

# Turkish Prospective Teachers' Attitudes towards the Teaching Profession: A Meta-Analysis Study\*

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## Abstract

This research aims to explore whether prospective teachers' attitudes towards the teaching profession vary across demographic characteristics. A meta-analysis has been conducted for the related studies on prospective teachers' attitudes towards the teaching profession in Turkey. The effect sizes for random effects model have been employed over 103 studies in terms of gender, 26 regarding grade level, 18 for the presence of a teacher in the family, and 11 for the graduated faculties by using Hedges'  $g$  coefficient. Various methods have been utilized in an attempt to examine publication bias in the meta-analysis, such as the funnel plots, Duval and Tweedie's trim and fill method, and Egger's regression test. The findings revealed that prospective teachers' attitudes towards the teaching profession significantly varied depending on the gender in favor of the females with medium effect while the variables; grade level, the presence of a teacher in the family, and type of faculty, did not significantly change prospective teachers' attitudes towards teaching profession. This indicates that only the gender variable from the demographic characteristics changes prospective teachers' attitude towards the teaching profession.

*Key Words:* Effect size, meta-analysis, prospective teachers, teaching profession, attitude

## INTRODUCTION

Considering the studies conducted within the scope of educational sciences discipline, the number of studies regarding attitude towards teaching profession has increased considerably since 2000's. These studies are generally empirical researches that aim to reveal how the attitude towards teaching profession varies across demographic characteristics. When the results of these studies are examined, it is observed that the findings are different and inconsistent from one another; hence it is hard to obtain generalizable knowledge. In this regard, meta-analysis studies are at the forefront. This research aims to examine whether prospective teachers' attitudes towards teaching profession differ across their demographic characteristics through use of meta-analysis method.

With a view to understanding the significance of the attitude towards the teaching profession, it is essential to scan the definitions made about the concept of attitude from past to present. Fishbein and Ajben (1975) have defined attitude as positive or negative pre-disposition to respond to a stimulus object. On the other hand, Pratkanis and Greenwald (1989) have described attitude not only as a function of the stimulus object, but also as a function of the personality variables and the roles as well as tasks that one must perform in a particular situation. Eagly and Chaiken (1993) identify attitude as a psychological tendency that evaluates a certain entity positively or negatively. These definitions have suggested that attitude is not a behavior but a tendency that prepares for behaviors (Tuncer & Bahadır, 2016). Within the framework of these definitions, the attitude towards the teaching profession can also be defined as the thoughts and feelings that an individual holds in mind regarding the teaching profession (Camadan & Duysak, 2010). In this context, the attitudes of the teachers towards the teaching profession may lead to the emergence of their behaviors necessary for teaching (Emre &

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Ünsal, 2017; Kartal & Afacan, 2012). The relevant literature has revealed that the individuals who possess a positive attitude towards the teaching profession will make an effort for their professional competency, they will be keen on their profession, they will have real communication with the students and they will create different learning environments (Çeliköz & Çetin, 2004; Demirtaş, Cömert & Özer, 2011; Semerci & Semerci, 2004).

Since attitude is an affective behavior, attitude scales developed by different researchers have been used since 1980s in order to measure attitudes towards the teaching profession, and it appears that the number of these scales have increased in recent years. The attitude towards teaching profession is generally found to have one factor in these scales and the number of items varies between 10 and 34 (Aşkar & Erden, 1987; Başbay, Ünver & Bümen, 2009; Bulut, 2009; Erkuş, Sanlı, Bağlı & Güven, 2000; Semerci, 1999; Üstüner, 2006). More than that, there are also scales that include more than one factor related to the teaching attitude. The attitude scale developed by Ünlü (2011) consists of 23 items and 2 dimensions-“Affection for Profession” and “Concern about the Profession”; the scale developed by Çapa and Çil (2000) has 32 items and three dimensions including “Affection for Profession”, “Self-Confidence in Profession” and “Respect for Profession”; the scale developed by Çetin (2006) possesses 34 items and three dimensions-“Affection for Profession”, “Value for Profession” and “Compatibility with Profession”. Considering the dimensions in these studies, the dimension of “Affection for Profession” is common and corresponds to the factor having the highest percentage of the total variance explained in all three studies. This offers an insight into the fact that the attitude towards the teaching profession is highly related to the professional affection that plays a significant role in shaping professional behavior.

Numerous studies have been conducted on the relationship between teachers’ or prospective teachers’ attitudes towards teaching profession and different variables. The studies have analyzed the relationship between teachers’/prospective teachers’ attitudes towards teaching profession and their pedagogical competency perceptions (Adıgüzel, 2017), self-efficacy perceptions (Bakaç & Özen, 2017; Dadandı, Kalyon & Yazıcı, 2016), their personalities based on adjectives (Aslan & Yalçın, 2013), teaching motivation (Ayık & Ataş, 2014), academic motivation (Bedel, 2015), personal values (Bektaş & Nalçacı, 2012), professional alienation levels (Çağlar, 2013), life-long learning levels (Çam & Üstün, 2016), job satisfaction (Çetin, 2016), professional competency levels (Çetinkaya, 2007), learning styles (Çiğdem & Memiş, 2010), communication skills (Çimen, 2016; Tümkaya, 2016), professional motivation (Çimen, 2016), professional field knowledge (Dikmenli & Çifçi, 2015), occupational self-esteem (Dilmaç, Çıkılı, Işık & Sungur, 2009; Girgin, Akamca, Ellez & Oğuz, 2010), professional anxiety (Doğan & Çoban, 2009), academic dishonesty tendency (Hançer, 2017), contemporary teaching perceptions (İlğan, Sevinç & Arı, 2013), learning styles (Kahyaoglu, Tan & Kaya, 2013; Saracaloğlu & Dursun, 2011), emotional intelligence levels (Kayserili, 2009), critical thinking and creativity skills (Kesicioğlu & Deniz, 2014), life satisfaction levels (Kiralp & Bolkan, 2016; Receptoğlu, 2013), liking of children (Kuşcu, Erbay, Acar & Gülnar, 2015), social skills (Kozagaç, 2015), academic procrastination behaviors (Kutlu, Gökdere & Çakır, 2015), classroom management approaches (Süral, 2015), vocational motivation levels (Ömür & Nartgün, 2013), job satisfaction levels (Orhan, 2013), attitude towards cheating (Özyurt & Altay, 2014), personal values (Parlar & Cansoy, 2016), attitudes towards school (Baykara Pehlivan, 2004), professional concerns (Serin, Güneş & Değirmenci, 2015), technopedagogical field knowledge (Tuncer & Bahadır, 2016) ve reflective thinking skills (Yumuşak, 2015).

In addition to the examination of the relationship between the attitude toward the teaching profession and related variables, a number of studies have analyzed how attitude towards teaching profession varies across individuals’ demographic characteristics. The related studies mostly involve the demographic characteristics such as gender (Camadan & Duysak, 2010; Çiğdem & Memiş, 2011), high school type (Can, 2010), education status (İlğan, Sevinç & Arı, 2013; Tok, 2012), grade level (Kaplan & İpek, 2002; Tümkaya, 2011), faculty type (Kozagaç, 2015; Ömür & Nartgün, 2013), religious status (Parvez & Shakır, 2014) ve the presence of a teacher in the family (Kutlu, Gökdere & Çakır, 2015; Receptoğlu, 2013). It seems difficult to determine the demographic characteristics that influence the attitude towards the teaching profession due to the use of different sample sizes and

inconsistencies between the results in the studies. Thus, a meta-analysis is required to determine whether the demographic variables are real determinants of the attitude towards teaching profession.

### ***The Purpose and Significance of Study***

Upon examining the relevant literature, it has been determined that meta-analysis studies on the attitude toward the teaching profession are limited. A meta-analysis study conducted by Erdemar, Aytaç, Türk and Arseven (2016) and including 35 studies carried out between 2004 and 2015 has only examined whether the attitude towards teaching profession differs across gender. In their survey study, Eren, Çelik and Oğuz (2014) have found 109 studies conducted between 1984 and 2013 related to the attitudes towards the teaching profession. The limited number of demographic variables used in a few number of meta-analyses has raised need for conducting such a study. In this meta-analysis, both the number of studies related to the subject and included in this research have been increased, and the demographic characteristics that are related to attitude have been augmented. Within this scope, answers to the following questions have been sought:

1. Do prospective teachers' attitudes towards teaching profession significantly vary across their gender?
2. Do prospective teachers' attitudes towards teaching profession significantly differ across their grade level (freshman and senior)?
3. Do prospective teachers' attitudes towards teaching profession significantly vary across the presence of a teacher in the family?
4. Do prospective teachers' attitudes towards teaching profession significantly vary across being education faculty graduate/studying in education faculty or graduates of other faculties/studying in the other faculties (faculty type)?

## **METHOD**

### ***Research Design***

This study has been designed through use of the meta-analysis method. Meta-analysis is a quantitative research that takes place by statistically combining the results from multiple studies on the topic in the related literature (Borenstein, Hedges, Higgins, & Rothstein, 2009; Cooper, Hedges, & Valentine, 2009).

This research has scanned databases such as ULAKBİM, Google Academic, Web of Science and ERIC in order to explore whether prospective teachers' attitudes towards teaching profession vary across what factors; moreover, 249 studies have been achieved through the search made by using such keywords as "teacher candidates", "the teaching profession", "teaching attitude" and "attitudes towards the teaching profession". Of all the studies, those that meet the specified criteria are included in the meta-analysis study. The following criteria have been used in determining the studies to be included in this research: 1) Research questions include variables such as gender, grade level, being a teacher in the family, and faculty type. 2) The parametric tests (t-test and ANOVA) have been used in during data analysis, sample size, group mean and standard deviation values have been presented. 3) The reliability coefficients of the teachers' attitude scales used in the quantitative studies have been provided and the values are greater than .70. Taking the criteria into consideration, 249 studies meeting the first criterion have been included in the study. 129 of 249 studies have been determined to be available according to the second criterion which signifies that both parametric tests are used and the sample size, group mean and standard deviation values are provided. Lastly, 113 studies have been included in the meta-analysis considering the third criterion referring to the fact that the reliability coefficient of the teaching attitude scale is greater than .70.

### Sample

The number of theses and articles have been initially determined for each research question, and the samples used in these studies have been examined. Table 1 presents the number of the studies, their demographic characteristics and sample sizes.

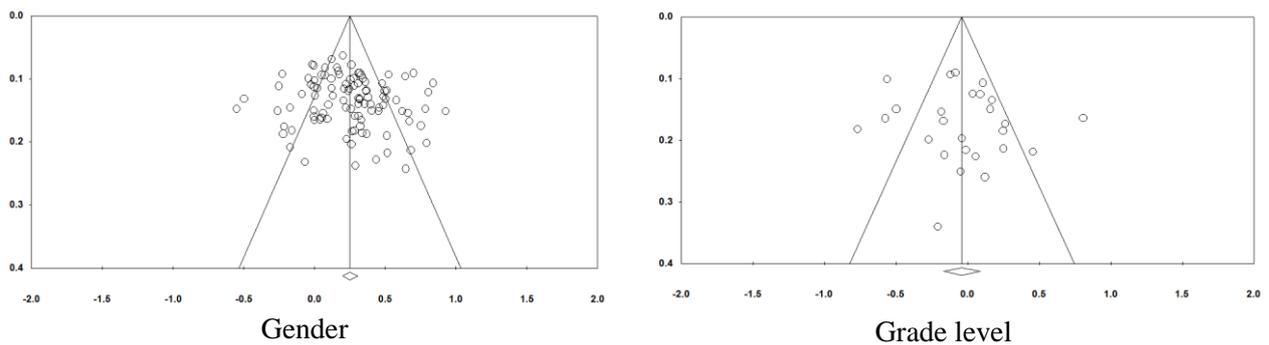
Table 1. Descriptive Tables Regarding the Studies

Variables	Number of studies	Category	Sample size
Gender	103	Female	18252
		Male	13661
Grade level	26	1 <sup>st</sup> grade	2880
		4 <sup>th</sup> grade	2185
The presence of a teacher in the family	18	Yes	1854
		No	3061
Faculty type	11	Education Faculty	1423
		Other Faculties	1118

Table 1 displays that 103 of the studies include "gender" variable and that the sample of these studies holds a total of 31913 prospective teachers. Besides, the "grade level" variable available in the second research question is included in 26 studies as 1st and 4th grade and the total sample in these studies is composed of 5065 prospective teachers. The reason for the selection of these classes is that the first grade represents the first year of faculty and the fourth year represents the last year / years. As for the third research question, the variable of "the presence of a teacher in the family" takes place in 18 studies and the total number of samples in these studies is 4915. There are 11 studies about the last research question, "faculty type", and the sample consists of 2541 individuals.

### Publication Bias

Publication bias refers to the likelihood that a group of studies selected from published studies on a particular topic may not represent all studies (Rothstein, Sutton, & Borenstein, 2005). If the studies that are statistically significant are mostly examined in a meta-analysis, it is likely that this analysis has publication bias (Borenstein et al., 2009). In this regard, several methods are used for detecting publication bias. The most commonly used of these methods are the Funnel Plots, Duval and Tweedie's trim and fill method and Egger's Linear Regression Test. This research used Funnel plot so as to test the publication bias. Figure 1 presents The Funnel Plots showing the publication bias.



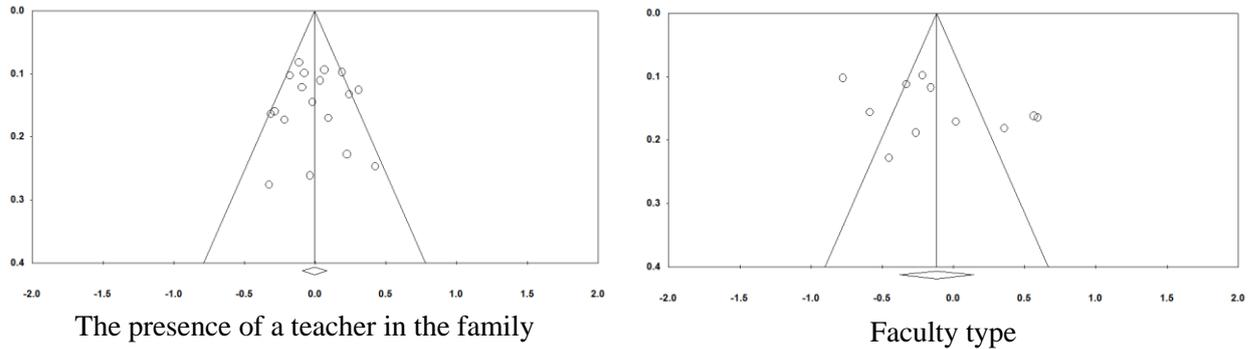


Figure 1. Funnel Plots

Sterne et al. (2011) have stated that if the points calculated for each study and their effect values are scattered symmetrically around the vertical line in the funnel, it will not result in publication bias.

Figure 1 suggests that four funnel plots is distributed symmetrically. However, the results of Duval and Tweedie's trim and fill method and Egger's Linear Regression Test are shown in Table 2 since the funnel plots do not provide a statistically clear result.

Table 2. Test Results Regarding Publication Bias

Variable	Duval And Tweedie's Trim and Fill Method		Egger's Regression Test ( <i>p</i> )
	Trimmed Study	Observed/Filled	
Gender	17	0.25 (0.20, 0.30) / 0.17 (0.12, 0.23)	0.178
Grade level	5	-0.04 (-0.17, 0.09) / -0.14 (-0.28, -0.01)	0.429
The presence of a teacher in the family	0	0.00 (-0.09, 0.09) / 0.00 (-0.09, 0.09)	0.950
Faculty type	3	-0.12 (-0.38, 0.14) / -0.12 (-0.38, 0.14)	0.159

Table 2 shows the results of Duval and Tweedie's trim and fill method conducted to determine the publication bias. This method recalculates the size effect in the case of trimming of this number, showing the number of studies that need to be trimmed in order to correct the asymmetric state of the funnel plot. If the difference between the two results (observed/corrected value) is not statistically significant, it is understood that the analysis does not result in publication bias (Pamuk, Atli & Kış, 2015). The difference between the observed and corrected values in the 95% confidence interval of the four variables in this study is not statistically significant, indicating that the study is free from publication bias.

Egger's regression test is another method used to test publication bias. The insignificant result indicates that there is no publication bias (Klassen & Tze, 2014). The values obtained in this study support the absence of publication bias for four variables.

### Heterogeneity Test

Heterogeneity test has been used before data analysis as this test is especially one of the assumptions underlying in the use of the random-effects model (Başak, Aşkın and Gelbal, 2016; Üstün and Eryılmaz, 2014). Hence, the Q-test showing the heterogeneity of the effect sizes of the studies in the meta-analysis and the results obtained by calculating  $I^2$  value indicating the level of heterogeneity are presented in Table 3.

Table 3. Heterogeneity Test Results

	K	Q	I <sup>2</sup>	Degree of Freedom	p
Gender	103	477.94	78.658	102	.000
Grade level	26	113.194	77.914	25	.000
The presence of a teacher in the family	18	34.055	50.080	17	.008
Faculty type	11	97.034	89.694	10	.000

The level of heterogeneity varies across  $I^2$  value. This value indicates that the variance among the studies' results from heterogeneity rather than chance. If the value of  $I^2$  is less than 25%, the level of heterogeneity is low, if it is 50%, the level of heterogeneity is medium and if it is greater than 75%, the level is classified as high. According to Table 2, the heterogeneity levels for the variables of gender, grade and faculty type have been identified to be high since  $I^2$  is greater than 75%, while medium level heterogeneity has been found in terms of the presence of a teacher in the family variable.

### Data analysis

The effect sizes can be calculated through the fixed effects model and the random effects model in meta-analysis. In the fixed effect model, the same effect level is calculated for all studies and weighting is performed based on the number of observations in the samples of the studies (Borenstein et al., 2009). As for the random effects model, the effect size differs due to the demographic and other characteristics of the sample (Cooper, Hedges, & Valentine, 2009; Üstün & Eryılmaz, 2014) and presents more generalizable results (Card, 2011). In addition, Borenstein et al. (2009) have recommended that the random effects model be used in meta-analysis of published studies. Thus, this research used random effects model.

The effect sizes related to the population and each study have been calculated by using the "Hedges'  $g$ " method through the "Comprehensive Meta-Analysis" program. The other methods, "Cohen's  $d$ " and "Glass  $\Delta$ " methods have mild bias for small samples in the calculation of the effect sizes of population (Üstün and Eryılmaz, 2014). The "Hedges'  $g$ " method proposes a solution to this situation with the  $J$  correction factor as shown below.

$$g = J \cdot d$$

Here,  $J$  is the correction factor and  $d$  is Cohen's formula. These two factors are presented as a formula below.

$$J = 1 - \frac{3}{4d_f - 1}$$

$$\text{Cohen } d = \frac{x_e - x_c}{S_p}$$

Here,  $d_f$  in  $J$  correction factor represents degree of freedom; while  $x_e$ ,  $x_c$  and  $S_p$  in "Cohen's  $d$ " refer to the mean of the experimental group, the mean of the control group and combined standard deviation of the two groups, respectively.

## RESULTS

This research has analyzed 103 studies consisting of 31913 individuals with the aim of determining whether prospective teachers' attitudes towards teaching profession differ across their gender, which is the first research question. According to the random effects model, the  $z$  score has been found to be statistically significant ( $z=9.494$ ,  $p<0.05$ ), while the standardized mean difference between the 18252 female and 13661 male prospective teachers has been identified to be 0.252 at the 95% confidence interval, meaning that female prospective teachers have a statistically more positive attitude towards

the teaching profession compared to males. Appendix-2 shows the forest plot of the effect sizes of 103 studies including "gender" variable.

As for the second research question, 26 studies consisting of 5065 individuals have been examined in order to reveal whether prospective teachers' attitudes towards teaching profession vary across their "grade level". According to the random effects model, no significant difference has been determined in  $z$  score ( $z=-0.617, p>0.05$ ), while the standardized mean difference between the 2880 1<sup>st</sup> grade and 2185 4<sup>th</sup> grade prospective teachers has been found to be -0.041 at the 95% confidence interval. This indicates that prospective teachers' attitudes towards teaching profession do not significantly differ across their grade level. Appendix-3 displays the forest plot of the effect sizes of 26 studies including "grade level" variable.

When it comes to the third research question, 18 studies conducted with 4915 individuals have been analyzed so as to explore whether prospective teachers' attitudes towards teaching profession vary across "the presence of a teacher in the family". According to the random effects model, the standardized mean difference between the 1854 prospective teachers who have teachers in their families and 3061 who do not have teachers in their families has been determined to be -0.003 at the 95% confidence interval, and no significant difference has been found in terms of  $z$  score ( $z=-0.074, p>0.05$ ). This supports the view that the presence of a teacher in the family does not significantly change prospective teachers' attitudes towards teaching profession. Appendix-4 presents the forest plot of the effect sizes of 18 studies including "the presence of a teacher in the family" variable.

Considering the last research question, 11 studies composed of 2541 individuals have been analyzed in an attempt to determine whether prospective teachers' attitudes towards teaching profession vary across "faculty type". According to the random effects model, the standardized mean difference between the 1423 prospective teachers from education faculty and 1118 teachers from the other faculties has been identified to be -0.119 at the 95% confidence interval, and no significant difference has been found in terms of  $z$  score ( $z=-0.895, p>0.05$ ). This sheds light onto the fact that faculty type does not significantly change prospective teachers' attitudes towards teaching profession. Appendix-5 shows the forest plot of the effect sizes of 11 studies including "faculty type" variable.

## DISCUSSION and CONCLUSION

The present study has explored as to whether the attitudes of the prospective teachers towards the teaching profession vary across gender, grade level, the presence of a teacher in the family and faculty type. In this regard, meta-analysis method has been used to obtain generalizable information from the related studies that were previously made, that are different and inconsistent.

After satisfying the specified criteria, 106, 26, 18 and 11 studies have been accessed for the variables such as gender, grade level, the presence of a teacher in the family and faculty type, respectively. Taking the sample sizes into account, a total of 31913 prospective teachers-18252 female and 13661 male-; a total of 5065 prospective teachers-2880 are 1st grade and 2185 are 4th grade-; 4915 prospective teachers-1854 having teachers in their families and 3061 no teacher in their families-; a total of 2541 teachers-1423 from education faculty and 1118 from other faculties- have been determined as the research sample.

Statistical analyzes pave the way for the fact that female prospective teachers have a more positive attitude regarding the teaching profession compared to the males. This result is especially true supporting the same meta-analysis study conducted by Erdemar et al. (2016) with 35 studies. The previous studies lead forth the reason for this difference as such. Teaching profession is much more compatible with the women's perceptions as compared to male teachers (Terzi & Tezci, 2007), hence it is conceivable that women are more willing to prefer the teaching profession and that they have plans to devote their whole lives to children.

No significant difference has been observed among prospective teachers' attitudes towards the teaching profession in terms of their grade level. Similar results have emerged in the studies conducted

by Dalkıran & Yıldız (2016) and Pehlivan (2008). However, several studies have put forwards that 1<sup>st</sup> grade prospective teachers have higher level of perceptions towards teaching profession compared to 4<sup>th</sup> graders (Yildizer, Ozboke, Tascioglu & Yilmaz, 2017). On the other hand, some studies have shown that 4<sup>th</sup> grade prospective teachers' attitudes towards the teaching profession are more positive than 1<sup>st</sup> graders (Aydın & Tekneci, 2013; Çelen & Eskicioğlu, 2015). However, the underlying reasons for the 1<sup>st</sup> and 4<sup>th</sup> grade prospective teachers' attitudes towards teaching profession are prospective teachers and faculty. In particular, the reasons why prospective teachers prefer the related teaching programs are that teaching is a job-guaranteed profession or the will of the family (Ekici, 2014; Kartal & Afacan, 2012), leading to the fact that they may see the teaching profession as a "profession" rather than "sanctity", and their attitudes towards the profession may not decrease even if they receive 4-year undergraduate education. It is hotly-debated that the teaching profession courses are generally taught theoretically rather than practically by the faculty members and this situation is compensated by the teaching practice course (Eraslan, 2009). In addition, Paker (2008) has emphasized the problems experienced by prospective teachers in their teaching practice lessons, particularly clarified the fact that teachers have not received enough feedback from the observations and presentations they have made. This may cause prospective teachers' failure in internalizing their profession even at the end of 4 year-undergraduate education, and therefore there may not be any change in their attitudes towards the teaching profession. For this reason, it is necessary to increase the teaching application hours and this course should be processed with the principle of accountability in an attempt to improve the attitudes of the prospective teachers towards teaching profession.

Research results have also revealed that prospective teachers' attitudes towards teaching profession do not significantly differ across the presence of a teacher in the family. This result is in line with that of all meta-analysis studies except for the one conducted by Akpınar, Yıldız & Ergin (2006). The attitude towards the teaching profession can be explained as a situation that is not expected to be changed by the external factor, "the presence of a teacher in the family", when it is considered to be defined internally (Çapa & Çil, 2000; Çetin, 2006; Eagly & Chaiken, 1993; Fishbein & Ajben, 1975; Ünlü, 2011).

Last but not least, no significant difference has been determined among the attitudes of the prospective teachers towards the teaching profession in terms of the faculty type. Upon examining the studies included in the scope of the meta-analysis, different findings have been found in the present study. Several studies have determined that prospective teachers from education faculty hold more positive attitudes towards teaching profession (Kaplan & İpek, 2002; Uyulgan & Kartal, 2012); whereas in other studies, the difference has been found in favor of those who study in the other faculties and who receive pedagogical formation education (Bağçeci, Yildirim, Kara & Keskinpalta, 2015; Ömür & Nartgün, 2013; Polat, 2013). This may be explained by the fact that the attitudes of the prospective teachers in the education faculty towards the teaching profession do not vary across grade level. In other words, whether it is teaching profession education taken in the education faculty, whether it is a pedagogical formation education program given in a short period of time about 1 year, what is significant in this process is to put the activities into practice and to determine the internal reasons of prospective teachers for teaching profession. Thus, not the quantity but the quality of the education must be revised by the universities and YÖK.

This research has been carried out through employing the meta-analysis method to obtain generalized information regarding the change of the attitude towards the teaching profession depending on the demographic characteristics. However, just as all studies, this study also has various limitations. First, the studies related to the attitude towards teaching profession have been generally considered to be in Turkey even though both national and international literature review has been performed during the meta-analysis. Second, only four demographic characteristics-gender, grade level, the presence of a teacher in the family and faculty type- have been used in the meta-analysis study. Other demographic and personal characteristics as well as reasons for being a teacher may be added in the further studies. Once for all, the current meta-analysis study aims to reveal how the attitude towards the teaching profession differs across each variable separately; nevertheless, this particular purpose ignores the

mutual or overlapping effect of the variables altogether. In this context, meta-regression studies may be included in the subsequent studies.

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## Appendices

### Appendix-1: Studies included in Meta-Analysis

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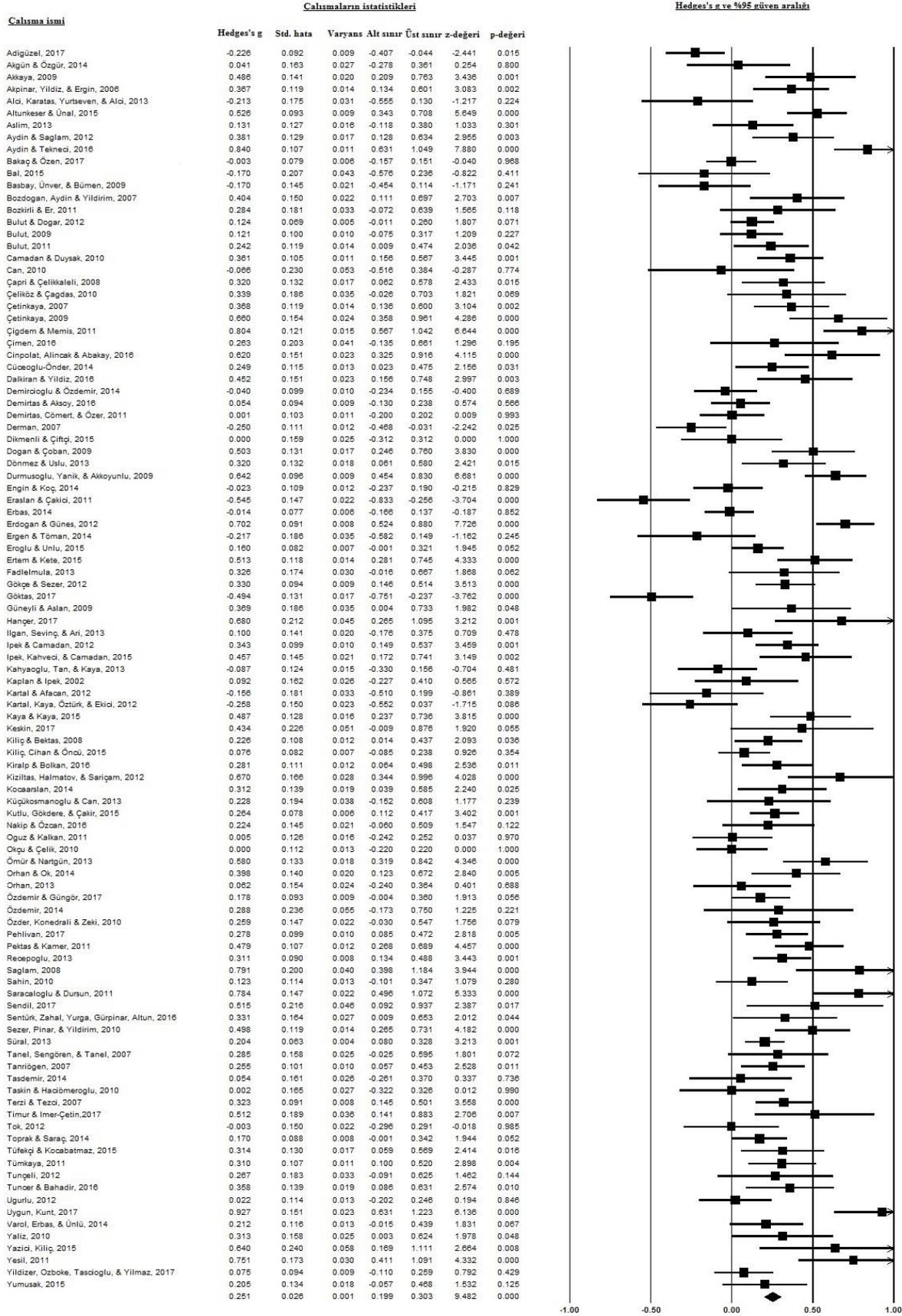
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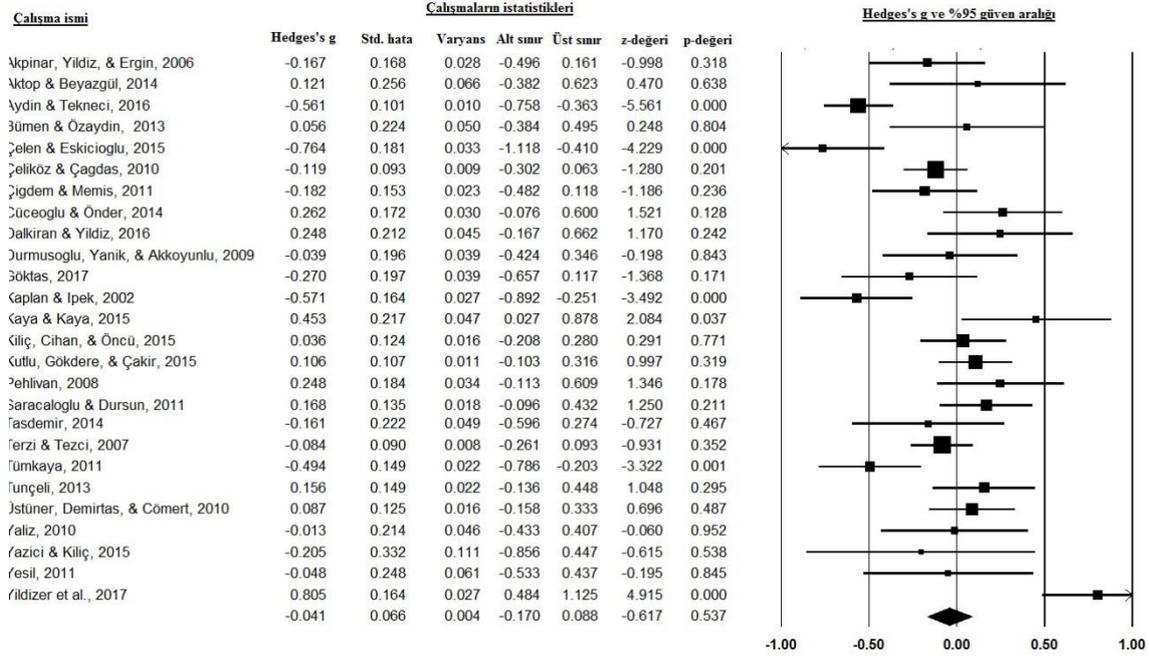
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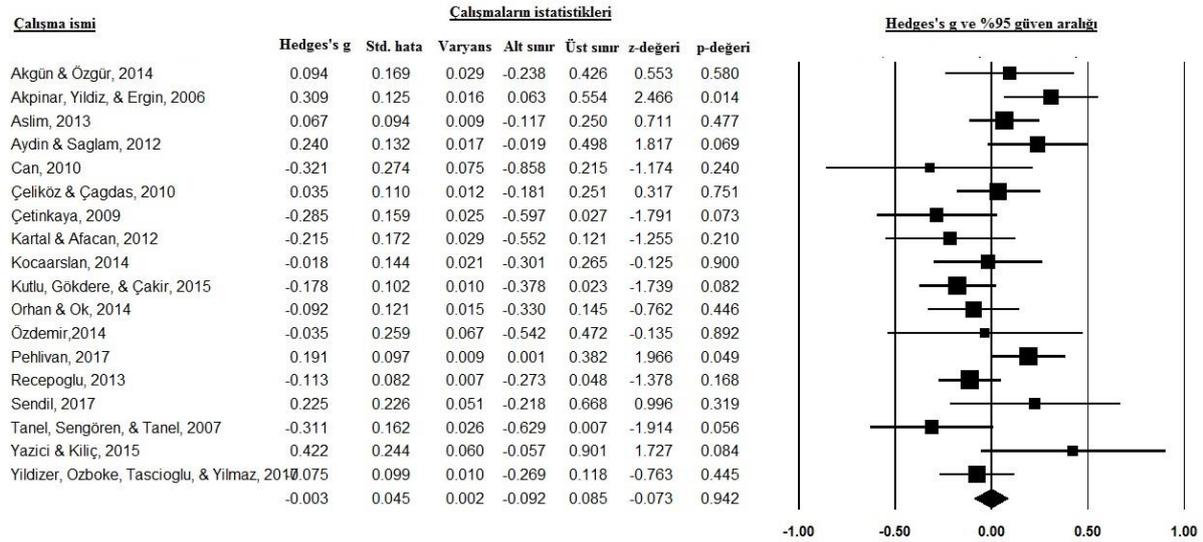
Appendix-2: Forest Diagram of Effect Sizes of Studies Including "Gender" Variable



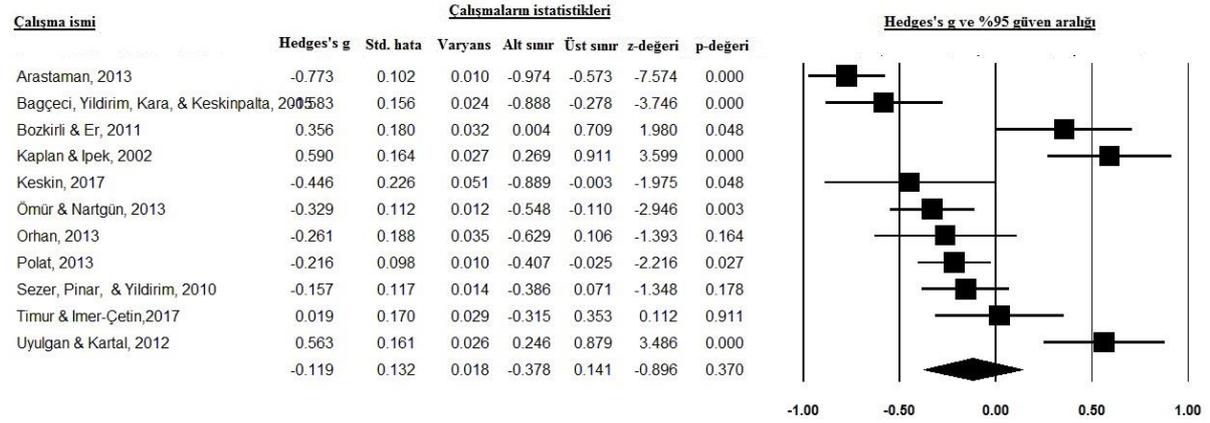
Appendix-3: Forest Diagram of Effect Sizes of Studies Including “Grade Level” Variable



Appendix-4: Forest Diagram of Effect Sizes of Studies Including “The Presence of a Teacher in the Family” Variable



Appendix-5: Forest Diagram of Effect Sizes of Studies Including "Faculty Type" Variable



III