen by the students as a threat to face. The implication of this study for foreign language education is that students should be encouraged to perform self-initiated self-repairs on content and pragmatics. In foreign language classrooms, it should be emphasized that repair, repair strategies and the monitoring of one's own utterances are natural processes in communication and social interaction. Students

should be encouraged to monitor their utterances and repair them if they have communication problems.

When language teaching books such as *Focus on Grammar* and *Headway* are analyzed, it is seen that repair strategies and initiator techniques for native speakers of the target language are excluded. These strategies should be included in teaching books since foreign language learners do not know how to repair their utterances in the target language. Therefore, they mostly transfer strategies or techniques from their mother tongue, which might not be understood by native-English-speakers and prevent the students from achieving native-like proficiency. Cultural differences between Turkish and English in repair strategies should be touched upon in the language classrooms since repair strategies are culture-bound.

To achieve native-like interaction in foreign language classrooms, other-initiated other-repair should not be performed only by instructors. Students in the classrooms should be encouraged to initiate repair or to repair the problems in their classmates' utterances. A face-saving methodology should be created for classroom interaction among students. In other words, students should be led to repair their friends' speaking troubles without causing loss of face and help them achieve native-like proficiency. Above all, initiator techniques for self-initiated and other-initiated repair should be taught in language classrooms and used by students in classroom interactions.

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Yabancı Dil Sınıflarından Söylem Onarımları: Türkiye Bağlamından bir Durum Analizi

(Özet)

Problem Durumu: İkinci dil konuşucusunun dil yeterlilik seviyesinin konuşma esnasında seçilen onarım türlerine göre belirlenebileceği ileri sürülmüştür. İkinci dil kullanıcısı, konuşma esnasında ortaya çıkan iletişim sorunlarını fark edip düzeltirse, anadil konuşucusunun edimbilimsel yetisine yakın bir edimbilimsel yetiye ulaştığını belirtilmektedir. Ancak ikinci dil kullanıcısı konuşmadaki sorunları fark etmezse ve sorunlar dinleyici tarafından düzeltilirse, anadil konuşucusunun edimbilimsel yetisine ulaşmadığını söylenmektedir. Onarım stratejileri üzerine yapılan çalışmalar incelendiğinde, anadili İngilizce olmayan konuşucuların onarım strateji dağarcını inceleyen çalışmaların sınırlı sayıda olduğu görülmektedir. Diğer taraftan, Türkiyedeki çalışmalar incelendiğinde, yazarın en doğru bilgisine göre, anadili İngilizce olmayan Türkçe konuşucuların kullandıkları onarım stratejileri ve türleri üzerine mevcut bir çalışma yoktur. Bütün bunlar göz önünde bulundurularak, bu çalışma literatürde ileri sürülen onarım stratejilerinin anadili İngilizce olmayan Türkçe konuşucular tarafından kullanılıp kullanılmadığını irdeleyerek bu konuşucuların iletişim sırasında ortaya çıkan problemleri fark etme ve düzeltme yeterliliklerini araştırmaktır.

Araştırmanın Amacı: Bu çalışmanın amacı konuşma çözümlemesi yapılarak anadili İngilizce olmayan Türkçe konuşucuların ne tür onarım stratejilerini kullandıkları ve hangi durumlarda sözcelerini onarma gereksinimi duyduklarını ortaya koymaktır.

Araştırmanın Yöntemi: Bu çalışma niteliksel örnek olay çalışmasıdır. Veri analizi için konuşma derslerinin 10 saati video ile kaydedilmiştir. Bu 10 saatlik video kayıdının 8 saatlik bolumunun transkripsiyonu yapılmıştır. Konuşma derslerinde öğrenciler arasındaki tartışmaların ve öğrenci sunumlarının transkripsiyonu yapılmıştır. Söylem analizi yapılarak birbirini takip eden sözceler, söz alma, sözkesme ve onarım sözceleri işaretlenmiştir. Daha sonra transkripsiyondaki tüm onarım stratejiler belirlenerek gruplanmıştır.

Araştırmanın Bulguları: Bu çalışmanın bulgularına göre, öğrenciler kendi kendini onarma stratejisini kullanmaktadırlar. Bir başka değişle, söylemeyi istemedikleri sözcük, deyim ve öbek kullandıklarında veya bir kelimeyi yanlış telaffuz ettiklerinde kendilerini onarma ihtiyaçı duymaktadırlar. Fakat sözcelerindeki edimbilimsel ve içeriksel bir onarım ihtiyacını fark etmemektedirler. Literatürdeki mevcut çalışmalara göre anadil konuşucusu yeterlilik seviyesine ulaşabilmek için öğrencilerin özellikle edimbilimsel ve içeriksel onarım yapmaları gerekmektedir. Ayrıca öğrencilerin sözceleriyle ilgili onarmayı başlatıkları ve arkadaşlarının onarmayı tamamladıkları (Ing. self-initiated other-repair) durumlar da gözlenmektedir fakat bu çok kullanılan bir onarım stratejisi türü değildir. Bu çalışmada öğrencilerin arkadaşlarının söylediği sözceleri anlamada sorunlar yaşadığı halde bu sözceleri onarma ya da arkadaşlarını tümceleri onarmaya yöneltme gibi onarım stratejileri ve onarım başlatma tekniklerini kullanmadıkları gözlenmiştir. Bu sebeple, öğrencilerin sözcelerini onarma sürecini başlatan kişinin sınıftaki öğretmen olduğu gözlenmiştir.Ayrıca, bu çalışmada öğrencilerin onarım başlatma teknikleriyle ilgili ifade dağarçıklarının sınırlı olduğu gözlenmiştir.

Araştırmanın Sonuçları ve Önerileri: Öğrenciler edimbilsel ve içeriksel onarımlar yapmaya yönlendirilmeli ve onarım sadece öğretmen tarafından değil öğrenciler tarafından da yapılmalıdır. Öğrencilerin onarım başlatma teknikleriyle ilgili ifade dağarçıkları geliştirilmelidir.

***Anahtar Sözcükler*:** Söylem onarım yöntemleri, söylem analizi, yabancı dil eğitimi, yabancı dilde yetkinlik

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Teachers' trialing procedures for Computer Assisted Language Testing Implementation*

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Abstract

Problem Statement: Computer assisted language testing is becoming more frequent in many parts of Europe and the world. Likewise, in many countries like Spain, Greece, or Turkey (among many more), there is a move towards integrating information technologies and computers in high stakes testing. However, due to the limited information on this topic, it is necessary to provide active and training teachers with pieces of simple, accessible research that can help them understand the complex processes involved in designing language testing platforms or the relationship between computers and tests.

Purpose of the Study: The main goal of this paper was to examine different approaches to computer based language testing design and also show one example done in Spain which may also be valid for different contexts and countries like many university entrance examinations in Europe or the ÖSYM in Turkey.

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Methods: Linguistic and computer design principles were used to determine the guidelines that programmers and testing stake holders follow to design and determine the testing platform specifications. Process description is further supported by the presentation of a model in Spain that is also based on two other significant projects previously undertaken in Spain.
Findings and results: International or high stakes tests can be greatly enhanced by the use of computers in the test delivery process. Setting aside the convenience for security and economy reasons, computers allow for a richer and greater variety of tasks than the traditional pen and paper tests. The use of images is a powerful tool to trigger performance quality and quantity in second language testing. According to the current trialing done at the Polytechnic University of Valencia in previous experimentation, students feel at ease using computers in testing and it is quite motivating for them. As in other experiments and research experiences, it is still debatable whether this is due to the flow effect or that contextualizing test tasks through images and sounds facilitates language communication and performance.
Results: Analyses of the quantitative data showed that using mobile phones had positive effects on students' pronunciation learning. The qualitative data collected through the questionnaire and the interviews supported this finding. All participants provided positive feedback about the mobile learning application used in this study.
Conclusions and Recommendations: The paper concludes that good design guidelines according to visual ergonomics can enhance students' performance. Therefore guidelines for good practice and previous experimentation can enlighten similar projects, including those mentioned in Spain, Greece or the ÖSYM. Further research should indicate the reasons why computers may be positive for students especially in two measures: the difference between boys and girls and the potential existence of a flow effect in computer based language testing.

Keywords: testing, computers, design, guidelines.

High stakes tests have implied significant changes in many students all over the world. Tests like the Test of English as a Foreign language (TOEFL), International English Language Testing System (IELTS), Student Selection and Placement System (ÖSYM) or the Diploma de Español como Lengua extranjera (D.E.L.E.) determine in many cases the future of a great number of students. However, while the first two have progressively been computerized, others (like the last two) still need a major revision and soon will be online. Recently, many papers have intended to show the importance of going online (Dooey, 2008; García Laborda, 2007; Hunt, Neill & Barnes, 2007; Papadima-Sophocleous, 2008; Roever, 2001) especially where the population needs to be adequately placed (Zabaleta, 2007) to have better chances of attending reputed universities. Although some institutions like TOEFL have

attempted to do large linguistic research on validating the tests (Chapelle, Enright & Jamieson, 2008; Sawaki, Stricker, & Oranje, 2009), but few publications have aimed at addressing issues of validity, needs, and linguistic issues. However, very few have intended to give light to the main software design and more mechanical aspects of testing although Stoynoff and Chapelle (2005) published a book on the topic which can greatly benefit many general practitioners wishing to begin with CALT. Lack of information is considered relevant at the moment in many parts of the world where there is a clear intention of implementing computer based oral and written examinations.

Indeed, educational software design is mostly influenced by two determinant factors: intended use usability (Cheon, & Grant, 2009; Huang, Lin, & Cheng, 2009). In high stakes language testing (and educational testing in general) software needs to contribute to all the different aspects of test theory but, overall, validity (Ross, & Okabe, 2006). Thus, a good design of a language platform should facilitate the inference of the candidate's ability in a foreign language. Therefore, the key issue is how the test administrators believe this ability should be measured. Among other aspects, the type of items and tasks is one of the most significant. In this paper, we neither intend to deal with aspects of Item Response Theory nor with the functioning mechanisms of software such as the algorithms that control commonly delivered means such as adaptive tests but, instead, to suggest lines which can be understood in processes of CALT implementation, especially in low stakes situations (which, in the end, are the most common). In approaching this perspective, we will focus on three main aspects: first, considering the kind of tasks that the testing software will have to deliver; second, the common difficulties that software and tests administrators may have to foresee when designing the computer (or Internet) delivered test; and, third, a practical application through the presentation of the PAU-ER platform as an example of some of these issues. We are well aware that this is not a unique platform; furthermore, other research has shown different aspects and constraints of computer assisted language testing (García Laborda, 2006; Breithaupt, Ariel, & Veldkamp, 2005; Dooey, 2008; Raiche, & Blais, 2006; Smoline, 2008). Thus, the main goal of this paper is to address general issues that teachers, researchers, and test designers working together in small teams need to be aware of. In this sense, the paper is intended for general practitioners rather than software designers. Since test designers may not always be aware of the difficulties or problems in their interaction with programmers, here we will intend to establish some points and aspects to serve as an interface between educators and software writers.

Method

Establishing the Testing Needs

Most tests are intended for specific needs. For instance, TOEFL is intended to infer whether test takers will probably be able to cope with the communicative needs of a foreign student in a higher education institution in an English speaking country

such as the United States (Chapelle et al., 2008), the Diploma de Español como lengua extranjera (DELE) to verify the competence and command of the Spanish language, the Selection and Placement System (ÖSYM) to analyze and rank the students competence in a variety of subjects and English language, and so on. Therefore, administrators certainly have different goals in mind at the time of designing the kinds of tasks that will be included in the exam. For instance, while TOEFL might be most interested in including academic topics in a listening comprehension task such as listening to a lecture and verifying whether a student has been able to understand the basic information and would hardly include a conversation between a landlord and a guest; this topic could certainly be admissible in the DELE. Likewise, if TOEFL has computerized the writing tasks since 2000 most of its tests are a result of integrating new types of tasks (the so called "integrated tasks" for example) (Sawaki, Stricker, & Oranje, 2009) and also because of their interest in making clear that this will almost certainly be the most important means of academic communication in and out of class. Also, while IELTS may have been reluctant to change the traditional pen-and-paper test due to computer competence, TOEFL analyzed its users at the beginning of this decade and found that there was little difference in competence between the traditional test and the new delivery means (Manalo & Wolfe, 2000). Further studies in Turkey have also proved that computer test takers may even outperform handwriting candidates (Aydin, 2006). However, few would consider that students in developed countries anywhere in the world are certainly literate in computer use. Therefore, issues of reliability, realistic assessment and task formats that were unthinkable in pen and paper (or traditional listening tasks) have now become valid justifications for the generalization of computer based tests.

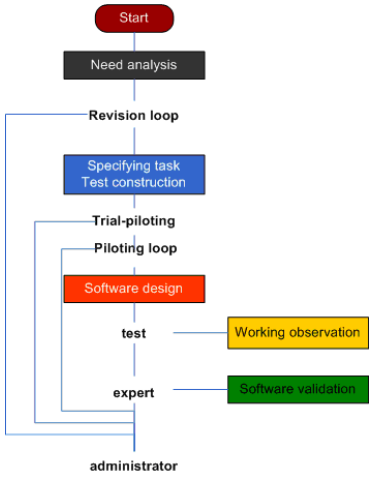

Figure 1. Design process.

Figure 1 shows the design of tasks in computer based language testing. As compared to the global high stakes test design, software design represents just a small step as compared to the whole process. In fact, the most significant part of the process corresponds to just planning and developing the tasks (that will be seen in the following section). Though the engineering works, while sophisticated, it just responds to the test administrators' needs. In our approach, we believe that software design responds to the experimented test tasks. In so doing, this approach considers that it is unnecessary to study what the administrators, students, teachers, and the rest of the stake are intending to assess. Thus, a series of factors need to be accounted for like reliability or face validity. In fact, García Laborda (2008) considers that computerizing a test is mostly related to the context in which the test is delivered and the intended use of that exam (face validity) with equivalent results to what could be evaluated in a pen-and-paper test (reliability).

In this approach, test administrators (diagram 1) design the tasks that will respond best to the test features and trial them. While trialing the tasks may involve a large number of students, software design trialing only requires a few groups of test takers. Once the tasks have been clearly defined and planned, the test administrators inform and give further specifications to the software designers. From that moment, the following aspects will be carefully considered:

1: Interface validation (García Laborda & Magal Royo, 2007; Fulcher, 2003): This is what the students and raters get to see and interact with;

2: Database for tests, tasks, and responses storage: The database that contains each test information, means of creating statistically readable files, and full information about the students' identity and performance, and raters' work;

3: c. Automatic correction systems such as the algorithms, and recognition systems (for written, objective, and speaking tasks) to check the responses;

4: d. Delivery means of both candidates' production and information retrieval by the institution and the students (very convenient if the candidate's performance needs to be revised or a number of raters need to review the responses);

5: e. Graphic design and ergonomics: All the stakeholders should be able to feel at ease with the software.

All these aspects are, however, due to the task design as mentioned above. As mentioned, it is not the main goal of this paper to deal with the definition of test construct or language domain that also affect to a certain point task software development, but certainly studies in this sense would be desirable. Instead, the following section will refer to planning tasks as the initial move towards the software development.

Thinking the Test Tasks

The test construct defines the goals and processes intended in a language test. If the main purpose is to measure whether a student will be able to communicate properly in a university context, it would be necessary to include tasks designed to

infer the degree of communicative competence that a student will have in an academic setting. For instance, if a Turkish administrator in the ÖSYM test considers that reading comprehension (which totals 60% of the grade in foreign language) may be a valuable measure of the English competence acquired in school (and that will serve to useand understand university language manuals) will devote most teaching time to this skill. The administrator will also make clear the expected competence in the content domain. In Europe, this notion is already clear in the European Framework of the Languages. This fact has facilitated not only the homogeneity of language diplomas and international mobility but also the administrators' definition for content domains. So the test administrator of the University Entrance Examination (PAU) or the Selection and Placement System (ÖSYM) may consider that a B2 level (higher intermediate competence) would be enough to enter the university and eventually become a competent university student.

Currently, mobility has become a major issue in higher education. The Bologna Declaration (Charlier, & Croche, 2008) or the increasing interest in students pursuing international education abroad has somehow moved the test administrator's and the rest of the different stake holders (the state, the universities, the teachers, the students, and so) to consider the integration of speaking skills as a must. Until the beginning of this century, the integration of oral skills in high stakes language tests was difficult, time consuming and, certainly, expensive. Giving oral tests to a large number of candidates required a large number of teachers. Of course, prestigious institutions like the Educational Testing Service (ETS) or the Cambridge Board of Examinations, as administrators and many international universities considered that having a record of the students' oral skills was necessary to move abroad to pursue higher education, but even ETS recognized its difficulty and the problems administering the oral tests and matching the score rubrics across the different skills (Chapelle et al., 2008). For instance, it was difficult to foresee if students taking the old TOEFL would have a similar competence when speaking to other graduate students than those who take the IB TOEFL.

As a consequence of these aspects, present and future staff involved (either as linguists or as programmers) in software design will have to consider four skills and some specific language and vocabulary use knowledge as the fundamental aspects to be assessed: reading, writing, listening, speaking, and language use (including grammar and vocabulary mostly). TOEFL suggests that each of the four skills should be measured at four different levels: "basic understanding, pragmatic understanding and integrating" (Chapelle et al, 2008, p. 100). However, test administrators certainly design the tasks according to their needs and expectations and, although this domain definition certainly has influence in software design, it requires expertise and continuous trialing.

Linear or Computer Adaptive Testing (CAT)

The two most common options of delivering a test through internet are linear test and computer adaptive. Linear tests are those that present the same questions to all the candidates usually in a consecutive manner. Computer adaptive testing is based in the Item Response Theory and the operational principle is that candidate faces one

question; if the answer is correct the following question will be more difficult but if the candidate gets a wrong answer, then an easier one is delivered. CAT requires large item pools because no single student gets exactly the same set of questions. In language use, remarkable grammar, reading, and even listening pools of items can be obtained with relative simplicity. However, when devising and preparing audiovisual prompts, costs can increase dramatically. CAT can also be defective in the extreme of the test continuum. That means that highly proficient testees may not be accordingly placed. For instance, in a recent trial of the Dialang CALT system with five native highly educated speakers, the system placed them in a C1 proficiency level in their mother tongue. However, Dialang remains as one of the best achievements in CAT. Another issue is whether incidentally many items are used continuously, or if there are not enough items, tests may not make clear distinctions among candidates and no individual differences can be observed, for instance, in norm referenced tests (whose main goal is to rank the students who take the test). Therefore, in this way, the test's validity is challenged.

To a large extent, the most important benefits of CAT are: (1) its simplicity in delivering the test, (2) the great facilities for statistical analysis, (3) its functionality in discriminating the proficiency level among the middle proficiency candidates,(4) its simplicity because the candidates do not spend their time in too easy or too difficult items (thus, it is rather motivating), and (5) its rating facility because immediate feedback can be obtained after the test has been completed.

Linear tests, on the other hand, can discourage students who may have to answer questions well below or above their language proficiency and the rating and informing processes are longer. On the other hand, they are more inexpensive to develop and provide all the candidates with exactly the same questions which ensures fairness, at least, in that very same test administration; they also allow for a larger type of items including those more active ones like writing or speaking. Also, they get independent raters and it is easier to respond to the generalizability theory (Kane, Crooks, & Cohen, 1999) basis and then make more satisfactory inferences, especially in the continuum extremes. Linear tests can be extremely useful for mixed ability groups with broad differences among candidates, for instance, in compulsory examinations like ÖSYM in Turkey or the PAU in Spain.

Consequently, CAT is valid when a large number of students need to take an objective test to place them in a rank. However, the whole process may fail to establish individual differences or to calibrate its results across other skills if the design is not properly done. Thus, it is absolutely relevant to have a good software design.

Evaluating Software Design

Through continuous research that has been proposed by García Laborda and Magal Royo (2007) to implement a computer based properly, the web tool should fulfill a set of guidelines that ensure the minimum criteria for its use in educational environments and later commercialization.

From the technical perspective, the compatibility factors that allows the web tool to be operational in any computer environment need to prevail over other factors such as web ornamentation or any other. To achieve compatibility programming language and databases oriented towards objects requires certain quality and design standards and needs to be adaptable to different navigation platforms and devices (including laptops and PDA's, Windows and Linux, and so). Computer assisted language testing platforms require security and control methods. In general, three types of security mechanisms concern this type of platform: (1) mechanisms related to the access to contents and files; (2) mechanisms related to programming languages that allow seeing and using the platform's interface; and (3) a protocol that assures the full transmission of all the information. The three protocols that are most commonly used are: (1) FTP for file transfer, (2) the hypertext protocol, HTTP, and (3) the encryption Secure Socket Layer, SSL. Apart from these protocols, from the functional perspective, two more factors are worth mentioning: Accessibility and usability. Taking into account these last two aspects is absolutely necessary for the explicit and coherent use of language testing tools.

Accessibility in language testing pays a significant role, because in language high stakes testing it is important that all the possible candidates may have the same opportunities to provide evidence of their language knowledge independently from their computer skills whether physical (like visually impaired), intellectual, or technical (different degrees of computer expertise). Additionally, interfaces and the computer tool for language testing should be simple, limit the use of icons, and avoid, whenever possible, cultural distortions such as misplacing the web objects or surprising places for control buttons. Obviously, these features are also linked to usability because through common techniques and verification processes the testing institution, whether large companies like ETS or small colleges, can control the shaping process of the tool such as the number of users or the implementation of adaptive tests.

To a large extent, the W3C World Wide Web Consortium develops and promotes the use of specific guidelines about accessibility that most websites (whether educational or not) follow. Therefore, when planning an online language test, the organizers do not only focus on the relationship between tasks and interface design but the W3C guidelines are necessarily followed. Apart from these guidelines, many language testing bodies also follow the Web Accessibility Initiative (WAI) guidelines and techniques. In general, educational websites are rated as AAA, which is the maximum category according to the WAI criteria on accessibility. For those teachers who may be involved in designing web based language testing it will be fruitful to mention that technically speaking, the accessibility is implemented through file structural logics, self-explicative contents and added semantics to cope with the maximum number of language test candidates who may present different levels of technology ability or sensorial capacity.

Once the website has been designed, it is necessary to trial it through usability methods. The most common method for language testing up to middle level tests such as those used in a private institution entrance examination (which may have to

test up to several hundred candidates). Most institutions using their own language testing systems usually use the inspection techniques which provide valuable information at the beginning of the design process. The best way to use them in language testing (or even in general education) is to generate a visual prototype (perhaps in Flash) that can be tested with the users or at the end of the application design to improve the final design. Data is collected by using questionnaires, think aloud protocols, and, sometimes, even focus groups. For instance, teachers who may be involved in trialing a new test with their students may use these methods but they should never forget to also provide information about sex, socioeconomic context, and ethnic differences and so to facilitate the designers work. Additionally, some institutions may suggest using more sophisticated techniques with expert cooperating teachers such as computer controlled techniques as route access use, video captures, or visual follow up.

However, most of the readers, if asked to facilitate or cooperate with the trialing of Computer Assisted Language Testing platforms (or even general testing platforms like the ÖSYM) will probably use opinion and attitude questionnaires that are oriented towards getting information on use comfort, satisfaction, and use of the testing tool. Additionally, other teams or even the same teachers will also value and compare and establish similarities and differences between the pen-and-paper and online tests.

A practical Case in Valencia (Spain)

In 2007 the Spanish government granted a research project to study whether it was possible to implement an online University Entrance Examination in Spain. Among other considerations, the project, which may be applicable to other contexts and countries worldwide, was based on a previous low stakes testing system called PLEVALEX (García Laborda, 2007). This project was well documented, especially in Spanish. According to the previous research and design system to implement the new project there were a few steps that were taken. Some of them were related to the different stake holders while others were related with technology itself. The research processes were: (1) experts' meetings for about 6 months on a weekly basis; (2) Focus Groups; (3) classroom trialing through questionnaires; (4) Information collection; and (5) platform reinterpretation and final design. The new platform, PAU-ER would be designed for tests that included speaking, listening, reading and speaking sections.

Findings and Results

Before going ahead, it is important to remember that the results hereby presented have been reduced because the purpose and scope of relating this experience is familiarizing the readers with the topic rather than an exhaustive explanation in detail of the design phase of the project. In this sense, this paper will briefly discuss the main aspects observed in each of the previous processes.

Experts' Meetings

According to previous experiences with PLEVALEX, some significant ideas on interface design had been obtained about simplicity, image delivery, and set up (García Laborda, 2007). Therefore, interest was placed in other features of the new platform. Among others, a significant part of the interest was data flux while taking the exam. Data flux is a significant part of information or data input and output. While in some past international projects, part of the system required the installation of part of the software in the resident computer where students would take the test (like Dialang or CB TOEFL), now what was new and challenging was onlining the whole system. That meant that not a single part would be installed in advance and that the new platform should be adaptable enough to operate in a variety of systems and devices (including mobile devices). This had two main implications: that its contents (the exam tasks and students' responses) would be transmitted directly from the host server to the students' computer; and that the contents would have no modification at all due to data transmission (Figure 2).

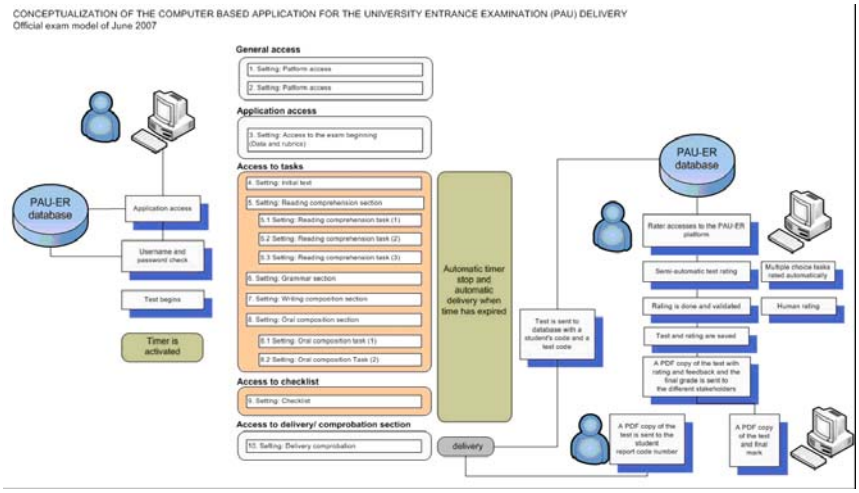

***Figure* 2.** PAU-ER platform flow diagram

Since the platform was designed for a variety of tasks, it was necessary to facilitate the transmission of image and sound files. Thus, in PAU-ER the major concern was placed in security and data flux and transmission. Because most platforms up to day did not include a speaking section (although PLEVALEX did), the secondary concern was on image presentation on a larger image player and a good recording system. As a consequence, when addressing teachers and students much emphasis was placed on comfort and image representation. Overall, as seen on figure 3, the image represented about 18% of the whole space in tasks that required

watching a video clip. As for the oral tasks, the platform played small mini-clips from a few seconds to one and a half minutes in length according to the different task. For integrative tasks, video player always had the same size (see figure 2) whether oral-written or oral-multiple choice or even listening-speaking.

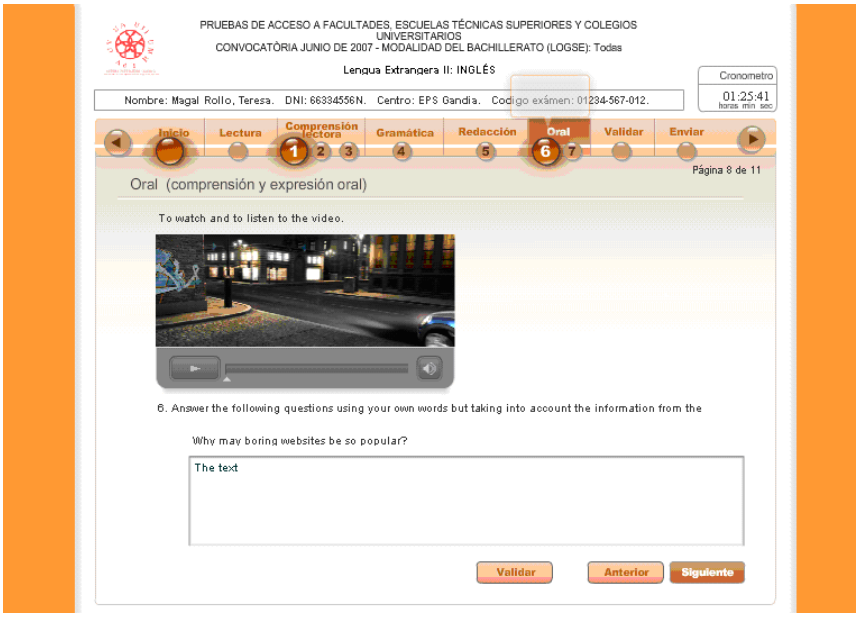

Figure 3. An oral task interface

A last issue for the experts was how to deliver the paper to virtually 5,000 students simultaneously. This was agreed to be done hierarchically with some computer clusters and subnets that ultimately would support one another in emergency situations (such as the malfunctioning of any one) and would also facilitate the delivery to minor groups. Nevertheless, data would be immediately transferred to both the central server and a mirror server (used for security reasons).

Focus Groups

Two focus groups were utilized first to study the kind of tasks that teachers demanded, and also to trigger ideas about the user questionnaires that should be answered by both teachers and students about use, comfort, teaching implementation, washback and hypothetical expected changes due to the new test implementation. Overall, the focus groups suggested that teachers should demand the inclusion of integrated tasks with a variety of skills being measured simultaneously. Besides, they provided ideas about the interface design that resembled very much what had been done and tested with PLEVALEX before, suggested that it was rather difficult to implement a new online test, and also thought that teachers would need extra training and even so some of them felt that some of their colleagues would not be able to catch up with the change.

Students' Questionnaires

Three groups of students were organized, asked to take the test, and finally express their opinions about their comfort, computer familiarity, visual ergonomics, task flow and operational capacity. They acknowledged that the oral tasks were difficult due to their classroom skills but not to the delivery means and that they consider in not a few cases more at ease with an online test and that their written production, for instance, could be easily modified than with the constraints of pen-and-paper tests. They answered that they did not feel strange when taking the speaking test and they considered the visuals delivery just right but it could be greatly enhanced by having a larger display. Finally, they also considered that images facilitated certain tasks like speaking, listening, and writing because the richer visual context triggered their vocabulary output but they had little influence in language use or grammar.

Two other aspects that need to be addressed in the future were that male students were apparently more engaged into the computers tasks and somehow some male students mentioned that using the computer in this way was like playing a game and was "gratifying". Overall, the researcher believed that male students outperformed the females but the sample was much too limited to achieve valid conclusions in this sense.

Information Collection, Platform Reinterpretation and Final Design

All the information collected was accordingly given to the prospective test administrators who reshaped and modified slightly some of the activities and tasks. Overall, they observed that students preferred simple, not integrative, tasks but this may be due to their learning tradition based on simple tasks without the use of multimedia nor visuals other than the static pictures found in pen-and-paper materials.

After getting the results from the students and teachers, computer designers made minor changes and validated the platform. Since the projects' goal was to verify the possibility of implementing the new system, the final report mentioned these changes and the information transferred to the researchers.

Conclusions and Recommendations

Computer assisted language testing will almost certainly be progressively implemented in high and low stakes tests. For instance, at the time of writing this paper the ÖSYM system may be either operational or in its final implementation stage, and the IELTS is working properly in some parts of the world like India. Likewise, everywhere in Europe similar experiments are occurring. Practitioner teachers need to know that they may be involved, and thus it was necessary to show how some of these projects are being experimented and organized, what the practitioner teachers' role may be but also show some evidence of the benefits of online testing.

Obviously, teachers may feel the importance of this sort of implementation but may also be reluctant and so it is necessary to provide them with training and teaching experience. Data from another study that is currently carried shows that

teachers may even panic when facing the major changes that the introduction of the online test may bring with it. Students also need to get used to it so publishers and schools will probably have to make an effort to facilitate the transition from paper to Internet. Thus, as mentioned by Birol, Bekirogullari, Etci and Dagli (2009), familiarizing with computers and reducing the negative feelings is absolutely necessary to bring this project into life.

Further research is necessary across cultures. Since in the Western world we get used to use certain types of interfaces or take the tests in certain ways, other ways of looking at testing have been neglected as well as the initial educational constraints that can be found in places where technology in education is not that common (Autor 1, 2007). It is also necessary to reconsider the role of boys and girls in language testing; very few studies have addressed the differences between them. Additionally, some other topics that became necessary to explore further were whether image and computer flow may have an incidence in testing and not just in learning. But, more than anything, what is necessary is to observe if the implementation of computer assisted language testing can be introduced in compulsory tests as opposed to the volunteers tests like IELTS or TOEFL. While in free taken tests, students may choose the format or even the test to give evidence of their language proficiency, in national or university entrance examinations across Europe, students do not usually have much choice of a test that is usually similar even in different regions.

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School Counseling Practices in Turkish Universities: Recommendations for Counselor Educators*

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Abstract

Problem Statement: Recently, as schools face more challenging conditions, school counseling duties have become vitally important. It has been observed that the discussion on practicum or internship has a significant place in the literature of school practices. This study is on the improvement of field experiences in training school counseling. More specifically, the aim is to determine the uniformity of practices and skills of trainees developed through their school counseling internship experiences in Turkey.

Purpose of the Study: The purpose of this study is to determine which practices intern trainees in Turkey carry out with regards to delivery system component, which was constituted by American Council for Accreditation of Counseling and Related Educational Programs. These practices were limited as (a) counseling formats (individual counseling and group counseling) and (b) guidance formats (individual, small group [about 3-5 students], large group [about 8-12 students], classroom guidance and school conference).

Method: The population of this study was 1000 senior trainees of counselor education departments from 19 different Turkish universities in the 2005-2006 school year. The sample was 345 senior trainees selected conveniently from this population. These students completed a Demographic

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Questionnaire and Questionnaire of Guidance and Counseling Applications in Schools.
Findings and Results: Participant trainees indicated that they practiced mostly classroom guidance (67%), but conferencing applications were the least applied (27%). The arithmetic mean of individual counseling sessions was 8.85 (SD = 7.97; n = 174) and group counseling sessions was 5.99 (SD = 5.10; n = 105). There is a pattern in most universities that formats are applied in the senior year/spring term (i.e., generally a single-semester internship). The most practiced formats were classroom guidance in the career area and individual guidance in the personal-social area (39% for each of them). The least practiced format is conferencing in the personal-social area (11%). However, all values were below 50%. Thus, the majority of the trainees seem not to have marked such internship duties.
Conclusions and Recommendations: As a conclusion, we cannot strongly claim that trainees can make the best use of necessary school counseling practices after graduation. Furthermore, it is predictable that trainees in this study will encounter hardship in practicing important skills efficiently unless they go through an in-service training. There is a need to develop the national standards in Turkey for counseling competencies and school counseling practices. During the supervision period, skills related to guidance formats as well as counseling formats of the students can be the focus.

Keywords: School counseling practices, counselor education, supervision, and practicum

Recently, as schools face more challenging conditions, school counseling duties have become vitally important. Hence, the importance of counselor education has gained more attention. It has been observed that the discussion on practicum or internship has a significant place in the literature of school practices (e.g., Coker & Schrader, 2004; Education Trust, n.d.; Johnson, 2000; Pérusse, Goodnough, & Noël, 2001a, b). It has been found that the most commonly reported critical element of students' education in school and community counseling is field experience (Furr & Carroll, 2003). As Bradley and Fiorini (1999, p.110) point out, "*A critical component in counselor education training is the practicum experience. Practicum is the first opportunity to assess the student's ability to apply with clients the knowledge and skills obtained from course work*."

This study is on the improvement of field experiences in school counseling training. More specifically, the aim is to determine the uniformity of practices and skills of trainees developed through their school counseling practicum experiences in Turkey. Internship takes one semester in schools and a practicum is necessary before internship. The practicum is usually implemented on campus and it is related to individual counseling skills. The main purpose of the *practicum* is to develop and refine counseling skills, while the *internship* provides the school counselor-in-training with the opportunity to perform a variety of school counselor-related activities

(Studer, 2005; also see Council for Accreditation of Counseling and Related Educational Programs-CACREP, 2008). As for the Turkish system, undergraduate courses are at least 130 credit hours and graduate 28-30 credit hours (Owen & Korkut, 2007). Before field work experiences, students take theoretical courses such as psychology, education, research methods, special education, vocational guidance, counseling skills and techniques, behavior disorders, group counseling, and ethics. In Turkey, internship at BA level is practiced mostly at schools, but students go through individual counseling practicum mostly on campus. However, we cannot say that comprehensive discussions take place among counselor educators in Turkey on school counseling practicum or supervision.

According to 2009 standards of CACREP (2008), 600 clock hours supervised internship, 240 hours of which is direct service, after practicum. Pérusse et al. (2001b) state that almost half of the school counseling programs in their sample students, go through 600 hours internship in schools. On the other hand, in Turkey, according to the program imposed by Higher Education Council, students are required to attend a total of 126 hours of vocational guidance and counseling practices, individual counseling practicum, and field works and internship at different semesters.

Practica and internship are seen as important in counselor training in many other countries but the extent, importance, and effect of such training is largely undocumented in Turkey. Therefore, it would be useful to describe intern trainees' field-based practice. With this aim, a national survey could be conducted to identify the practical applications of graduate students.

The objective in this part, therefore, is to find out which theoretical applications need to be practiced during the practicum period. With this in mind, the first step is to review literature on counseling education in the United States since we are going to take the American School Counselor Association [ASCA] National Model for comparative purposes (ASCA 2003; Borders & Drury, 1992; Dahir, 2004; Education Trust, n.d.; Galassi & Akos, 2004; Gibson & Mitchel, 2003; Gybers & Henderson, 2001; Sink & MacDonald, 1998). Because, according to Hatch (2004), "*The ASCA National Model is already becoming the standard of training in counselor education programs on a national level.*" (p. 244). A national survey by Pérusse et al. (2001b) indicates that approximately 69% of counselor education programs make use of this National Model either "extensively" or "moderately" in their curriculum to train new generations of professional school counselors. Consequently, the US ASCA National Model (2003) was determined to provide the model for this study. According to the standards in the ASCA national model, the students are expected to begin school counseling after they are efficient in the following skills: *foundation, delivery system, management system,* and *accountability* practices.

Analysis of this current literature made it possible to determine the categories of school counseling practices. For each defined category, it was necessary to form a list of the possible school counseling practices of undergraduate students in Turkey. In constructing the list, the characteristics defined as a result of the study conducted by

the Özyürek, Çam, and Atıcı (2007) were taken as a guide. The above mentioned list covers the following practices: (a) psychological tests, (b) self-report techniques, (c) school counseling program development, (d) program evaluation and accountability, (e) counseling formats (individual counseling and group counseling), (f) guidance formats (individual, small group [about 3-5 students], large group [about 8-12 students], classroom guidance and school conference), and (g) others (consultation, peer facilitation, coordination, orientation). In this study, due to space limitation, seven practice formats within the *delivery system* (ASCA, 2003) (items e and f) were chosen and how these practices are put to use by undergraduate intern trainees was investigated. Consequently, national data were gathered to describe how these intern trainees practice using these formats. As a result of the national data gained, a baseline for the application of guidance and counseling formats was formed.

Method

Population and Sample

To figure out the population of this study, the number of senior students who are in counseling department in universities throughout Turkey was searched. The booklet of the Student Selection and Placement Center (2002) has been referred to for that purpose and it has been found that throughout 19 universities in Turkey there were approximately 1000 senior undergraduate students enrolled in the 2005-2006 academic year. The population of the research consists of those senior students. The questionnaire was administered to 345 conveniently selected volunteer seniors (Female = 175, Male = 169, not mentioned = 1) from 18 universities (convenient sampling technique), which comprised 35.05% of the population. Students from only one of the universities were not included in the samples because of practical reasons. The students' age mean was 22.59.

Instruments

Demographic Questionnaire. Students were first asked their gender, age, and whether they did only observation or observation plus practical application in schools. To avoid any hesitation in giving answers, students were not asked any further questions regarding their identity. Additionally, that there would be no comparison among universities was stated in the explanations part.

Questionnaire of Guidance and Counseling Applications in Schools. The questionnaire instructions required students to mark the practical applications they used during their practicum in schools (not in campuses, hospitals, etc.). The questions of the questionnaire have been formed following seven different formats indicated in the introduction. Trainees have been asked two groups of questions: one following five guidance formats and the other following two counseling formats (see introduction above). Both groups cover three questions. The first questions related to five guidance formats; students were asked whether they conduct any guidance activity that can be described in these formats. The second questions inquired about the semester when they conduct these practices. Finally, the third questions were asked

to find out if contents of these activities comply with which of the three areas: academic, career, and personal-social areas. On the other hand, in the first questions on counseling practices, students were asked whether they carry out individual counseling and group counseling practices. The second questions were aimed at determining approximate number of sessions and the last questions were aimed to get information on the term in which they practice. The questionnaire consisted of checklist-type questions. In most of the questions, multiple responses were possible.

After preparing the questions for the questionnaire, 10 academicians and PhD students who worked at four different universities and three Master students who all worked at different schools as school counselors were consulted. Before administering the questionnaire to the whole sample, a pilot study (n=54) was conducted and the students were asked to define the difficult expressions that they found. As a result of the feedback received from the students, some statements in the questionnaire were simplified to be more comprehensible.

Procedures

The professors from the universities within the population were contacted via telephone or e-mail and requested to administer the questionnaire to the volunteer senior class students on the last days of the term. The questionnaires were completed between the last two weeks of May, which is the end of the spring semester for universities in Turkey, and the first two weeks of June.

Data Analysis

Descriptive statistics were run for the questions which required multiple answers. The percentages were rounded and displayed as whole numbers. No comparison was done among the various groups of findings.

Findings and Results

The data collected for the purpose of the study have been classified and investigated under these titles: Results of the seven practice formats, number of sessions, academic semesters, and developmental areas.

The Frequency and Percentage Results of the Seven Practice Formats. Out of seven practices, participant trainees indicated that they practiced mostly classroom guidance (67%), but conferencing applications were the least applied (27%). (Table 1: Multiple responses were possible).

Individual and Group Counseling Number of Sessions. Trainees were also asked to indicate the number of the sessions related to the practices. As can be seen in Table 1, the arithmetic mean of individual counseling was 8.85 (s = 7.97; n = 174) and group counseling was 5.99 (s = 5.10; n = 105). It should be noted that some of the students might have performed these practical applications in different environments such as at a university campus.

Practice Formats and Academic Semesters. The overall result indicated that students mostly practiced the applications on senior year/spring academic semester (Table 1: Multiple responses were possible). This is relevant both for guidance and for counseling formats. Again, the least preferred item was conferencing. However, it should be noted that the percentages indicating how often and in which terms these formats illustrated in Table 1 were applied are different and it can be concluded that fewer responses were given to questions related to academic semesters. The reason for this may be the degree of importance attributed by the students to such questions in the questionnaire. Still, it can be claimed that there is a pattern in most universities that formats are applied in the senior year/spring term (i.e., generally a single-semester internship). The other alternatives, values under 5%, were not indicated on this table (Table 1).

Table 1

The Frequency and the Semester of Application of Seven Guidance and Counseling Formats.

Guidance and Counseling Formats	Frequencies and percentages %		The semester when formats are applied (Percentages %)			
	f	%	3/Spring	4/Autumn	4/Spring	4/A & S
Individual guidance	220	64	-	6	17	7
Small group guidance	130	38	7	12	24	17
Large group guidance	176	51	6	7	18	14
Classroom guidance	230	67	-	10	18	18
School conference	92	27	-	5	16	-
Individual counseling	192	56	-	11	25	12
Group counseling	122	35	-	5	21	-

4/A & S: Marks the applications conducted in both fall and spring terms of the 4th grade.

Note: Values below 5 % are not displayed in the Table. Multiple responses were possible.

Five Guidance Formats and Developmental Areas: In this section, the students were asked which of the five guidance formats are suitable to the contents of activities they have done in three developmental areas (academic, career, and personal-social) and they were also asked to indicate the number of these activities. In Table 2 (multiple responses were possible) frequencies and percentages of students who performed activities according to three developmental areas and five

formats. Additionally, the median-not the mean- of the number of activities was calculated. The reason for calculating the median was that some of the responses to the question "Can you indicate how many activities you have practiced?" were 100. It has been estimated that some procticum students might have written the number of the students who participated in the activities instead of the number of the activities they have practiced. In that case, if the arithmetic mean would have been taken, one could have thought that the students had conducted too many activities. We have tried to reduce this uncertain situation by presenting the median values.

As Table 2 shows, we cannot say that one of these three areas was not preferred more than the others. The most practiced formats were classroom guidance in the career area and individual guidance in the personal-social area (39% for each of them). The least practiced format is conferencing in the personal-social area (11%). However, all the values were below 50%. Thus, the majority of the students seem not to have marked such practices.

Table 2

Medians, Frequencies, and Percentages of Activities Conducted Following Three Developmental Areas and Five Guidance Formats.

	Individual G			Small Group G			Large Group G			Classroom G			Conference		
	Mdn	f	%	Mdn	f	%	Mdn	f	%	Mdn	f	%	Mdn	f	%
A	2	104	31	2	59	18	3	85	25	2	120	36	1	44	13
C	3	123	37	3	52	15	3	94	28	2	130	39	1	45	13
P-S	3	148	39	3	53	16	3	101	30	3	115	34	1	36	11

G: Guidance, Mdn: Median, f: Frequencies, A: Academic guidance activities, C: Career guidance activities, P-S: Personal-Social guidance activities.

Note: Multiple responses were possible.

In Table 2, the median values for the number of guidance formats, except for conferencing, were 2 or 3. The modes mostly have been found as 1 or 2. For conference applications, both the median and the mode were 1. However, it is impossible to understand from these findings whether a median trainee from any university conducts all of the 32 practices illustrated in 15 cells (3 [areas] x 5 [applications]=15) in Table 2 or not. Another issue to be pointed out is that percentages shown in Table 2 belong to 11-39% of the sample; that is, the majority of the students may not have marked such activities.

Conclusions and Recommendations

In this research, a national survey regarding practices of Turkish students was conducted at schools, following the seven guidance and counseling formats. The

main aim of the study was to describe the practices during the practicum and to evaluate whether or not the students after graduation can carry out the skills efficiently according to ASCA National Model (2003) and to predict on which formats they might struggle. According to the pattern of findings (a) the students apply seven guidance and counseling formats to raise their self-efficacy beliefs especially in the last semester, (b) more than half of the students go through classroom guidance, individual guidance, individual counseling, and large group guidance practices, and (c) they have applied about 30 to 35 academic, career and personal-social activities (that is 15 cells X 2 activities in Table 3) with the five guidance formats.

The two counseling formats in this study are related to *responsive services* (e.g., individual and small-group counseling, and crisis counseling), subsystems of the delivery system. Sisson and Bullis (1992) state that school counselors have multiple tasks and duties, however, assisting students with their personal concerns remains a high priority at all levels. For that reason, learning counseling skills is the most important issue for school counselors. Akos and Scarborough (2004) analyzed the contents of internship syllabi of 59 school counseling programs. The most frequent content area theme listed in these syllabi was counseling skills and techniques (28%). Related to the course objectives stated in these syllabi 332 'meaning units' were identified. Among the meaning units listed, individual counseling and case conceptualization were 17% and group counseling was 5%. On the other hand, among the 133 meaning units determined regarding on-site requirements, individual counseling (9%) had the lowest frequency. According to Akos and Scarborough, "*Direct services other than individual counseling (e.g., classroom guidance) may be more distinctive to clinical training in school counseling*" (2004; p. 103).

This finding is valid only for half of the students in the sample. If we consider counseling skills at three levels: beginner, intermediate, and advanced, almost half of the trainees can be categorized at a pre-intermediate level regarding individual and group counseling (cf. Tryon, 1996). The reason for this can be attributed to the amount of time spent on supervision at some of the universities in the sample. Thinking that the students may have conducted individual and group counseling practices outside schools, at places such as campuses, we can say that they have gained enough experience to be compared to guidance formats.

The results of this study show that graduates of counselor education departments can conduct individual guidance and classroom guidance formats of the delivery system practices most efficiently in academic, career, and personal-social areas. Nevertheless, they may have difficulty in conducting other guidance formats such as small group guidance, large group guidance, and school conferencing and individual and group counseling. It can also be added that these skills are mostly related to guidance curriculum and individual student planning in delivery system components in the ASCA National Model (2003). According to the findings of Akos and Scarborough (2004), the most frequent theme in on-site requirements was large (including classroom guidance) and small group counseling (25%). An important percentage of the students apply the practices only in their last semester, which is a

limited span of time for developing such important skills. These findings are in line with the findings of Özyürek (2006) and Korkut's (2007b) which determined the inefficiency of practices of vocational guidance of the counselors in Turkey. Sisson and Bullis (1992) conducted a survey of school counselors' perceptions of graduate training priorities to determine the priorities in school counseling preparation. As a result of their study, it is indicated that classroom guidance and parent training should be given priority, especially at the elementary level. Also, they suggest that trainees have ample hands-on experience.

Additionally, it can easily be estimated that these practices are not conducted in a standard fashion in all universities throughout the country. The findings in this study are parallel to the findings that school counselors do not gain the required skills properly during their education (McMahon & Patton, 2001; Sutton & Page, 1994) or that educators of counselors do not follow national standards in any consistent fashion (Pérusse et al., 2001a). Akos and Scarborough (2004) state that there is wide diversity regarding expectations for students in the school counseling practicum.

Implications

The inefficiency of practices may cause the trainees to be in need of supervision experience (e.g., Page, Pietrzak & Sutton, 2001; Roberts & Borders, 1994); and suffer from stress (Borders & Usher, 1992). Experiencing difficulties, especially for new graduates, leads to skill loss in the future. According to the findings of Scarborough (2005), practices of school counselors related to duties of coordination and consultation show a significant relation with years of experience, yet points taken from counseling and curriculum subscale do not show a significant relation. When skills practiced in training settings are different from or fewer than the ones required for school counselors, especially under stressful situations, it is not difficult to predict that new graduates will have difficulty in the initial phases of their career (McMahon & Patton, 2001).

At this point, we can propose some implications for educational policies that can be formulated by counselor educators both in Turkey and internationally. The current literature shows that in all countries, the practices in the education of counselors need to be developed. Spreading practices of school counseling in Turkey to both semesters of the senior year can be more beneficial. Along with these practices, the students need to spend a certain amount of time at schools or they should directly be in service within the time limits set by CACREP standards. In addition to the time limitation, there can be a minimum limit on the number of duties carried out by school counselors. For instance, every trainee may be obliged to conduct a set number of conference and small group counseling. Bringman and Sang (2008) also state that students of school counseling should conduct a certain number of developmental classroom lessons to gain practical experience. As Leach, Stoltenberg, McNeill, & Eicherfield (1997) also mention, the amount of practice necessary for a school counselor to become competent can be analyzed. Accordingly,

different levels (such as level-1 and level-2) can be determined for practices of the practicum. For instance, it may be useful to define the number of adequate practice formats in fall and spring terms (for example, minimum 14 large group guidance, 5 classroom guidance) for students to feel competent in guidance formats when they graduate.

We can also propose implications for international policy makers. Understanding the basic components of school counseling practicum is of great importance. We live in a time when there is a critical need for specific documentation which proves the positive effects of student practices on school counseling self-efficacy. For example, literature on supervision in the USA generally focuses on clinical supervision. Parallel to Lazovsky and Shimoni's (2007) opinions, during supervision instead of highlighting individual counseling sessions, it is better to focus on other skills (the guidance formats, counseling program development, evaluation, etc.) related to school counseling. First of all, according to CACREP (2001, p.55), "*...programs explicitly prepare students to be counselors first and counseling specialists second.*", but "*New vision of school counseling*" (Lazovsky and Shimoni, 2007, p. 312) also requires this. On the basis of the desired skill sets in graduating school counseling students, guidance curriculum practice should be given as much place as individual counseling practice in the mental health counseling field. In other words, students should practice other school counseling skills such as classroom guidance, psychological testing, consultation, coordination, small group counseling, and large group guidance as often as the practice of individual counseling skills (Kahn 1999). Crutchfield and Borders (1997) assessed clinical supervision in relation to variables such as counseling self-efficacy, counseling effectiveness, and client change. Accordingly, they report that supervisors should define program development, accountability, classroom guidance, psychological testing, consultation targets for clinical supervision meetings, and trainees should be given feedback for their performances. Site supervisors in schools should also give this type of feedback. In addition, setting time limits for experiences in practicum institutions may not be sufficient for the field of school counseling - time limits can be more suitable for mental health counseling, because duties of school counselors are varied and complex. For that reason, as much as time limits, taking the skills mentioned in the ASCA National Model (2003), compulsory practices at least at two hierarchical levels; what these practices are and the number of practices to be conducted can be determined.

We can also propose study areas for future research. An area of investigation is the effectiveness of practices in important skills such as, consultation, crisis counseling, referrals, peer facilitation, and parent workshops in delivery system as well as guidance and counseling formats. How school counseling students develop in these practices can also be studied (see Atıcı, Özyürek, & Çam, 2006; Crutchfield & Borders, 1997; Fong & Borders, 1997; Tryon, 1996). To do this, a measurement instrument to assess school counseling practicum self-efficacy should be developed (Scarborough, 2002; Yiyit, 2001). Further studies can also analyze whether there are different skills necessary for elementary and secondary schools. For instance, counseling formats in secondary schools and guidance formats in elementary schools

may be practiced more than the others. Moreover, the differences in practiced applications according to supervisor variables (i.e. age, gender, certification, and supervisor experience) or according to site variables (i.e. school level, school district, and caseload) can be researched (Kahn, 1999). Another research area is investigating the effect of the ASCA National Model (2003) or other developments in North America on the constructs of counselor educators in other countries. Specifically, a cross-cultural study comparing counselor educators from different countries including Turkey and educators from the USA will give us an idea as to the importance they give to individual counseling sessions during supervision.

Limitations of the study. This study does not focus on the students practiced applications related to foundation, management system, accountability, ethical issues, applications used in case of crises, performance during the counseling period, and computer assisted services. Findings were not analyzed according to the characteristics of subgroups. Further studies should be done to compensate for these limitations.

Conclusion

As a conclusion, we cannot strongly claim that the students can make the best use of necessary school counseling practices after graduation. Furthermore, it is predictable that students in this study will encounter hardship in practicing important skills efficiently unless they go through an in-service training. There is a need to develop the national standards in Turkey for counseling competencies and school counseling practices.

During the supervision period, skills related to guidance formats as well as counseling formats of the students can be the focus. Otherwise, the school counseling profession in Turkey can have difficulty both in legal terms and in terms of recognition within the system similar to the US situation (Dahir, 2004).

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Türkiye'deki Üniversitelerde Yapılan Okul Psikolojik Danışmanlığı Uygulamaları: Psikolojik Danışman Eğitimcileri için Öneriler

(Özet)

Problem Durumu: Son yıllarda, okullara daha zorlayıcı koşullarla karşı karşıya kalırken, okul psikolojik danışmanlığı görevleri daha önemli hale gelmektedir. Bundan dolayı, psikolojik danışman eğitimin önemi daha da artmaktadır. Uygulama ve stajla ilgili tartışmalarda, okullardaki uygulamalara ait alanyazının önemli bir yere sahip olduğu gözlenmektedir. Bu çalışma okul psikolojik danışmanlığı eğitiminde alan yaşantılarının daha iyi hale getirilmesiyle ilgilidir. Daha ayrıntılı biçimde belirtmek gerekirse, çalışmanın amacı Türkiye'de okul psikolojik danışmanlığı uygulamalarında öğrencilerin geliştirdikleri beceri ve uygulamaların ne ölçüde benzerlik gösterdiğini belirlemektir.

Araştırmanın amacı: Bu çalışmanın amacı Amerikan Okul Psikolojik Danışmanlığı Derneği tarafından oluşturulan ulusal modelin hizmet sunumu bileşenine göre Türkiye'deki uygulama öğrencilerinin hangi uygulamalar yaptıklarını belirlemektir. Bu uygulamalar (a) psikolojik danışma formatları (bireyle psikolojik danışma ve grupla psikolojik danışma) ve (b) rehberlik formatları (bireysel, küçük grup [yaklaşık 3-5 öğrenci], büyük grup [yaklaşık, 8-12 öğrenci], sınıf rehberliği ve okul konferansı) şeklinde sınırlandırılmıştır.

Araştırmanın Yöntemi: Bu çalışmanın evrenini Türkiye'de 2005-2006 eğitim-öğretim yılında Türkiye'deki 19 üniversitenin psikolojik danışma ve rehberlik anabilim dalından mezun olan yaklaşık 1000 son sınıf öğrencisi oluşturmaktadır. Örneklem ise, bu öğrenciler arasından uygun örnekleme tekniğiyle seçilmiş 345 (%35.05) öğrenciden oluşmaktadır. Öğrencilere iki anket uygulanmıştır. Demografik bilgi anketinde öğrencilere yaşları,

cinsiyetleri ve okullarda tek başına gözlem mi yoksa gözlemin yanı sıra uygulama da yapıp yapmadıkları sorulmuştur. Yanıt verirken çekinmeleri engellemek amacıyla kimlikleri ile ilgili başka bir soru sorulmamıştır. Ayrıca, üniversiteler arasında herhangi bir karşılaştırma yapılmayacağı da açıklama kısmında belirtilmiştir. İkinci olarak, okullarda rehberlik ve psikolojik danışma uygulamaları anketi uygulanmıştır. Ankette okullarda (kampus ya da hastaneler, vb. değil) yapmış oldukları uygulamalarla ilgili toplam yedi formata göre sorular sorulmuştur. Yukarıda açıklanan beş rehberlik formatı için üçer soru sorulmuştur. Birincisinde bu beş rehberlik formatına göre herhangi bir rehberlik etkinliği yürütüp yürütmedikleri, ikincisinde yürüttülerse bunu hangi dönemde yapmış oldukları ve üçüncüsünde de bu etkinliğin üç alandan (akademik, kariyer ve kişisel-sosyal) hangisine daha uygun olduğu sorulmuştur. Psikolojik danışma formatları açısından ise yine üç soru sorulmuştur. Birincisinde, bireyle ve grupla psikolojik danışma uygulamaları yapıp yapmadıkları, ikincisinde yaklaşık olarak kaç oturum yürüttükleri ve üçüncüsünde de bu uygulamaları hangi dönemlerde yaptıkları sorulmuştur. Bu soruların genelinde birden fazla seçeneği işaretlemek mümkündü. Anketlerin uygulanması Mayısın son iki haftası ile Haziranın ilk iki haftası içerisinde tamamlanmıştır. Böylece, öğrencilerin uygulamalarını tamamlamaları beklenmiştir.

Araştırmanın Bulguları: Örneklemdeki öğrenciler en çok sınıf rehberliğini (% 67) ve en az da okul konferansı (% 27) uygulamaları yaptıklarını ifade etmişlerdir (Tablo 1). Birden fazla seçenek işaretlemek olasıydı). Bireyle psikolojik danışma oturumlarının ortalaması 8.85 (s = 7.97; n = 174) iken grupla psikolojik danışma oturumlarının sayısı olarak 5.99 (s = 5.10; n = 105) bulunmuştur. Öğrencilerin bir kısmı bu uygulamaları üniversite yerleşkesi gibi yerlerde yapmış olabilecekleri unutulmamalıdır. Birçok üniversitede bu formatlarla ilgili uygulamaların dördüncü sınıf bahar döneminde (yani, genellikle tek dönemlik uygulama) yapıldığı anlaşılmaktadır (Tablo 1). Bu bulgu hem psikolojik danışma hem de rehberlik formatları için geçerlidir. En çok uygulanan formatlar kariyer alanında sınıf rehberliği ve kişisel-sosyal alanda ise bireysel rehberlik olarak bulunmuştur (her ikisi için de % 39). Kişisel-sosyal alanda en az tercih edilen format okul konferans (% 11) olarak bulunmuştur. Diğer yandan, bütün işaretlemelerle ilgili değerler % 50 değerinin altındadır. Böylece, uygulama öğrencilerinin çoğunluğunun bu görevleri işaretlemedikleri görülmektedir. Tablo 2'de, okul konferansları dışında, rehberlik formatlarının ortanca değerlerinin sayısı 2 ya da 3'tür. Tepedeğerlerin çoğunluğu 1 ya da 2 olarak bulunmuştur. Konferans uygulamaları için hem ortanca hem de tepedeğer 1 olarak bulunmuştur. Diğer yandan, Tablo 2'deki bu bulgulardan her hangi bir üniversitedeki ortanca bir öğrencinin bu 15 hücredeki 32 uygulamanın (3 [alanlar] x 5 [uygulamalar]=15) hepsinin birden yaptıklarını anlamak olanaksızdır. Bir diğer konu Tablo 2'de görülen yüzdelerle ilgilidir. Örneklemin % 11 ila

39'u bu işaretlemeleri yapmıştır. Yani, öğrencilerin çoğunluğu bu tip etkinlikleri işaretlememiştir.

Araştırmanın Sonuç ve Önerileri: Psikolojik danışma becerileri başlangıç, orta ve ileri şeklinde üç düzeyde ele alınırsa, hemen hemen öğrencilerin yarısı bireyle ve grupla psikolojik danışma becerileri bakımından orta düzeyin başlangıcında (pre-intermediate) bulunuyor olabilirler. Araştırma bulguları psikolojik danışma ve rehberlik anabilim dallarının mezunları en etkili biçimde bireysel rehberlik ve sınıf rehberliği formatlarında hizmet sunumu sisteminin uygulamalarını akademik, kariyer ve kişisel-sosyal alanlarda yürütebilirler. Ancak diğer rehberlik formatları olan küçük grup rehberliği, büyük grup rehberliği ve okul konferanslarını, aynı şekilde bireyle ve grupla psikolojik danışma uygulamalarını yapmakta zorlanabilirler. Yaşanan zorluklar özellikle yeni mezunların gelecekte becerilerinin kaybolmasına neden olabilir. Ayrıca, bu uygulamaların Türkiye'deki üniversitelerde standart biçimde yapılmadığı kolayca tahmin edilebilir.

Bu noktada, hem Türkiye hem de uluslararası anlamda psikolojik danışman eğitimcileri için bazı eğitim politikaları önerilebilir. Türkiye'de okul psikolojik danışmanlığı uygulamalarının son sınıfın her iki döneminde de yapılması daha yararlı olabilir. CACREP standartlarında olduğu gibi, öğrenciler okullarda belirli zamanlarda bulunabilirler ve belirli sürelerde doğrudan hizmet üretebilirler. Zaman belirtmenin yanı sıra, okul psikolojik danışmanları tarafından yürütülen görevlerden belirli sayılarda yapılması istenebilir. Örneğin, her öğrenci konferans ve küçük grup rehberliğinden belirli sayıda yapmak zorunda olabilir. Buna göre, uygulamalar için farklı düzeyler (söz gelimi 1. düzey ve 2. düzey gibi) belirlenebilir. Örneğin, öğrencilerin mezun oldukları zaman kendilerini yetkin hissetmeleri için güz ve bahar dönemlerinde her bir formata göre uygun bir sayı belirlemek yararlı olabilir (en az 14 büyük grup rehberliği, 5 sınıf rehberliği gibi). Süpervizyon çalışmaları zamanında sadece bireyle psikolojik danışma oturumlarına değil, okul psikolojik danışmanlığı ile ilgili diğer (rehberlik formatları, PDR'de program geliştirme, değerlendirme, vb.) becerilere de odaklanmak daha yararlı olabilir.

Sonuç olarak, mezuniyetten sonra gerekli okul psikolojik danışmanlığı becerilerini mezunların en iyi biçimde uygulayabilecekleri söylenemez. Ayrıca, bu çalışmaya katılan mezunların hizmetiçi eğitim almadıkça becerileri yetkin biçimde uygulamada zorlanabilecekleri söylenebilir. Psikolojik danışma becerileri ve okul psikolojik danışmanlığı uygulamaları için Türkiye'de ulusal standartların geliştirilmesine gereksinim bulunmaktadır. Süpervizyon sırasında, öğrencilerin psikolojik danışma formatları kadar rehberlik formatlarıyla ilgili becerilerine de odaklanmak yararlı olabilir.

Anahtar Sözcükler: Okul psikolojik danışmanlığı uygulamaları, psikolojik danışman eğitimi, süpervizyon ve uygulama.

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The Effects of Computer Simulated Experiments on High School Students' Understanding of the Displacement and Velocity Concepts

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Abstract

Problem Statement: The number of relationships between important concepts is higher in physics courses than in other courses. As well as the definitions of complicated concepts, the feature of concepts should be learned. Using traditional instructional methods are sometimes not enough to teach physics concepts like velocity and displacement. Based on implications in the literature, Computer Simulated Experiment (CSE) seems to be a satisfactory approach that can be used to promote students' science achievement, and it is important to test how successful it will be when compared to Hands on Laboratory (HOL) study.

Purpose of Study: The main purpose of this study was to investigate the effectiveness of CSE over HOL study on the understanding of velocity and displacement concepts when both teaching methods were used as a supplement to regular classroom instruction. The second purpose was to identify whether logical thinking ability accounted for a significant portion of variation in achievement related to velocity and displacement concepts.

Methods: In this study, the pretest/post-test control group design was used. Each treatment (CSE & HOL) was randomly assigned to the experiment group and the control group. Both groups were administered a pretest of Velocity and Displacement Concepts Achievement Test (VDCAT) and a Logical Thinking Ability Test as dependent variables. Then, both groups

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were post-tested with the same VDCAT. The sample of the present study consisted of 61 tenth grade students enrolled in two physics classes of the same teacher in a high school.

Findings and Results: Post-test scores revealed that a significant difference was obtained between the mean scores attained by the CSE group and hands-on group with respect to physics achievement. The CSE group scored significantly higher than the hands-on group with respect to achievement in physics related to velocity and displacement concepts. On the other hand, logical thinking ability accounted for a significant portion of variance in physics achievement.

Conclusions and Recommendations: Computer-simulated laboratory experiments, together with classroom instruction, appear to be a practical strategy in implementing a physics program. They can be organized such that the application of physics concepts is stressed. This approach will improve understanding of physics subject matter. Well-designed computer simulations can be used for teaching some concepts without extra effort and time from the teacher to prepare materials.

Keywords: Computer simulated experiments, computer assisted instruction, logical thinking ability, physics education

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Physics courses, in comparison to other courses, cover concepts that are more leading, more significant, and at the same time, are technical (Donald, 1993). The relationships between the concepts are causal. The number of relationships between important concepts is higher in physics courses than in other courses. As well as the definition of complicated concepts, the feature of concepts should be learned. For this reason, an important goal of physics education is to help students develop an understanding of concepts and use them when solving a problem in a new situation. Students frequently find solving science problems difficult (Jimoyiannis & Komis, 2001). The major difficulty in solving physics problems is the lack of understanding physics concepts (Wilt, 2005).

Many researches indicate that many high school students have some problems in understanding fundamental concepts and principles in physics (Idar & Ganiel, 1985; Reif & Larkin, 1991; Andaloro, Bellomonte, Lupo, & Sperandeo-MÝneo, 1994). In order to solve physics problems, students should have mathematical and thinking skills (Wilt, 2005). Mechanics is a prior condition for most of the rest of physics. Therefore, the student's knowledge of mechanics is important for his course performance to understand physics better. Hence, we can restrict our attention to that domain of physics.

Kinematics is often treated as a sequence of definitions and operations by giving examples of motion of objects. Trowbridge and McDertmott (1980) and Çataloğlu (1996) found that students could not discriminate between position and velocity. Students' alternative conceptions of velocity and acceleration, for example, are considered to be as not easily affected by traditional instructional methods. Students often have major difficulties when using graphical representations of motions (McDertmott, 1987; and Beichner, 1994). One of the difficulties of students in these concepts is representing such features as speeding up, and speeding down, and also in recognizing that the velocity versus time graph should be a plot of the position versus time graph. These concepts require students to function at the level of formal operations such as hypothetical, proportional, probabilistic reasoning, and identifying and controlling relevant variables. Researches in science education have brought to light the importance of formal reasoning influencing achievement in science courses (Geban, Aşkar, & Özkan, 1992). In the present study, the role of logical thinking ability on achievement was investigated.

On the other hand, the teaching style for teaching physics is very important as a quality of instruction. This study compared two approaches: HOL experiments and CSE (both used as a supplement to classroom instruction). Probably one of the important aspects of the laboratory is the verbal interaction that takes place between instructor and student. This interaction gives the instructor an opportunity to obtain feedback from the students on their level of understanding. "Most science educators agree that the laboratory is a necessary aspect of the learning experience in science courses" (Kyle, Penick & Shymansky, 1979, p. 545; Tweedy & Hoese, 2005).

Hands-on learning includes the following: (1) learning by doing; (2) involves the student in a total learning experience, which enhances the student's ability to think critically; (3) does not simply manipulating things, but is engaging in in-depth investigations with objects, ideas, and drawing meaning; and (4) requires students to become active participants instead of passive learners who listen to lectures or watch films (Haury & Rillero, 1994). "An investigative science learning environment helps students not only understand the concepts and gain the knowledge of the experimental evidence supporting the concepts, but may also enrich their epistemological development" (Zou, 2003, p.105).

Students are not to be expected to learn science successfully without doing science. The process of science can only be experienced in the laboratory. A review of several recent researches (Bryant & Marek, 1987; Renner, Abraham & Burnie, 1985) reported that students like a lab-centered science. Students prefer laboratory activities in science courses because those activities help them to remember. They are less confusing and more concrete than other instructional formats. Laboratory makes learning an active experience (Ertepınar & Geban, 1996).

On the other hand, a promising alternative to hands-on experiments is computer-simulated experiments. As a result of technological development, microcomputers have become important tools in science education. The studies on these topics bring up that computer usage makes the learning environment wider and forms some

changes on the quality of education. Computer literacy should be widened at every level of education by providing students with the opportunity to get acquainted with the computer and getting them to use computers in the learning and teaching process.

Ertepınar (1995) stated that, "Several capabilities of computers such as providing individualized instruction, teaching and problem solving and immediate feedback make computers as the instructional devices for developing learning outcomes" (p.21). In a research done by Dobson, Hill and Turner (1995), students received feedback from the computer program more than they received from a laboratory supervisor. Well-designed computer programs have the potential to promote more active, effective and efficient learning, and increased student motivation.

Studies indicated that the use of computers in education in the instructional process caused significantly higher achievement in science courses (e.g., Geban et al., 1992; Ertepınar, Demircioğlu, Geban, & Yavuz, 1998; Rowe & Gregor, 1999; Chang, 2002; Shim, Park, Kim, Park, & Ryu, 2003; Tsai & Chou, 2002; Powell et al., 2003; Law, & Lee, 2004; Gürbüz, 2007). Some researchers showed that physics achievements of students who are taught by CAI were improved (Gale, 1980; Hewson, 1985; Bennett, 1986). But the study by Miller (1986) did not find a significant increase in achievement among students using CAI materials in a community college biology laboratory course. Moreover, Alacapınar (2007) concluded that there is no significant difference between computer assisted education and traditional education in terms of total achievement averages.

When computers are used in the science laboratory, they may offer effective lab activities. Through simulations we can offer learners a laboratory in areas such as the social science and human relations as well as in areas related to the physical sciences, where laboratories have long been taken for granted. Computer simulations seem to be a satisfactory approach that can be used to investigate phenomenon in science laboratories. With the advent of low-cost, real-time computer power, many departments have begun to introduce the microcomputers into their laboratory programs (Feinberg & Knittel, 1985; Hughes, 2002). Because, the real-time microcomputer-based lab experiments - the use of microcomputers for student direct data acquisition, display and analysis - allow students to see and feel the connection between a physical event and its graphical representation (Brasell, 1987; Beichner, 1990).

Many studies have been conducted to investigate the effectiveness of CSE on achievement. Some research indicated that students who participated in CSE had higher science achievement than those in conventional laboratory (Lewis, 1984; Brasell, 1987; Geban et al., 1992; Svec & Anderson, 1995; Redish, Saul, & Steinberg, 1997; Law & Lee, 2004). In another study on achievement in science subjects, however, Miller (1986) and Choi and Gennaro (1987) found no significant differences between computer-simulated experiment group and conventional laboratory group.

Based on implications in the literature, CSE seems to be a satisfactory approach that can be used to promote students' science achievement, and it is important to test

how successful it will be when compared to HOL study. For this reason, the present study was planned to compare the effects of CSE and HOL on students' physics achievement related to displacement and velocity concepts.

The main purpose of this study was to investigate the effectiveness of CSE over HOL study on the understanding of velocity and displacement concepts when both teaching methods were used as a supplement to regular classroom instruction. The second purpose was to identify whether logical thinking ability accounted for a significant portion of variation in achievement related to velocity and displacement concepts.

Method

Research Design

In this study, the pretest/post-test control group design was used. Each treatment (CSE & HOL) was randomly assigned to the experiment group and the control group. Both groups were administered a pretest of Velocity and Displacement Concepts Achievement Test (VDCAT) and a Logical Thinking Ability Test (LTAT) as dependent variables. Then, both groups were post-tested with the same VDCAT.

Sample

The sample of the present study consisted of 61 tenth grade students enrolled in two physics classes of the same teacher in a high school in Turkey. Each of the two supplementary approaches (CSE and HOL) used in this study was randomly assigned to one class. While the experiment group (n= 31) was taught with CSE, the other group (n= 30) continued their laboratory sessions with HOL activities. The students in the sample were coming from a variety of social-economic backgrounds. All of them had computer experience. They had taken a Computer Applications course in ninth grade. To control the students' previous learning in physics related to velocity and displacement concepts and logical thinking ability before the treatment, all of the subjects were administered two pretests: VDCAT and LTAT. The results showed that no significant differences were found between two groups in terms of physics achievement ($t = 0.33$, $p>0.05$) and logical thinking ability ($t = 0.30$, $p>0.05$).

Research Instruments

Velocity and Displacement Concepts Achievement Test (VDCAT). To measure students' velocity and displacement concepts achievement, velocity and displacement concepts achievement test (VDCAT) was developed by the authors of this study. Firstly, it was administered to a pilot study group of students at the eleventh grade in the same school. An 18 item multiple-choice test was developed to assess students' performance on velocity and displacement concepts from an initial set of 25 items after item analysis (item difficulty, discrimination indices, and response to the various distracters). The test was designed from the lecture materials. It was independent of the experimental treatments. It did not contain questions that were covered specifically within either the CSE or the HOL. Content validity of the

test was examined by a group of experts in physics and science education and by the classroom teachers for the appropriateness of the items related to representativeness of high school physics. The alpha reliability coefficient was found to be 0.82. Sample questions are given below.

1. The graph shows the displacement versus time graph of a moving object. The slope of this graph gives_____ .

a) distance b) displacement
c) velocity d) acceleration
e) position

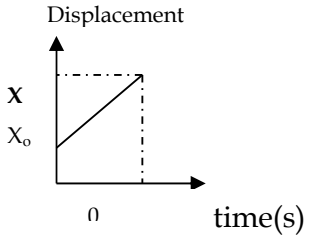


Figure-1

2. The position versus time graph of an object is given in figure-2. Which one(s) of the following statements is/are true?

I. In region I, the object slows down
II. In region II, the object speeds up
III. In region I, the object moves in (-x) direction with constant velocity
III. In region I, the object moves in (+x) direction with constant velocity

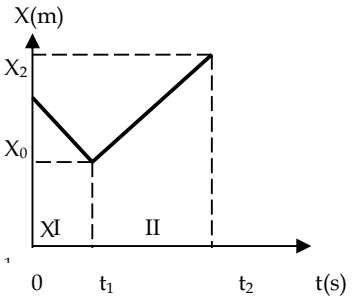


Figure-2

a) IV b) II, IV c) III, IV d) I, IV e) I, III

Logical Thinking Ability Test ***(****LTAT****).*** Tobin and Copie (1981) originally developed this test and it was translated and adapted into Turkish by Geban et al. in 1992. It is a 10-item, paper-and-pencil test, which contains questions related to identifying and controlling variable and to proportional, correlational, probabilistic, and combinational reasoning. The reliability of the test was found to be 0.74. In this test, the students were expected to answer multiple choice questions and select a reason from a list.

Sample questions are given below:

Sample Questions

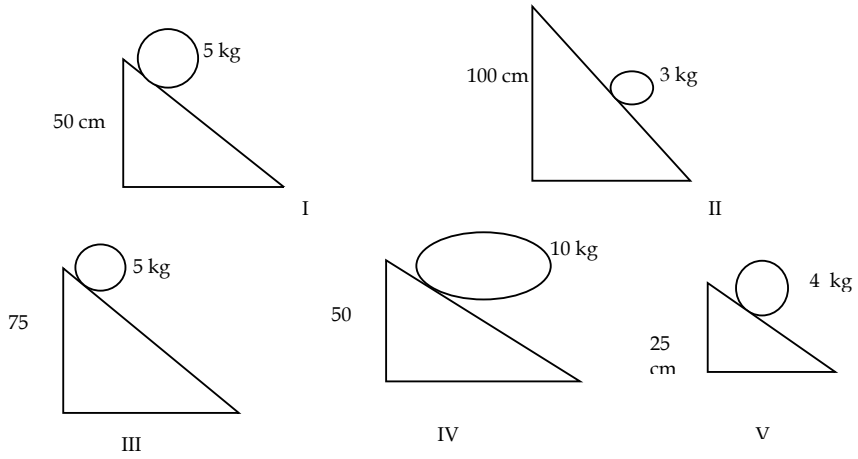
Q1. A housepainter used four boxes of dye to paint six identical rooms. How many rooms can he paint by using eight boxes of dye?

a) 7 rooms b) 8 rooms c) 9 rooms d) 10 rooms e) None

Reasons:

1. The ratio between the number of rooms and the number of dyes is always 3/2.
2. The difference can be reduced by using more dye boxes.
3. The difference between the number of rooms and the number of boxes is two.
4. As the difference was two in four boxes, the difference should be the same as six boxes was used.
5. It is impossible to expect how many boxes can be used.

Q2. In order to find a relation between the distance covered after the inclined plane and the height of the inclined plane, you need to make an experiment. Which inclined planes would you use?



Reasons:

1. The highest and the lowest planes should be compared.
2. All of them should be compared.
3. As the height increases, the weight of the ball decreases.
4. Heights should be the same, but weight should be different.
5. Heights should be different, but weight should be the same.

Procedure

This study was conducted over four weeks during the first semester of the school year. Each teaching approach was randomly assigned to one class. Each instructional approach utilized in this study had two components, which are classroom instruction and hands-on activities and classroom instruction and computer-simulated experiments. The material was introduced by the researchers to the physics teacher before the treatment. Both groups were administered a pretest of Velocity and Displacement Concepts Achievement Test (VDCAT) and a Logical Thinking Ability Test (LTAT).

The details of simulated experiments, hands-on experiments, and the microcomputer courseware are given below.

Simulated Experiments versus Hands-on Experiments. As a result of technological development, microcomputers have become important tools in science education. A change in the technology has provided an opportunity to compare the academic performance of students experiencing simulations with those doing traditional hands on experiments. The hands-on laboratory class did four experiments about position, displacement, velocity, and acceleration in four class hours and the students set up and manipulate their own materials. After taking necessary data, they plotted graphs and calculated the slopes of the graphs. Finally, they answered the questions in given laboratory sheets. In the simulated experiment however, the student used a computer simulation of the isolated air-table experiment about the same topics in which the student typed the variables and observed the changes in the plotted graphs and answered the question asked by the computer program. The simulation program gave immediate feedback to answers, and according to the results, the program directed the student to restudy or change the variables. The schedule followed by the students also contained some questions designed to test understanding of the theoretical implications of the measurement that had been made.

In the teaching process, CSE was presented to students via data-show by the teacher, and then the students had the opportunity to work on the same program. Educational activities in CSE were organized around observing figures, graphs, awarding and providing animation, solving problems rather than reading long, boring scientific knowledge or oral explanation done by the teacher. The same teacher who had experience about CSE and laboratory study taught the classroom instruction, CSE, and hands-on study. The classroom instruction of the groups had three 45-minute sessions per week. The teacher directed strategy represented the customary approach used in class hours. The classroom teacher provided instruction through lectures and discussion in the classroom. The computer-simulated and hands-on activities were instructed after class hours.

The VDCAT and LTAT were given at the beginning of the treatment to determine whether there would be a significant difference between the groups in terms of subject achievement and reasoning ability. A post-test to measure students'

performance related to velocity and displacement was given to students in both groups at the end of the treatment.

The Microcomputer Courseware. Students were exposed to CSE for a total of 4 hours during the 3 weeks. Since the school's computer laboratory had only 15 personal computers, two students worked with one computer in the computer laboratory. Prior to the beginning of the treatment, 30 minutes was devoted to a description of the courseware. In the design of the courseware, terminal objectives were identified for major concepts and a proper sequence of material was established to lead to the students in the realization of the stated objectives. The courseware offers an interface through a series of interaction objects such as: (1) controls that allow students adjust simulation parameters before and during a simulation's execution; and (2) meters, that allow measurement of the relevant physical quantities in digital, graphical or bar form. The program provided text material that included the basic definitions, concepts and formulas and graphic displays when necessary, and experiment related to velocity and displacement. The software also provided immediate feedback, learner control, and interactivity. The students were allowed to go back and forth within each section of the program in a learner control strategy. The simulations were designed to solve problems during the simulated experiments. The feedback from the computer to the student on the correctness of formulation and computation was immediate. After the correct answer, the program provided immeditate feedback verifying that the answer was correct. Whenever the student entered an incorrect response, she/he was asked to try again, or was provided a hint.

The computer program included theory part in the introduction menu. From this menu bar, one could move from one window to another, and study some physical concepts such as displacement, velocity, etc.

The program presented descriptions or representations of one-dimensional motion (position, displacement, position versus time graphs, and velocity versus time graphs). The aim of the program was to enable the students to translate from one representation to another.

In the first part of the program, a help screen about how to use this program was presented, and then the purpose of the experiment was introduced. In each of the screens, students were able to receive help from the help menu.

In the second part of the program, a video about straight-line motion with constant velocity was shown. The video explained the procedure to do the experiment. Here again, the learner could control the video, go back and forth.

In the third part, there was a stationary car on the left of the screen. The students were free to move the car any place on the line. By using start and stop buttons, the student could control the motion of the car. When the student stopped the car, the displacement and the total distance travelled by the car were asked. The students were required to calculate and write the response to the empty places. Then, immediate feedback was provided. After correct answers, the program provided feedback verifying that the answer was correct. After wrong answers, the program indicated that the response was incorrect and provided a second chance to do it. If

the response was again incorrect, the program gave a chance to study the misunderstood or unknown concept.

After studying it, the learner could go back to the experiment. If the last response was still incorrect, the correct answer to the question was given.

In the next part, while the car was moving, dots appeared and each dot showed the position of the car with respect to the initial position of the car. The data were displaced on the table as they were collected as shown in Figure-3. The students were required to find out the velocity of a car after responding some multiple-choice type of questions with three choices. Again immediate feedback was provided. Yet this time, if the response was incorrect only the correct one was informed and an advice was given to the student to study the related concept.

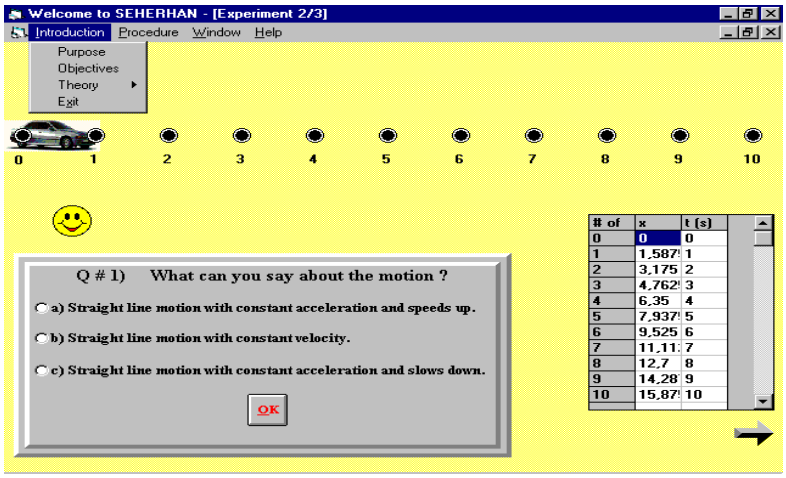


Figure-3. Display example of the program on the screen

In the last part, the student could change the velocity of the car and observe its motion. Then, from the position versus time graph, they would find the velocity of the car same as they selected.

Hands-on Laboratory. The traditional group participated in the same laboratory activities related to the velocity and displacement concepts as those used with the computerized simulations. The laboratory sheet was prepared for the experiment. On the laboratory sheet, concepts and principles to be studied in the experiment were introduced. This group was constructed in a deductive format. In the laboratory sheet there were detailed explanations of the problem, apparatus, and modes of measurement. The students knew what the procedure was. They followed the procedure and collected data. Then they compared the results with known results.

Findings and Results

To examine the effect of the treatment on the dependent variables, and to control the students' previous learning in physics related to velocity and displacement concepts and logical thinking ability before the treatment, all of the subjects were administered two pretests including VDCAT and LTAT. The results showed that no significant differences were found between the two groups in terms of physics achievement ($t = 0.33$, $p>0.05$) and logical thinking ability ($t = 0.30$, $p>0.05$).

The analysis of covariance was used, with treatment as the independent variable, logical thinking ability as the covariance, and post-test scores related to physics achievement as the dependent variable. Statistical results were obtained using the SPSS/PC (Statistical Package for Social Science for Personal Computer). The means and standard deviations of the pre- and post-test results of the test utilized in this study are presented in Table 1.

Table 1

Mean and Standard Deviations of Logical Thinking Ability Test (LTAT), and Pre- and Post-Velocity-Displacement Concepts Achievement Test (VDCAT)

		LTAT		Pre – VDCAT		Post - VDCAT	
Treatment	**Number of Students**	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**	**Mean**	**Standard deviation**
CSE	31	7.00	1.50	3.65	1.17	12.16	2.02
Hands-on	30	7.10	1.90	3.77	1.69	10.00	2.80

Post-test of the test scores revealed that a significant difference was obtained between the mean scores attained by the CSE group and hands-on group with respect to physics achievement. Table 2 shows a summary table of analysis of covariance.

Table 2

Summary Table of ANCOVA

Source	**df**	**SS**	**MS**	**F**	**P**
Covariate (Logical Thinking Ability)	1	74.07	74.07	15.56	0.05
Treatment	1	76.92	76.92	16.16	0.05
Error	58	276.13	4.76		

The CSE group scored significantly higher than the hands-on group with respect to achievement in physics related to velocity and displacement concepts. On the other hand, logical-thinking ability accounted for a significant portion of variance in physics achievement.

The results of the present study are consistent with these studies showing that computerized activities in teaching and learning science have been found to enhance understanding of concepts (e.g. Hewson, 1985; Brasell, 1987; Mokros & Tinker, 1987; Geban et al., 1992; Svec & Anderson, 1995; Redish et al., 1997; Jimoyiannis & Komis, 2001; Hughes, 2002; Chang, 2002; Shim et al., 2003; Law, & Lee, 2004). The CSE was as effective as hands-on laboratory experiences. Hence, it is possible to use a CSE in the teaching of some physics concepts such as displacement and velocity.

Also, the results of this study are complementary to the results obtained by Brasell (1987), Mokros & Tinker (1987), Hewson (1985), Svec & Anderson (1995), and Redish et. al. (1997). Brasell (1987) revealed that a microcomputer based laboratory method is sufficient for high school students to improve their comprehension of distance, and velocity graph when compared with a traditional laboratory method.

Conclusions and Recommendations

This study investigated the relative effectiveness of the CSE approach and hands-on approach to supplement regular classroom instruction in velocity-displacement concepts. It indicated that the students exposed to the CSE performed significantly better than those exposed to the hands-on activities.

Because the computer program provided learner control, and lessons were designed in such a way that it enabled the learners to re-examine each part of the lesson, the students who used CSE might have understood the concepts and problems better.

The attributes of the computer program such as learner control or response checking and immediate feedback may have developed achievement better (Shim et al., 2003). When compared with the hands-on activities, the students solved more problems related to the experiments and re-examined each part of the lesson. Because the learner-controlled strategy was employed by allowing students to go back and forth within the program, they were allowed to investigate any part of the experiment that was not understood. The students were motivated to control their own learning. The findings of the present study concur with some studies in which learner control in computerized programs improve student performance (Hannafin & Sullivan, 1995; Shim et al., 2003).

When simulations are used in education, learners must be evaluated immediately after their response to the program (Rieber, 1996; Huppert et al., 2002). The program required the students to be active by encouraging them to answer each question. Feedback reflects the quality of the instruction and can affect students' achievement. The students who used CSE got immediate feedback on their responses. Following their responses to a question, immediate feedback was provided. On the other hand,

generally students in HOL have no immediate or continues feedback. The immediate correction of erroneous responses may be the most important function of feedback, because erroneous information is likely to be preserved and interfere with future learning unless corrected. Feedback in the simulated experiments was in a linear sequence, asking the students to give an answer for each step. In this manner, the students could comprehend the concepts and their interrelationships in the problems more accurately. Appropriate questions were asked in the program. More meaningful learning is probable if students are asked to respond to succession of more appropriate questions, and to explain relationships. Moreover, Evans & Gibbons (2007) stated that "interactive systems facilitate deep learning by actively engaging the learner in the learning process" (p. 1147).

It is not necessary to discover everything in the laboratory. Some laboratory investigations may involve excessive work in setting up equipment and in gathering data. Moreover, another advantage of computer-simulated experiments was that the students dealt with data in a controlled setting with respect to the traditional HOL approach (Huppert et al., 2002). The data obtained under the HOL conditions were not fully reliable because of uncontrolled variables or measurement errors.

Computer-simulated laboratory experiments, together with classroom instruction, appear to be a practical strategy to implementing a physics program. They can be organized such that the application of physics concepts is stressed. This approach will improve understanding of physics subject matter. Well-designed computer simulations can be used for the teaching of some concepts without extra needed effort and time from the teacher to prepare materials. It appears that using CSE in science education can be effective and cost effective as well.

The CSE can be used for the teaching of some concepts, velocity and displacement for example, without extra needed effort and time from the teacher to prepare materials. It is also possible that a computer program could be used to replace more expensive instrumentations or materials in many traditional hands-on laboratory experiences if schools already have microcomputers.

Another implication of this study is that when the CSE is used, experiments can be done in a short period of time compared to the hands-on laboratory experiences.

There is a continuous need for further research seeking to establish the relationship between the computer simulated experiments (CSE) approach and different teaching approaches on understanding of physics concepts. Real-time graphing of data appears to be a key feature for both cognition and motivation. As Brasell (1987) indicated, "It allows students to process information about a physical event and its graph simultaneously rather than serially" (p.392). Focusing further research on this feature of CAI could provide some valuable insights into information processing and motivation. Further research is also needed to test the effectiveness of different modes of the CAI on the students' understanding of physics concepts (e.g., CSE versus Tutorial, CSE versus Drill-practice, etc.).

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Bilgisayar Benzetimli Deneylerin Lise Öğrencilerinin Yerdeğiştirme ve Hız Kavramlarını Anlamadaki Etkisi

(Özet)

Problem Durumu: Yapılan araştırmalar, lise öğrencilerinin temel fizik kavramlarını ve teorilerini anlamada ve uygulamada sıkıntılar yaşadıklarını göstermektedir. Buna bağlı olarak, bazı araştırmalarda öğrencilerin derslere belirli fizik kavramlarını öğrenmelerini engelleyecek naif yargılarla gelmekte olduğunu göstermiştir. Bu tür yanlış kavramalar sanıldığından daha geniş kapsamlıdır ve sınıf performansı üzerinde etkili olmaktadır. Aslında, öğrenciler önemli fizik kavramlarını tam anlamıyla öğrenmeden sınıflarını geçmektedirler. Öğrencilerin matematik denklemlerini kullanarak fizik problemlerini çözebilmeleri, fizik kavramlarını tam anlamıyla anlamış olduklarını göstermemektedir. Fizik derslerinde diğer disiplinlere göre ana konular arasındaki ilişki sayıca daha fazladır. Öğrenilmesi gereken karmaşık konu sayısı oldukça fazladır ve bu konuların öğrenilmesinde yalnız tanımlarının bilinmesi yeterli değildir. Ayrıca genel özellikleri de anlaşılmalıdır.

Laboratuar çalışması öğrencilerin fizik dersindeki başarısını artırmakta önemli bir rol oynamaktadır. Laboratuar çalışması; 1) yaparak öğrenmedir, 2) öğrencinin kritik düşünme yeteneğini geliştirir, 3) öğrencilerin aktif olmasını sağlayan bir öğrenmedir. Öğrencilerin bilim yapmadan bilimi öğrenmeleri beklenemez ve bu sadece laboratuar da gerçekleşir. Yapılan bazı araştırmalar, öğrencilerin laboratuar çalışmasını sevdiklerini göstermektedir.

Bilgisayarın eğitimde kullanılması, öğrenme alanını genişletmekte ve eğitim kalitesini olumlu yönde etkilemektedir. Bundan dolayı, her düzeyde öğrencinin bilgisayar okuryazarlığı becerilerini geliştirmesi sağlanarak onların eğitim ve öğretim sürecinde bilgisayarı kullanmaları teşvik edilmelidir. Çünkü bilgisayarların farklı eğitim araçlarını aynı anda kullanma ve kontrol etme özellikleri vardır. Bilgisayar Destekli Eğitimin çeşitli tanımları verilmektedir. Bu tanımlardan ilkine göre Bilgisayar Destekli Eğitim bilgisayar teknolojisinin öğretim sürecindeki uygulamalarının her biridir. Bu uygulamalar bilgi sunmak, özel öğretmenlik yapmak, bir becerinin gelişmesine katkıda bulunmak, benzeşim gerçekleştirmek ve sorun çözücü veri sağlamak olabilir. Başka bir tanıma göre ise, Bilgisayar Destekli Eğitim, öğrencilerinin bilgisayar sistemine programlanmış olan dersleri etkileşimde programlanmış olan dersleri etkileşimde bulunarak, doğrudan alabilmeleridir. BDE de öğrenciler eğitsel materyalleri sunan ve gösteren bilgisayar ile direk temas içindedir. Bu çalışmanın asıl amacı, fizik dersi ile birlikte verilen bilgisayar benzetişimli deneylerin yerdeğiştirme ve hız kavramlarını anlamadaki etkisini yine dersle birlikte verilen geleneksel laboratuar çalışması ile

karşılaştırmaktır. Benzeşim bazı gerçek yaşam olay ve uygulamalarının soyutlanması ve basitleştirilmesidir. Benzeşimde katılımcılar diğer kişi ve/veya taklit edilmiş ortam ile devamlı olarak bir ilişki içindedir. Birçok benzeşimin amacı, sıralı olay ve bilgileri anlatabilmektir. Öğrenciyi bir sonraki basamağa atlatabilmek için öğrencinin vereceği cevaplara göre, bilgisayar ya bilgi sunacak ya da geri iletimde bulunacaktır. Her bir basamak yeni bir bilgi sunacaktır. Bu şekilde hedeflenen amaca ulaşılacaktır.

Öğrencilerin klasik ders anlatım metotları ile hız ve ivme gibi konuları kavramaları her zaman mümkün olmayabilir. Laboratuar çalışması, bilgisayar destekli eğitim gibi farklı metotların kullanılması uygun olabilir. Yapılan araştırmalara göre, Bilgisayar Benzetimli Deneylerin (BBD) öğrencilerin başarısını yükseltmek için uygun bir metot olduğu düşünülmektedir. Dolayısı ile BBD'nin etkililiği Geleneksel Laboratuar (GL) çalışmaları ile karşılaştırarak araştırılmalıdır.

Araştırmanın Amacı: Bu çalışmanın sorunlu amacı fizik dersi ile birlikte verilen bilgisayar benzetimli deneylerin yerdeğiştirme ve hız kavramlarını anlamadaki etkisini yine dersle birlikte verilen geleneksel laboratuar çalışması ile karşılaştırmaktır. Çalışmanın diğer amacı ise uygulanan öğretim yöntemi, mantıksal düşünme yeteneği ve aralarındaki etkileşimin birlikte hız ve yer değiştirme konularında öğrenci başarısına anlamlı bir katkıda bulunup bulunmadığını saptamaktır.

Araştırmanın Yöntemi: Çalışmada, ön-test-son-test kontrol gruplu deneme modeli kullanılmıştır. Her bir yöntem (BBD ve GL) kontrol ve deney gruplarına rastgele atanmıştır. Öğrencilerin Yerdeğiştirme ve Hız kavramlarındaki bilgilerini ölçmek için Yerdeğiştirme ve Hız Konuları Başarı Testi (YHKBT) öntest ve sontest olarak uygulanmıştır. Hazırlanan bu test Bloom'un ilk dört taxonomisini (bilgi, kavrama, uygulama ve analiz etme) içermektedir. Test hazırlanırken ders notları ve bazı fizik ders kitaplarından yararlanılmıştır. İlk aşamada 25 adet beş seçenekli test olarak hazırlanan test uzmanlar, eğitim bilimciler ve ders öğretmeni tarafından incelenmiştir. Soruların zorluk seviyesi ve ayırt ediciliğinin ölçülmesi için 75 kişilik 11. Sınıf öğrencilerine YHKBT uygulanmıştır. Soru analizi sonucunda 18 soru seçilmiştir ve soruların aynı değişkeni ölçtüğüne dair güvenilirlik katsayısı (Cronbach alfa) 0.82 olarak hesaplanmıştır. Öğrencilerin muhakeme yeteneklerini kontrol etmek için Mantıklı Düşünme Testi (MDT) uygulama başlamadan önce uygulanmıştır. MDT değişkenleri anlayabilme ve hakim olabilme, orantı kurarak korelasyon sağlayabilme, ihtimalleri değerlendirerek mantık yürütmeye dayalı sorular içermektedir. Bu çalışmanın evrenini onuncu sınıf Fizik dersini alan öğrenciler, örneklemini ise aynı öğretmenin ders verdiği iki fizik sınıfındaki 61 onuncu sınıf öğrencisi oluşturmaktadır. Verileri analiz etmek için t-test ve çoklu regresyon metotları kullanılmıştır.

Bilgisayar Benzetimli Deney Programı: Bilgisayar Benzetimli Deney Programı Microsoft Visual Basic programı kullanılarak Bilgisayar Destekli Eğitim ve Bilgisayar Benzetimli Deney Programlarından yararlanılarak geliştirilmiştir. İstenilen amaçlara ulaşabilmek için konular belirli bir sıralamada ve kullanıcıyı aktif tutabilecek şekilde hazırlanmıştır. Öğrencinin her an aktif olduğu, gerekli zamanlarda bilgilerin sunulduğu ve öğrenciye geri dönüşümlerin sıklıkla yapıldığı bu program MS-Windows uygulamalarını kullanabilen herkes tarafından oldukça kolay bir şekilde kullanılabilir.

Laboratuar Deney Kağıdı: Kontrol grubu öğrencileri için konu özetini, deney amacını, kullanılacak malzemeleri ve deney sıralamasını içeren laboratuar deney kâğıdı hazırlanmıştır. Deney basamakları yapıldıkça veriler elde edilmekte ve sonuçları bilinen değerlerle kıyaslanmaktadır.

Araştırmanın Bulguları: Ön-test sonuçlarına göre yerdeğiştirme ve hız kavramlarını öğrenme ve mantıksal düşünme yeteneği açısından iki grup arasında anlamlı bir fark gözlenmemiştir. Son-test sonuçlarına göre, bilgisayar benzetimli deneylerden faydalanan öğrenci grubunun hız ve yerdeğiştirme kavramlarını anlamada istatistiksel olarak daha iyi olduklarını ortaya koymuştur. BBD grubunun KL grubuna göre daha yüksek bir fizik başarı ortalamasına sahip olduğu tespit edilmiştir. Diğer yandan uygulanan öğretim yöntemi, mantıksal düşünme yeteneği ve aralarındaki etkileşimin birlikte hız ve yer değiştirme konularındaki başarıya anlamlı bir katkıda bulunduğu saptanmıştır. Öğretim yöntemi ve mantıksal düşünme yeteneğinin başarıya katkısı ayrı anlamlıyken, aralarındaki etkileşimin tek başına başarıya katkısı anlamlı çıkmamıştır.

Araştırmanın Sonuçları ve Öneriler: Sınıf içi ders anlatımları ile beraber Bilgisayar Benzetimli Deneylerin kullanılması fizik dersi programının uygulamasında pratiklik kazandırmıştır. Bu yaklaşım ile derslerin işlenmesi fizik konularının anlaşılmasını kolaylaştırmıştır. İyi tasarlanmış bilgisayar simülasyonları kullanarak yerdeğiştirme, hız, ivme gibi konular, materyal hazırlamak için fazla enerji ve zaman harcamadan öğretilebilir. (1) Uygulama, (2) mantıksal düşünme yeteneği ve (3) mantıksal düşünme yeteneği ile uygulama arasındaki ilişki istatiksel olarak yerdeğiştirme ve hız kavramlarındaki başarıdaki farklılıklara katkı sağlamıştır. Uygulama ve mantıksal düşünme yeteneğinin her ikisi de yerdeğiştirme ve hız kavramlarını algılamadaki başarıyı tahmin edici kuvvetli faktörlerdir.

Bu çalışmaya ek olarak aşağıda belirtilen konular üzerinde çalışmalar yapılabilir: Bilgisayar benzetimli deney uygulaması ile başka öğretme metotları arasındaki ilişkinin incelenmesine ihtiyaç vardır. Bilgisayar oyunlarının ve problem çözmenin lise öğrencilerinin fizik konularını algılamalarına olan etkisini inceleyen araştırmalar yapılabilir. Diğer bilgisayar destekli eğitim metotlarının fizik konularını anlamaya etkisini araştıran çalışmalar yapılabilir. Ayrıca, öğrencinin sosyo-ekonomik

durumu, kişiliği, ilgi alanlarının bilgisayar destekli eğitim ile fizik başarısı arasındaki ilişkisi incelenebilir.

Anahtar Sözcükler: Bilgisayar Benzetimli Deneyler, Bilgisayar Destekli Eğitim, Mantıksal Düşünme Yeteneği, Fizik Eğitimi

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