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## Connecting Attitudes Toward Teaching and Pedagogical Formation Courses: A Study of Turkish Pre-service Teachers

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*Abstract: This quantitative study aimed to examine (1) the pre-service teachers' attitudes toward the teaching profession and (2) whether their attitudes are impacted by the pedagogical formation courses that are part of teacher preparation. The findings of the pre-test showed that participants had positive attitudes toward teaching as a profession. However, the examination of the difference between the pre-service teachers' attitudes towards teaching profession based on before and after taking pedagogical formation courses revealed no statistically significant differences in the participants' responses. The results of this analysis contribute to better understanding of Turkish teacher candidates' attitudes toward the teaching profession and call for further examination of this topic using a national sample to guide country-wide educational policy changes.*

### Introduction

As a central theme in the discussions surrounding increasing educational accountability and international efforts to improve schooling, teacher preparation should be reformed to better fit the demands of modern-day schools (AACTE, 2010). Undoubtedly, teaching is a “multidimensional process that requires deep knowledge and understanding in a wide range of areas and the ability to synthesize, integrate, and apply this knowledge in different situations, under varying conditions, and with a wide diversity of groups and individuals” (Hollins, 2011, p. 395). Therefore, teacher preparation is a complex task that requires careful planning and skilful delivery. In practice, however, this is not always the case. If teacher education is not aligned with educational policies, teacher candidates enter the profession inadequately prepared (Seferoglu, 2006). However, when teacher preparation accepts accountability requirements without questioning the underlying assumptions, the consequences may also be harmful (Feuerstein, 2011). In addition to the changes in the external demands, it is important to examine and address pre-service teacher attitudes to further strengthen teacher preparation.

Preparing effective, motivated, and dedicated teachers is important to ensure that the next generation of students succeeds in their academic efforts because “teacher quality is assumed to be an essential ingredient in students' achievement and other school outcomes” (Cochran-Smith & Power, 2010, p. 7). Therefore, over the last decades, different countries scrutinized and reformed teacher preparation to improve the quality of future educators. Even through most of these initiatives are country-specific, the general trends emerge when reviewing teacher preparation literature from different countries:

1. Teacher preparation is connected to teacher quality (Cochran-Smith & Power, 2010; Karamustafaoglu, 2009);
2. Alternative teacher preparation is becoming more widespread (Cochran-Smith & Power, 2010; Seferoglu, 2004);
3. The importance of preparing teachers to teach different learners in different contexts (Cochran-Smith & Power, 2010; Kizilaslan, 2012);
4. Traditional teacher education is often inadequate in preparing effective teachers (Peske & Haycock, 2006);
5. Pre-service teacher learning is often not aligned with the schools' needs (Adamson, 2012; Seferoglu, 2006); and,
6. Linking teacher preparation to student achievement, as reflected in the accountability movements (Cochran-Smith & Power, 2010; Feuerstein, 2011; Noell & Burns, 2009).

To a smaller or greater extent, these characteristics are evident in different educational systems, suggesting educational globalisation and growing impact of Western educational model on other schooling contexts.

### **Pre-service Teacher Education in Turkey**

Traditional teacher preparation in Turkey, conducted at the university level, was reorganised in 1997 (Yüksel, 2012). To obtain a primary school teaching license, pre-service teachers should complete four years of undergraduate work; to teach at the secondary level, a diploma from a graduate five-year program is required (Tok, 2011). The curricular updates from 2007 did not impact greatly the elementary school bachelor programs. However, considerable changes occurred in the secondary school fields—specifically, the duration was extended by offering an integrated model and consecutive model. The integrated model is taking place over the course of five years (students of the educational studies departments) while the consecutive model's duration is 5.5 years and it is offered to the students with a bachelor's degree from the science and literature departments (4 years) who are then required to take three additional semesters (1.5 year) to obtain a graduate teaching certificate (YOK, 1998). The regulatory change of 2010 prompted the closure of non-thesis graduate programs in favour of pedagogical formation programs (Dündar&Karaca, 2013). The common path for pre-service teachers is to obtain a Bachelor's degree and then complete a pedagogical formation program. A pedagogical formation program lasts two semesters (each semester lasts 14 weeks) and includes 10 courses with 21 credits in theory and 10 credits in practical education courses (MEB, 2011). The courses typically include the following options (or their equivalents): Introduction to educational sciences, Developmental psychology, Learning theories and approaches, Curriculum development and instruction, Measurement and evaluation, Classroom management, Instructional technologies, Special education, Psychological counselling and guidance, and Teaching practice.

In Turkey, teacher preparation has gone through multiple changes and reforms over the last century (Kildan et al., 2013). Seferoglu (2004, p. 153) summarized:

A chronological overview of teacher education in Turkey shows that there have always been difficulties in the system from various aspects. One of the most important problems in the system has been a lack of successful coordination and collaboration among parties involved in teacher education and hiring. There has almost always been a gap between teacher supply and demand in several subject areas in Turkey since the early years of the Turkish Republic.

This summary indicates that historically ingrained difficulties pertaining to how teacher preparation impacted and continue to impact educating teacher candidates. Review of research on the topic supports this assertion.

The review of the literature on teacher preparation in Turkey found multiple areas of concern voiced by researchers in the recent years. A comprehensive research review (Cakiroglu & Cakiroglu, 2003) emphasized two major areas of concern in Turkish teacher education:

1. External issues affecting teacher preparation and teacher education policies (e.g., population growth; political issues; low salary and status); and
2. Issues stemming from teacher preparation programs (e.g., curricula concerns; relevancy; adoption and integration of the Western countries' practices and approaches).

These findings (although somewhat dated) are supported by the results of recent published studies. A study examining Turkish pre-service teachers' perspectives on their preparation concluded that principal preparation was insufficient—participants expressed an overall consent that their university preparation did not provide them with adequate curricular and content knowledge base necessary to succeed in teaching (Kıldan et al., 2013). Moreover, teacher candidates reported valuing collaborative activities over lecture-type classes that dominate teacher preparation (Gursoy & Karatepe, 2006) and emphasized the importance of reflection on pre-service teachers' pedagogical practices (Sanal-Erginel, 2006). Current efforts to embrace community service learning (a practice originating from the USA) as part of teacher preparation are not always effective (Kucukoglu, 2012). Thus, the areas of concern expressed over a decade ago (Cakiroglu & Cakiroglu, 2003) still hold true nowadays.

In addition to the general concerns over teacher preparation, researchers pointed out issues pertaining to specific areas of teacher preparation such as preparing students to teach different content areas; training teachers to work in different school contexts; and offering alternative teacher certification programs. For example, students of a pre-service English teacher preparation program noted the disconnect between course contents and practical applications of what they were learning (Seferoglu, 2006). Further, inadequate preparation of teachers to work in rural areas reflects the lack of research in this area and is frequently coupled with the teacher candidates' lack of understanding of working in a rural context (Kizilaslan, 2012). Finally, there are alternative certification routes offered for aspiring teachers to minimize teacher shortages (e.g., expedited programs; appointing persons with required but without teacher certification). Notably, these alternatives are criticized by students of the regular four-year preparation programs and described as inferior and incompetent (Seferoglu, 2004). The main reason behind these critiques is insufficient knowledge, both subject matter and pedagogical, that is necessary to be an effective teacher.

## **Literature Review**

### **Pedagogical Content Knowledge**

Overall, it is difficult to describe an optimal model of teacher preparation because it is hard to outline what makes a teacher effective (Gates Foundation, 2013). However, it is often linked to teacher knowledge, which foundation is laid during teacher preparation program and that is further expanded through the experience and continuous professional learning. It is

understood that “teacher knowledge focuses on enabling teachers to fulfil their central role: teaching subject matter domains using appropriate pedagogical principles and skills” (Ben-Peretz, 2011, p. 8). Thus, in a traditional sense, teacher knowledge is a combination of subject matter and pedagogical knowledge. However, nowadays this concept is expanding to include multicultural education and global issues (Ben-Peretz, 2011). Therefore, university faculties should take this consideration into account when designing and delivering teacher preparation program curriculum.

Pedagogical content knowledge (PCK) is not a new concept. It was introduced by Shulman (1986) to describe a type of teacher knowledge that bridged content and pedagogy. According to Shulman, PCK combines familiarity with instructional strategies with an understanding of how students approach specific concepts and topics of the taught material (i.e., common misconceptions and preconceptions). This knowledge allows teachers to make decisions and take appropriate actions depending on a situation at hand through “blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented and adapted to the diverse interests and abilities of learners, and presented for instruction” (Shulman, 1986, p. 8). Despite some criticism, some researchers (e.g., Hodgen, 2011) have adapted PCK to different teaching approaches and varying contexts. Further, the original conceptualization of PCK was expanded to include other aspects of instructional knowledge and content knowledge and to account for contextual and student characteristics. In addition, it was adapted to reflect the particularities of different subject areas (e.g., Depaepe, Verschaffel, & Kelchtermans, 2013).

In spite of criticisms and different interpretations of PCK, “the concept remains very influential in research on teaching and teacher education” (Depaepe et al., 2013, p. 14). Therefore, recent studies aimed to measure teachers’ PCK through pre-service teacher observations (e.g., Wong & Lai, 2006), combining multiple-choice tests with individual interviews (e.g., Usak, Ozden, & Eilks, 2011), and specially designed instruments focused on specific aspects of pre-service teaching assignments (e.g., Teacher Education Lesson Plan Survey by Prescott, Bausch, & Bruder, 2013). In research on mathematics education (that produced numerous PCK studies), PCK (1) combines pedagogical and content knowledge; (2) relates to the knowledge necessary to teaching practices; (3) is subject-specific; and (4) includes a thorough understanding of the content knowledge (Depaepe et al., 2013). Although there are differences based on the subject area, PCK is based on the same grounding principles.

A qualitative case study of pre-service science teachers’ PCK and subject matter knowledge (Usak et al., 2011) reported that study participants had inadequate, even naïve PCK and science knowledge and suggested assessing pre-service teachers’ pre-knowledge and pre-conceptions at the beginning of their teacher education programs. Another recent qualitative study from Turkey (Atay, Kasioglu, & Kurt, 2010) on the PCK of pre-service English teachers emphasized the significance of this concept to teacher preparation. Given these reports about insufficient pre-service teachers’ PCK, Toy and Ok (2012) examined incorporation of critical thinking course into teacher preparation program. However, the difference between students who took this course and those following the traditional set of courses was not statistically significant. Overall, the common theme in the reviewed literature on the topic is inadequate level of Turkish pre-service teachers’ PCK, suggesting the need for further research and programs’ modifications.

### **Pre-service Teachers' Attitudes Toward Teaching**

Research suggests that pre-service teachers' reflective disposition toward teaching contributes to their effective teaching as assessed by their supervisors (Giovannelli, 2003). The connection of disposition to effective teaching is thus examined both on the pre-service and in-service levels. For example, Schussler, Stooksberry, and Bercaw (2010) analysed teacher candidates' journals and reported three major disposition groups: intellectual, cultural, and moral, suggesting that teacher preparation programs pay closer attention to developing pre-service teachers' understanding of their dispositions. Teacher preparation programs aim to not only equip pre-service teachers with the necessary skills and knowledge essential to becoming an effective teacher (Darling-Hammond & Bransford, 2005), but also to develop their positive attitudes toward teaching (Jain, 2007). In practice, however, many teacher preparation programs worldwide fail to achieve both of these aims.

Numerous studies have examined the attitudes of Turkish pre-service teachers toward the teaching profession (e.g., Boz, 2008; Tok, 2011; Yildirim, 2012). However, the reported results are often contradictory. A longitudinal study of changes of pre-service primary teachers in Turkey (Tok, 2011) found significant changes in the attitudes toward teaching in the beginning and at the end of teacher preparation program. Specifically, observed changes were more positive at the first-year student level, suggesting the need to redesign courses and mentorship. Similarly, Balan, Bujor, and Serdenciu (2012) found that the attitudes toward a teaching career are significantly higher at the beginning of the preparation program than at the end. However, a study of Turkish pre-service teachers' concerns about teaching (Boz, 2008) concluded that fifth-year students had lower teaching concerns when compared to the students in the earlier years of the program. The comparison of pre-service teachers' attitudes based on the demographic characteristics (e.g., age, gender, content area, type of high school program) found statistically significant differences only based on the gender—female participants expressed more positive attitudes (Yildirim, 2012). However, a study by Balan et al. (2012) reported that male students had significantly higher attitudes toward teaching, suggesting low agreement on this issue among different samples and research sites. Such differing results necessitate further analysis and investigation.

In summary, literature suggests that it is important to study beliefs and attitudes of pre-service teachers to improve teacher preparation and professional learning (Alptekin & Tatar, 2011). Because the background of teachers' PCK is formed during their years in teacher preparation programs (Prescott et al., 2013), it is necessary to examine their attitudes toward teaching as a profession. Given the inconsistent results of previous studies from Turkey, it is important to further examine this topic. This study intended to contribute to the literature on teacher preparation by examining the connection between Turkish teacher candidates' attitudes toward teaching and pedagogical formation courses they took as part of their teacher preparation.

### **Study Purpose**

This study aimed to examine (1) pre-service teachers' attitudes toward the teaching profession and (2) whether attitudes are impacted by the pedagogical formation courses that are part of teacher preparation. Three research questions guided this study:

1. What are the pre-service teachers' attitudes towards teaching profession? Do these attitudes differ depending on demographical variables?
2. Is there a relationship between pre-service teachers' grade point average and their attitudes?

3. Do the pedagogical formation courses that pre-service teachers enrol in influence their attitudes towards teaching profession?

The study hypothesized that pre-service teachers' attitudes would be favourable at the beginning of the program. The second hypothesis was that pre-service teachers' attitudes would be more positive after they took pedagogical formation courses.

## Methodology

### Sample

The research sample consisted of the students (pre-service teachers) who registered for the first time to the Pedagogical Content Knowledge Program (PCKP) offered by the Faculty of Arts and Sciences at Celal Bayar University (Turkey) as an add-on certification for recent graduates of the Bachelor programs in the faculty, obligatory for pre-service teachers to teach in Turkish schools. The program was offered during 2012-2013 academic year. All of the students registered to the PCKP were given a questionnaire. Out of 200 questionnaires that were administered, 175 were returned and were suitable for analysis. The return rate of the questionnaires was high (88%); the fact, that may be partly attributable to the fact that the researchers personally delivered the questionnaires and explained study details. The questionnaires used for pretest were delivered to the pre-service teachers at the beginning of the fall semester (2012), during the first and second weeks of the program.

The PCKP lasted one academic year: the fall and spring semesters (October, 2012-May, 2013). However, the key pedagogical classes were offered in the first semester of the program. Specifically, the pre-service teachers took six courses in the fall semester:

- developmental psychology;
- curriculum development and instruction;
- learning theories and approaches;
- classroom management;
- fundamentals of educational sciences; and,
- educational measurement and evaluation.

Each course was allotted three hours of class time per week. This study aimed to examine whether pedagogical formation courses that pre-service teachers take influence their attitudes towards teaching profession. Therefore, this study compared student responses at the beginning and end of the fall semester. The pretest data were collected in October 2012 and the posttest was administered during the final exams of the first semester (January, 2013).

The sample resembled the usual population of university teacher preparation courses. There were more female (75.4%) than male participants (24.6%), reflecting the trend in public education in Turkey—there are more female than male teachers. Participants' age was also representative of teacher preparation programs' students: 67.4% were between 24 and 25 years old; 24% were between 26 and 29; and the remaining 8.6% were over 30 years old. Over half of the participants were unemployed at the time of the study (52.6%) and over 73% declared love for the teaching profession as a main reason for their participation in the program (see Table 1 for participants' demographic details).

Variable	Option	N	%
<b>Gender</b>	1. Woman	132	7.4
	2. Man	43	24.6
<b>Age</b>	1. Between 22-25	118	67.4
	2. Between 26-29	42	24
	3. 30 or above	15	8.6
<b>Field of Bachelor Education</b>	1. Natural and applied sciences	102	58.3
	2. Social sciences	73	41.7
<b>Type of Undergraduate Education</b>	1. Normal	106	60.6
	2. Evening education	69	39.4
<b>Cumulative Grade Point Average (Bachelor)</b>	1. Between 60-69	33	18.9
	2. Between 70-79	101	57.7
	3. 80 or above	41	23.4
<b>Marital Status</b>	1. Married	38	21.7
	2. Single	137	78.3
<b>Reason for participating in a formation program</b>	1. Love for teaching profession	129	73.7
	2. Facilities for employment	39	22.3
	3. Family and social pressure	7	4
<b>Having a job providing regular income</b>	1. No	73	41.7
	2. Yes	102	58.3
<b>Field of work</b>	1. Public	9	5.1
	2. Private education sector	65	37.1
	3. Except private education	9	5.1
	4. Unemployed	92	52.6
<b>Father's highest education</b>	1. Elementary or below	80	45.7
	2. Lower secondary	29	16.6
	3. Upper secondary	44	25.1
	4. University	22	12.6
<b>Mother's highest education</b>	1. Illiterate	13	7.4
	2. Elementary	105	60
	3. Lower secondary	20	11.4
	4. Upper secondary	28	16
	5. University	9	5.1

**Table 1. Participant demographics**

### Data Collection Instrument

To measure the attitudes towards the teaching profession, “The Attitude Scale for Teaching Profession” developed by İlğan, Sevinç, and Ari (2013) was used. This instrument was selected because it was developed, validated, and used successfully in the context of Turkish educational system. The instrument was a five point Likert-scale with the responses (1) Strongly disagree; (2) Disagree; (3) Neutral; (4) Agree; and (5) Strongly agree. The scale was unidimensional and had 17 statements including two negative statements. İlğan’s et al. (2013) Exploratory Factor Analysis (EFA) study revealed that the scale explained 58.83% of total variance; internal consistency coefficient alpha was 0.95. Factor loadings ranged from 0.598 to 0.89; item-total correlations ranged from 0.551 to 0.861. According to the EFA results, the KMO was 0.952 and the Barlett test (0.000) was statistically significant. Thus, the scale had high validity and reliability. This instrument was used for pretest and posttest.

### Data Analysis

The data were analysed using the SPSS package; different descriptive and inferential statistics were calculated. First, percentage and frequencies were used to analyse demographic variables. Second, an independent sample t-test was used to compare the attitudes towards the teaching profession based on gender, age, field of study, type of education, marital status, having a job providing regular income, and the reason for participating in the program. Third, ANOVA was used for comparisons based on the cumulative grade point average (GPA) and the fathers' educational status; the Kruskal Wallis test was used for comparisons based on the mothers' educational status due to considerable differences between the compared groups in terms of quantity. Fourth, the Pearson correlation was used to examine the relationship between the attitudes towards the teaching profession and the cumulative GPA of bachelor education. Finally, a paired samples t-test was used to investigate whether participation in a pedagogical formation program alters the pre-service teachers' attitudes toward the teaching profession. Because the 2<sup>nd</sup> and the 8<sup>th</sup> statements were negative attitudes, they were scored in reverse.

### Findings

The findings are reported in the following way: first, the descriptive statistics summarizing the participants' responses in the pre-test is presented. Second, the comparison of teacher candidates' attitudes toward teaching based on the demographic variables is offered. Third, the findings of the comparison of pre-service teacher attitudes in the beginning and at the end of taking pedagogical formation courses are provided.

#### Initial Attitudes Toward the Teaching Profession

Descriptive statistics showing the pre-service teachers' attitudes towards the teaching profession (see Table 2) reflects participants' responses from the pre-test, collected at the beginning of the PCKP. Overall, the pre-service teachers' attitudes were at a high level—participants considered teaching a viable profession they wanted to pursue (M= 4.25). However, the statements of the highest agreement were: (1) "I might consider working as a teacher only if I do not have another choice" (M= 1.39 / 4.61\*); and (2) "I would proudly name my profession, when I become a teacher" (M= 4.55). The statements of the least agreement were: (1) "I would like to be a teacher even under disadvantageous conditions" (M= 3.47) and (2) "I think I would not choose teaching as a profession if I have a better alternative" (M= 2.18 / 3.82). Overall, given that this program was offered after the participants completed a bachelor's degree in teacher preparation, the attitudes expressed by the participants reflected the confidence they gained from four years of undergraduate education.

Statements	N	M	SD
1. Teaching is the ideal profession for me.	175	4.2800	0.82099
2. I might consider working as a teacher only if I do not have another choice.*	175	1.39** / 4.6114***	0.82203
3. I would do teaching as a profession throughout my career.	175	4.2800	0.90744
4. Teaching is my passion.	175	3.6914	1.15305
5. I would proudly state my profession, when I become a teacher.	175	4.5486	0.71654
6. A lot of things related to teaching profession catch my interest.	175	4.1886	0.89307
7. Teaching is a profession I do with pleasure.	175	4.3829	0.82123
8. I think I would not choose teaching as a profession if I have a better alternative.*	175	2.18** / 3.8229***	1.29435
9. I think teaching would satisfy me spiritually.	175	4.2800	0.88174
10. I believe that I will be a successful teacher.	175	4.4800	0.70172
11. I would like to be a teacher even under disadvantageous conditions.	175	3.4686	1.13355
12. I would like to retire as a teacher.	175	4.3371	0.88768
13. I will strive to be a teacher.	175	4.5143	0.71000
14. I think teaching is a suitable profession for my character.	175	4.3657	0.87295
15. Being a teacher would work well for me.	175	4.4914	0.77213
16. I believe that teaching would bring me pleasure.	175	4.3029	0.85416
17. I believe that teaching would bring me prestige in the society.	175	4.1886	0.97314
Total	269	4.25	0.64

\*Negative statements

\*\* Mean as a negative

\*\*\* Mean when recoded as positive

**Table 2. Pre-service teachers' attitudes towards teaching profession**

### Comparing Teacher Attitudes Based on the Demographic Variables

Further examining the pre-test data, the results of the t-test analysis of pre-service teachers' attitudes towards the teaching profession based on gender, age, field of study, type of bachelor education, marital status, having a job with the regular income, and reasons for participating in the pedagogical formation program are provided (see Table 3).

Variables	Groups	N	M	SD	df	t	P
Gender	1. Woman	132	4.176	0.67	105.75	2.7	0.008
	2. Man	43	4.473	0.46			
Age	1. Between 22-25	118	4.220	0.67	173	0.854	0.394
	2. 26 or above	57	4.309	0.56			
Field of study	1. Science and Math	102	4.087	0.64	173	4.137	<0.000
	2. Social sci.	73	4.475	0.56			
Type of education	1. Normal	106	4.241	0.64	173	0.210	0.834
	2. Evening	69	4.262	0.64			
Marital status	1. Married	38	4.512	0.44	87,999	3.652	<0.000
	2. Single	137	4.176	0.66			
Having a job providing regular income	1. Yes	73	4.220	0.62	173	0.508	0.612
	2. No	102	4.270	0.65			
Reason for program participation	1. Love for profession	129	4.402	0.51	48,247	4.3	<0.000
	2. Finding a job	39	3.858	0.74			

**Table 3. T-test results comparing the pre-service teachers' attitudes towards teaching depending on some variables**

To sum up, there was a statistically significant difference in pre-service teachers' attitudes towards teaching profession based on the participants' gender [ $t_{(105,75)} = 2.7$ ;  $p < 0.05$ ], field of study [ $t_{(173)} = 4.137$ ;  $p < 0.05$ ], marital status [ $t_{(87,99)} = 3.652$ ;  $p < 0.05$ ] and reasons for participating in the program [ $t_{(48,247)} = 4.3$ ;  $p < 0.05$ ]; while the variables like age [ $t_{(173)} = 0.854$ ;  $p > 0.05$ ], type of education [ $t_{(173)} = 0.21$ ;  $p > 0.05$ ], and having a job providing regular income [ $t_{(173)} = 0.612$ ;  $p > 0.05$ ] did not have a statistically significant impact on the participants' attitudes.

The ANOVA results of pre-service teachers' attitudes towards the teaching profession based on the cumulative GPA from the bachelor's degree and their fathers' educational status (see Table 4) indicate that pre-service teachers' attitudes towards teaching profession do not differ depending on both of the variables like cumulative GPA of the bachelor education [ $F_{(2,172)} = 0.046$ ;  $p > 0.05$ ] and their fathers' educational status [ $F_{(3,171)} = 0.737$ ;  $p > 0.05$ ].

Variable	Level	N	X	SD	Sum of Squares	df	Mean Square	F	p
Cumulative GPA	1. Between 60-69	33	4.258	0.5774	0.038 71.226 71.264	2 172 174	0.019 0.414	0.046	0.955
	2. Between 70-79	101	4.256	0.6592					
	3. 80 or above	41	4.222	0.6536					
	4. Total	175	4.249	0.6399					
Father's highest education	1. Elementary	80	4.293	0.6250	0.909 70.355 71.264	3 171 174	0.303 0.411	0.737	0.531
	2. Middle	29	4.330	0.5762					
	3. High	44	4.144	0.6511					
	4. Bachelor Degree	22	4.189	0.7548					
	5. Total	175	4.249	0.6399					

**Table 4. ANOVA results comparing the pre-service teachers' attitudes towards teaching based on cumulative GPA and the Fathers' Educational status**

To compare the pre-service teachers' attitudes towards teaching profession based on their mothers' educational status, the Kruskal-Wallis Test was used (due to considerable differences between the groups in terms of quantity). Descriptive statistics related to the Kruskal-Wallis test results were the following: illiterate (N= 13; average rank = 106.42),

elementary (N= 105; average rank = 91.35), middle (N= 20; average rank = 80.53), high (N= 28; average rank = 76.45), and bachelor’s degree (N= 9; average rank = 74.89). Overall, the pre-service teachers’ attitudes towards the teaching profession did not differ significantly based on their mothers’ educational status [ $X_{(4)} = 4.682$ ;  $p > 0.05$ ].

**Connecting Pre-service Teacher Attitudes at the Beginning and in the End of Taking Pedagogical Formation Courses**

Pearson correlation coefficient between the pretest scores of pre-service teachers’ attitudes towards teaching profession and their cumulative GPA of the bachelor education was  $r = -0.105$ ; and between their posttest attitude scores and cumulative GPA was  $r = -0.127$ . Both correlation scores were found to be low and statistically insignificant. The paired samples t-test examined the difference between the pre-service teachers’ attitudes towards the teaching profession based on before and after taking pedagogical formation courses (see Table 5). There were no statistically meaningful differences found between the pretest-posttest results analysing the pre-service teachers’ attitudes towards the teaching profession before and after taking the formation courses [ $t_{(174)} = 1.504$ ;  $p > 0.05$ ]. In other words, six pedagogical formation courses taken by pre-service teachers did not change their attitudes towards teaching. The correlation between the pre-service teachers’ pretest and posttest attitude scores was high [ $r = 0.798$ ] and statistically meaningful [ $p = 0.000$ ]. Potential reasons and implications of these results are detailed in the discussion section.

Groups	N	M	SD	df	t	P
1.Pre-test	175	4.2491	0.63997	174	1.504	0.134
2.Post-test	175	4.2007	0.69016			

**Table 5. Paired samples t-test results comparing the participants’ attitudes at the beginning and the end of the Fall 2012 semester**

**Discussion**

Teacher education is important to preparing effective and dedicated teachers crucial to improving student achievement. Thus, numerous recently published studies examined the connection between teacher education to student achievement as a way to assess the effectiveness of teacher education programs (Feuerstein 2011; Goldhaber, Liddle, & Theobald 2013; National Research Council, 2010). Yet, preparing candidates for quality teaching is a complex process that needs to provide essential knowledge of learners, learning, subject matter, pedagogy, accountability and assessment (Hollins, 2011). Moreover, in the globalisation era, it is especially important for teacher education to reflect global trends (Apple 2011; Zhao 2010).

Numerous international studies have examined the pre-service teachers’ attitudes, thus emphasising the importance of this inquiry to the field of teacher education (e.g., Schussler, Stooksberry, & Bercaw, 2010; Tok, 2011). Aligned with the current educational trends of increasing accountability and promoting social justice, recent studies focused on linking teacher preparation to student achievement (Goldhaber, Liddle, & Theobald, 2013); on examining the pre-service teachers’ attitudes toward using development education methods

(McCormack & O'Flaherty, 2010); and on the importance of including diversity studies in teacher education (Milner, 2010).

This study examined a different aspect of the topic—analysing the pre-service teachers' attitudes towards the teaching profession and whether their attitudes were impacted by pedagogical formation courses that are part of teacher education in Turkey. In addition, this research examined whether pre-service teachers' attitudes towards teaching profession differed based on their demographical variables and their undergraduate grade point average.

The findings of the pre-test showed that participants had positive attitudes toward teaching as a profession, similar to the previous studies reporting high pre-service teachers' attitudes toward the profession (e.g., Aydın & Sağlam, 2012; Özder, Konedralı, & Zeki, 2010). This result is not surprising, given that all of the participants were enrolled in a teacher education program; therefore, they had intrinsic or extrinsic interests in pursuing a teaching career. Notably, the statements related to working as a teacher in disadvantaged situations yielded lesser agreement. Two potential reasons for lower agreement on these statements were pragmatic consideration such as salary and personal discomfort about being a teacher. An unexpected finding was a high agreement to the statement: "I believe that teaching would bring me prestige in the society", especially given the general agreement in the literature that teaching has become less prestigious and valued, leading in some cases to teacher shortages. Similarly to the previous research reporting lower self-concerns at the end of the preparation program (Boz, 2008; Smith et al., 2013), this study found that pre-service teachers believed that they would be successful teachers.

Certain demographical variables were found to impact pre-service teachers' attitudes towards teaching profession. Specifically, in this sample, there was a statistically significant difference in the pre-service teachers' attitudes towards the teaching profession based on their gender, field of study, and marital status. Consistent with the results of Balan et al. (2012) and Eraslan and Çakıcı (2011), this study found that male participants had more positive attitudes toward a teaching career. An interesting result in this study is that participants with the background in social sciences had higher attitudes toward teaching than those with the background in natural and applied sciences. This finding is consistent with some previous studies (Terzi & Tezci, 2007); however, other researchers (e.g., Aydın & Sağlam, 2012; Demirtaş, Cömert, & Özer, 2008) found no difference based on the discipline. Findings of this research indicate that potentially, students in social science subjects went into the profession because of their calling to be a teacher, while students in natural and applied sciences may believe that they could make a better career in an area other than education. These suppositions need to be empirically investigated in the future studies.

In accordance with the findings of Kızıldağ, Halmatov, and Sarıçam (2012) and İlğan, Sevinç, and Arı (2013), it was found that pre-service teachers' attitudes towards teaching profession did not differ depending on the type of their undergraduate education. In addition, consistent with the findings of Özder, Konedralı, and Zeki (2010), Sağlam (2008), Gürbüz and Kışoğlu (2007) and İlğan, Sevinç, and Arı (2013), it was reported that pre-service teachers who attended the pedagogical formation program because they loved teaching profession had more positive attitudes towards the profession than the ones who attended the program in order to find a job. Consistent with the previously published studies, this analysis did not find an influence of the students' GPA or of the mother's or father's educational level on the pre-service teachers' attitudes toward teaching profession (e.g., Derman et al., 2008).

Finally, the comparison of the pre-service teachers' attitudes towards the teaching profession based on before and after taking pedagogical formation courses revealed no statistically significant differences in the participants' responses. These results might be due to the fact that pre-service teachers already exhibited high attitude scores before taking the pedagogical formation courses. Another plausible reason is that the activities carried out

during the courses did not succeed in improving participants' attitudes toward the teaching profession. These results are different from the findings of the earlier studies that report a statistically significant difference between the pre-service students' attitudes in the beginning and at the end of the teacher education program (e.g., Tok, 2011).

The findings of recent international studies suggest that targeted courses and specially developed interventions offered as part of teacher education programs result in significant positive changes in pre-service teachers' attitudes about classroom diversity (Kumar & Hamer, 2012) and increase their willingness to integrate development education methods (McCormack & O'Flaherty, 2010). Yet, the students in this study's sample did not show improvement in their attitudes toward the profession after taking pedagogical formation courses.

Based on the literature review, the original hypothesis was that pre-service teachers' attitudes would be more positive after they took pedagogical formation courses. However, this hypothesis was rejected at the analysis stage. This result suggests the potential need to redesign and/or improve the pedagogical courses offered at this university. It is likely that currently offered courses focus too much on content, disregarding the aim of teacher education programs not only to equip pre-service teachers with the necessary skills and knowledge (Darling-Hammond & Bransford, 2005), but also to develop positive attitudes toward teaching (Jain, 2007). Possible reasons (that need to be further examined) suggest that the content or delivery methods were not adequate to bring about a positive change in teacher attitudes. This reasoning is not unlikely given that traditional teacher education is often described as inadequate in preparing successful teachers (Peske & Haycock, 2006); that pre-service teacher learning often does not reflect the schools' needs (Adamson, 2012; Seferoglu, 2006); and that teacher education in Turkey is professor-focused, while teacher candidates express preference for collaborative learning (Gursoy & Karatepe, 2006).

### **Limitations**

This study was limited to the sample of one cohort of students enrolled in a teacher certification program in one Turkish university. Therefore, the sample limits generalizability of the findings to the context of the study. In addition, the study was limited by the short period (4 months) between the pre-test and the post-test. There is a possibility that the findings could have been different if the post-test data were collected at the end of the school year, not at the end of the first semester. Finally, while the survey data provide a general overview of pre-service teachers' attitudes and beliefs, these data do not explain *why* the participants provided these specific responses and what factors have impacted the positive or negative changes (although not statistically significant) in their responses in the pre- and post-test. An in-depth qualitative study may be a good follow-up to examine these topics.

### **Conclusion**

This study aimed to connect pre-service teachers' attitudes toward teaching to their pedagogical formation courses. The analysis found no statistically significant differences between the participants' responses in the beginning and at the end of taking pedagogical formation courses. However, on the conceptual level, previous research suggests a link between these concepts. A likely explanation about the lack of statistically significant results in this study is the short timespan between the pre- and the post-tests and the fact that the participants were enrolled in an add-on certification program after having completed a four-

year bachelor degree program. Therefore, future studies may examine the connection between these concepts in the pre-service teacher attitudes in the beginning and at the end of the teacher education program to empirically test this connection in the context of different educational systems. This knowledge will be useful in informing educational policy and the practice of teacher education.

In summary, it is important to examine the pre-service teachers' attitudes toward teaching because they impact their teaching practices (Giovannelli, 2003). However, recent international research on teacher education has focused mainly on the development of content and pedagogical content knowledge (Kleickmann et al., 2013) and on social justice and accountability requirements ingrained in preparing teachers. While examining pre-service teachers' attitudes, researchers tend to analyse their concerns about teaching. In addition to the concerns related to teaching a specific subject (e.g., Campbell & Thompson, 2007; McDonnough & Matkins, 2010), researchers also emphasized the pre-service teachers' concerns about the adequacy of their preparation (Baum & McMurray-Schwarz, 2004) and show how pre-service teachers' attitudes and concerns change as they gain more classroom experience and progress through their preparation program (Lamote & Engels, 2010, Smith et al., 2013). Yet, lesser examined in the current research is the impact of university-offered classes on pre-service teachers' attitudes toward the teaching profession, suggesting the need to further analyse this area in different educational contexts around the world.

## References

- Adamson, B. (2012). International comparative studies in teaching and teacher education. *Teaching and Teacher Education*, 28(5), 641-648. <http://dx.doi.org/10.1016/j.tate.2012.02.003>
- Alptekin, C., & Tatar, S. (2011). Research on foreign language teaching and learning in Turkey (2005–2009). *Language Teaching*, 44(3), 328-353. <http://dx.doi.org/10.1017/S026144481100005X>
- American Association of Colleges of Teacher Education (AACTE). (2010, September). *21<sup>st</sup> Century Knowledge and Skills in Educator Preparation*. Author. Retrieved from [http://www.p21.org/storage/documents/aacte\\_p21\\_whitepaper2010.pdf](http://www.p21.org/storage/documents/aacte_p21_whitepaper2010.pdf)
- Apple, M. W. (2011). Global crises, social justice, and teacher education. *Journal of Teacher Education*, 62(2), 222-234. <http://dx.doi.org/10.1177/0022487110385428>
- Atay, D., Kaslioglu, O., & Kurt, G. (2010). The pedagogical content knowledge development of prospective teachers through an experiential task. *Procedia Social and Behavioral Sciences*, 2, 1421–1425. <http://dx.doi.org/10.1016/j.sbspro.2010.03.212>
- Aydın, R., & Sağlam, G. (2012). Teacher applicant's views toward teaching profession (Example from Mehmet Akif Ersoy University). [In Turkish]. *The Journal of Turkish Educational Sciences*, 10(2), 291-294.
- Balan, C. C., Bujor, L., & Serdenciuc, N. L. (2012). The role of the initial psycho-pedagogical training in structuring motivational and attitudinal dynamic toward teaching career. *Procedia Social and Behavioral Sciences*, 33, 463–467. <http://dx.doi.org/10.1016/j.sbspro.2012.01.164>
- Baum, A. C., & McMurray-Schwarz, P. (2004). Preservice teachers' beliefs about family involvement: Implications for teacher education. *Early Childhood Education Journal*, 32, 57-61. <http://dx.doi.org/10.1023/B:ECEJ.0000039645.97144.02>
- Ben-Peretz, M. (2011). Teacher knowledge: What is it? How do we uncover it? What are its implications for schooling? *Teaching and Teacher Education*, 27(1), 3-9. <http://dx.doi.org/10.1016/j.tate.2010.07.015>

- Bill & Melinda Gates Foundation. (2013). *Ensuring fair and reliable measures of effective teaching: Culminating findings from the MET project's three-year study*. Seattle, WA: Author. Retrieved from [http://metproject.org/downloads/MET\\_Ensuring\\_Fair\\_and\\_Reliable\\_Measures\\_Practitioner\\_Brief.pdf](http://metproject.org/downloads/MET_Ensuring_Fair_and_Reliable_Measures_Practitioner_Brief.pdf)
- Boz, Y. (2008). Turkish student teachers' concerns about teaching. *European Journal of Teacher Education*, 31(4), 367-377. <http://dx.doi.org/10.1080/02619760802420693>
- Cakiroglu, E., & Cakiroglu, J. (2003). Reflections on teacher education in Turkey. *European Journal of Teacher Education*, 26(2), 253-264. <http://dx.doi.org/10.1080/0261976032000088774>
- Campbell, M. R., & Thompson, L. K. (2007). Perceived concerns of music education teachers: A cross-sectional study. *Journal of Research in Music Education*, 55, 162-176. <http://dx.doi.org/10.1177/002242940705500206>
- Cochran-Smith, M., & Power, C. (2010). New directions for teacher preparation. *Educational Leadership*, 67(8), 6-13.
- Darling-Hammond, L., & Bransford, J. (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do*. San Francisco, CA: Jossey-Bass.
- Demirtaş, H., Cömert, M., & Özer, N. (2008). Relationship between teaching profession and self-efficacy perception of teacher candidates. [In Turkish]. *Proceedings of International Conference on Educational Science ICES'08*. Vol. 1, 23-25, June. Famagusta North Cyprus.
- Depaepe, F., Verschaffel, F., & Kelchtermans, G. (2013). Pedagogical content knowledge: A systematic review of the way in which the concept has pervaded mathematics educational research. *Teaching and Teacher Education*, 34, 12-25. <http://dx.doi.org/10.1016/j.tate.2013.03.001>
- Derman, A., Özkan, E., Altuk, Y., & Mülazımoğlu. İ. E. (2008). An investigation of chemistry student teachers' attitudes toward teaching profession. [In Turkish]. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, 9(2), 113-127.
- Dündar, H., & Karaca, E. T. (2013). Pedagogical formation students' conceptual metaphors about pedagogical formation program [In Turkish]. *Gazi Üniversitesi Endüstriyel Sanatlar Eğitim Fakültesi Dergisi*, 30, 19-34.
- Eraslan, L., & Çakıcı, D. (2011). Pedagogical formation program students' attitudes toward teaching profession. [In Turkish]. *Kastamonu Education Journal*, 19(2), 427-438.
- Feuerstein, A. (2011). The politics of accountability and teacher preparation. *Action in Teacher Education*, 33(1), 3-23. <http://dx.doi.org/10.1080/01626620.2011.559421>
- Giovannelli, M. (2003). Relationship between reflective disposition toward teaching and effective teaching. *The Journal of Educational Research*, 96(5), 293-309. <http://dx.doi.org/10.1080/00220670309597642>
- Goldhaber, D., Liddle, S., & Theobald, R. (2013). The gateway to the profession: Assessing teacher preparation programs based on student achievement. *Economics of Education Review*, 34(C), 29-44. <http://dx.doi.org/10.1016/j.econedurev.2013.01.011>
- Gürbüz, H., & Kışoğlu, M. (2007). Attitudes of the Science and Art Faculty students and Education Faculty students enrolled in the non-thesis graduate education program toward teaching profession (Atatürk University Sample). [In Turkish]. *Erzincan Eğitim Fakültesi Dergisi*, 9(2), 71-83.
- Gursoy, E., & Karatepe, C. (2006). Attitudes of student teachers towards a collaborative and student-centred learning in an EFL teacher education setting. *Uludağ University Faculty of Education Journal*, 19, 135-152.

- Hodgen, J. (2011). Knowing and identity: a situated theory of mathematics knowledge in teaching. In T. Rowland & K. Ruthven (Eds.), *Mathematical knowledge in teaching* (pp. 27-42). Dordrecht: Springer. [http://dx.doi.org/10.1007/978-90-481-9766-8\\_3](http://dx.doi.org/10.1007/978-90-481-9766-8_3)
- Hollins, E. R. (2011). Teacher preparation for quality teaching. *Journal of Teacher Education*, 62(4), 395–407. <http://dx.doi.org/10.1177/0022487111409415>
- İlğan, A., Sevinç, O., & Arı, G. (2013). The perceptions of teachers about professional attitude and contemporary teacher qualifications. [In Turkish]. *OMÜ Eğitim Fakültesi Dergisi*, 32(2), 175-195
- Jain, R. (2007). A study of teaching effectiveness of teachers and their attitudes towards teaching profession. *Journal of Indian Education*, 33, 77–89.
- Karamustafaoglu, O. (2009). A comparative analysis of the models of teacher education in terms of teaching practices in the USA, England, and Turkey. *Education*, 130(2), 172-183.
- Kıldan, A. O., İbret, B. Ü., Pektas, M., Aydınözü, D., Incikabı, L., & Recepoglu, E. (2013). Evaluating views of teacher trainees on teacher training process in Turkey. *Australian Journal of Teacher Education*, 38(4), 51-68.
- Kızılaslan, I. (2012). Teaching in rural Turkey: Pre-service teacher perspectives. *European Journal of Teacher Education*, 35(2), 243-254. doi:10.1080/02619768.2011.643394
- Kızıлтаş, E., Halmatov, M., & Sarıçam, H. (2012). Preschool department students' attitudes about teaching profession (The case of Agri İbrahim Cecen University). [In Turkish]. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi*, 12(23), 173-189.
- Kleickmann, T., Richter, D., Kunter, M., Elsner, M., Besser, M., Krauss, S., & Baumert, J. (2013). Teachers' content knowledge and pedagogical content knowledge: The role of structural differences in teacher education. *Journal of Teacher Education*, 64(1), 90-106. <http://dx.doi.org/10.1177/0022487112460398>
- Kucukoglu, A. (2012). Service learning in Turkey: Yesterday and today. *Procedia Social and Behavioral Sciences*, 46, 3083-3087. <http://dx.doi.org/10.1016/j.sbspro.2012.06.015>
- Kumar, R., & Hammer, L. (2012). Preservice teachers' attitudes and beliefs toward student diversity and proposed instructional practices: A sequential design study. *Journal of Teacher Education*, 64(2), 162-177. <http://dx.doi.org/10.1177/0022487112466899>
- Lamote, C., & Engels, N. (2010). The development of student teachers' professional identity. *European Journal of Teacher Education*, 33, 3-18. <http://dx.doi.org/10.1080/02619760903457735>
- McCormack, O., & O'Flaherty, J. (2010). An examination of pre-service teachers' attitudes toward the inclusion of development education into Irish post-primary schools. *Teaching and Teacher Education*, 26(6), 1332-1339. <http://dx.doi.org/10.1016/j.tate.2010.02.008>
- McDonnough, J., & Matkins, J. (2010). The role of field experience in elementary preservice teachers' self-efficacy and ability to connect research to practice. *School Science & Mathematics*, 110(1), 13-23. <http://dx.doi.org/10.1111/j.1949-8594.2009.00003.x>
- MEB. (2011). *Organization of Turkish Education System-2011*. [In Turkish]. Ankara: MEB Strateji Geliştirme Başkanlığı.
- Milner, H. R. (2010). What does teacher education have to do with teaching? Implications for diversity studies. *Journal of Teacher Education*, 61(1-2), 118-131. <http://dx.doi.org/10.1177/0022487109347670>
- National Research Council. (2010). Better data on teacher preparation could aid efforts to improve education. The National Academies Office of News and Public Information.
- Noell, G., & Burns, J. (2009). *Value-added teacher preparation assessment: Overview of 2007–08 study*. Baton Rouge: Louisiana Teacher Quality Initiative. Retrieved from [www.regents.louisiana.gov/Academic/TE/Value%20Added.htm](http://www.regents.louisiana.gov/Academic/TE/Value%20Added.htm)

- Özder, H., Konedralı, G., & Zeki, C. P. (2010). Examining the attitudes toward the teaching profession and academic achievement of prospective teachers.[In Turkish].*Educational Administration: Theory and Practice*, 16(2), 253-275.
- Peske, H., & Haycock, K. (2006). *Teaching inequality: How poor and minority students are short changed on teacher quality: A report and recommendations by the Education Trust* (No. ED 494820). Washington, DC: Education Trust.
- Prescott, A., Bausch, I., & Bruder, R. (2013). TELPS: A method for analysing mathematics pre-service teachers' Pedagogical Content Knowledge. *Teaching and Teacher Education*, 35, 43-50. <http://dx.doi.org/10.1016/j.tate.2013.05.002>
- Sağlam, A. Ç. (2008). The attitudes of the music students toward the teaching profession [In Turkish]. *YüzyüncüYılÜniversitesiEğitimFakültesiDergisi*, 5(1), 59-69.
- Sanal-Erginel, S. (2006). *Developing reflective teachers: A study on perception and improvement of reflection in pre-service teacher education*. Unpublished Ph.D. dissertation, Middle East Technical University, Ankara, TR.
- Schussler, D. L., Stooksberry, L. M., & Bercaw, L. A. (2010). Understanding teacher candidate dispositions: Reflecting to build self-awareness. *Journal of Teacher Education*, 61(4), 350-363. <http://dx.doi.org/10.1177/0022487110371377>
- Seferoglu, G. (2004). A study of alternative English teacher certification practices in Turkey. *Journal of Education for Teaching*, 30(2), 151-159. <http://dx.doi.org/10.1080/0260747042000229762>
- Seferoglu, G. (2006). Teacher candidates' reflections on some components of a pre-service English teacher education programme in Turkey. *Journal of Education for Teaching*, 32(4), 369-378. <http://dx.doi.org/10.1080/02607470600981953>
- Shulman, L. S. (1986). Those who understand: knowledge growth in teaching. *Educational Researcher*, 15,4-14. <http://dx.doi.org/10.3102/0013189X015002004>
- Smith, L. F., Corkery, G., Buckley, J., & Calvert, A. (2013). Changes in secondary school preservice teachers' concerns about teaching in New Zealand. *Journal of Teacher Education*, 64(1), 60-74. <http://dx.doi.org/10.1177/0022487112449019>
- Terzi, A. R., & Tezci, E. (2007). The attitudes of the students towards teaching profession at Necatibey Education Faculty.[In Turkish].*Educational Administration: Theory and Practice*, 52, 593-614.
- Tok, S. (2011). Pre-service primary education teachers' changing attitudes towards teaching: A longitudinal study. *European Journal of Teacher Education*, 34(1), 81-97. <http://dx.doi.org/10.1080/02619768.2010.534130>
- Toy, B. Y., & Ok, A. (2012). Incorporating critical thinking in the pedagogical content of a teacher education programme: Does it make a difference? *European Journal of Teacher Education*, 35(1), 39-56. <http://dx.doi.org/10.1080/02619768.2011.634902>
- Usak, M., Ozden, M., & Eilks, I. (2011). A case study of beginning science teachers' subject matter (SMK) and pedagogical content knowledge (PCK) of teaching chemical reaction in Turkey. *European Journal of Teacher Education*, 34(4), 407-429. <http://dx.doi.org/10.1080/02619768.2011.592977>
- Wong, T.-W., & Lai, Y.-C. (2006). Exploring factors affecting mathematics teaching effectiveness among pre-service primary mathematics student teachers. Paper presented at the meeting of Australian Association for Research in Education (AARE) Conference. Retrieved from <http://publications.aare.edu.au/06pap/won06754.pdf>
- Yildirim, E. (2012). The investigation of the teacher candidates' attitudes towards teaching profession according to their demographic variables (The sample of Maltepe University). *Procedia Social and Behavioral Sciences*, 46,2352-2355. <http://dx.doi.org/10.1016/j.sbspro.2012.05.483>

- YOK (Higher Education Council of Turkey) (1998). *Academic programs for faculty of educations*. [in Turkish]. Ankara: Publication of Higher Education Council of Turkey. Retrieved from [http://www.yok.gov.tr/documents/10279/30217/Egitim\\_fakultesi\\_ogretmen\\_yeti\\_stirme\\_lisans\\_programlari\\_mart\\_98.pdf/5e166018-b806-48d5-ae13-6afd5dac511c](http://www.yok.gov.tr/documents/10279/30217/Egitim_fakultesi_ogretmen_yeti_stirme_lisans_programlari_mart_98.pdf/5e166018-b806-48d5-ae13-6afd5dac511c)
- Yüksel, İ. (2012). The current developments in teacher education in Turkey on the threshold of European Union. *International Journal of Humanities and Social Science*, 2(8), 49-56.
- Zhao, Y. (2010). Preparing globally competent teachers: A new imperative for teacher education. *Journal of Teacher Education*, 61(5), 422-431. <http://dx.doi.org/10.1177/0022487110375802>