

The Effects of Genders of Prospective Teachers on their Attitudes towards Teaching Profession: A Meta-Analysis

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ABSTRACT

One of the factors supporting the professional success of prospective teachers is their attitudes towards teaching profession. Many studies have been carried out on determining the attitudes of prospective teachers towards teaching profession. One of the main questions in those studies is to determine if the gender is effective or not. In this study, the meta-analysis was performed in order to determine the effects of gender on the attitudes of prospective teachers towards teaching profession between 2010 and 2015. As a result of database scanning, it has been seen that there were 34 publications that contain related data for meta-analysis. According to the performed analyses, it was concluded that there was no publication bias and it was required to perform analysis according to random effects model. According to meta-analysis results, the general impact level of the publications was 0.323 and they were at small size level. In other words, attitudes of female students towards teaching profession were higher than that of male students. According to the analyses from the aspect of score type of the departments, at which the prospective teachers were studying, it can be said that the differentiation by scores was significant and the attitudes of female and male students were similar in science-math scores. In analyses performed from the aspect of geographical regions of study, it was concluded that the differentiation was not significant.

Keywords: prospective teacher, attitudes towards teaching profession, meta-analysis gender

INTRODUCTION

With the increase in social expectations, there is more expectation about the quality of educational outcomes. The important factors that determine the quality of the outputs of the education are the learning-teaching process, the quality of the students and the quality of the teacher. It is undeniable fact that the teachers have effect on the quality of the educational outputs. The training of qualified teachers is one of priorities related educational for almost all countries (Furlong et al., 2009, p. 1).

One of the important factors affecting the success of teachers is their attitude towards the profession. The attitudes of the teachers affect the pleasure they receive from the profession, the dedication to the profession, the belief that the teaching is necessary and important, and the belief in the development of the profession (Güneyli and Aslan, 2009). If the prospective teachers have a positive attitude towards the profession, they can easily develop the internal motivation about teaching to their students in the future, communicate effectively with the students and spend more on individualizing and diversifying their learning situations (Andronache et al., 2014).

Authors such as McGuire (1989) and Wood (2000) argue that the attitude is formed in three dimensions; mental, affective and behavioral. Mental dimension; the perceptions, beliefs, and assumptions of personal facts and events. Emotional reactions and affective experiences of individuals and phenomena constitute the affective dimension.

The behavioral dimension is based on the estimation and inference of the way in which it interacts with facts or facts based on assumptions and beliefs (cited in Andronache et al., 2014).

The professional perceptions of the pre-service teachers about their values and attitudes, in other words, the way they perceive the profession are necessary, at least as much as the information. Teachers' attitudes towards the profession are concepts that are not clearly expressed and are shaped by the subjects taught in teaching, student, classroom environment and in general without being aware of them. These concepts significantly affect teachers' thinking processes, classroom activities, professional changes, improvements and teaching skills (Güneyli and Aslan, 2009).

The thoughts, attitudes, and priorities of pre-service teachers about the teaching profession will be effective in defeating the problems they face while continuing the profession and continuing studies. Teacher training programs have a great role in the development of the opinions of the candidates against the teaching profession.

Researches on the attitudes of prospective teachers;

- a) The effect of the gender factor
- b) The type of program they are continuing
- c) University entrance points
- d) Whether she/he is a teacher in her family
- e) Many variables such as class levels are examined.

Some of the studies in the literature can be summarized as follows:

As a result of the research conducted by İpek et al. (2015), it was observed that the attitudes of female prospective teacher towards the teaching profession were higher than male prospective teacher. As a result of the research; It was found that the positive attitude scores of the prospective teachers who were studying in the second year were higher than the fourth-grade the prospective teachers.

Altunkeser (2014) in his thesis on elementary school prospective teachers, it was found that university acceptance exam score and academic achievement are significant predictors of the attitude towards teaching profession. It was concluded that there was no significant difference between the attitudes of the prospective teachers towards the teaching profession and their gender, and there was no significant difference between the attitude towards the teaching profession and the high school graduated.

In another study, according to the mean score of the general scale, it was observed that the prospective teachers in the study group had a positive attitude towards the teaching profession in general and that the female prospective teachers' attitudes towards the teaching profession were more positive than the male. Although there was no significant relationship between the family income status and the attitudes of the prospective teachers who participated in the study, it is understood that the participants from the low-income and middle-income group have a more positive attitude towards the profession than the participants from the upper-income group (Karatekin et al., 2015).

In a study on prospective primary mathematics teacher candidates; it is observed that the students' attitude towards teaching profession is moderate level. Generally it is accepted "appropriate" level and positive for attitude towards teaching profession. Again, it was determined that there was no statistically significant difference between students' attitudes towards teaching profession according to gender variable. There is no statistically significant difference between the attitude points related to the teaching profession according to the graduated high school and the grade level of the students (Taşdemir, 2014).

According to the results of a study conducted on the 4th-grade prospective teacher of Muş University education faculty, it was found out that the prospective teachers' attitudes towards the teaching profession were highly positive. It has been concluded that the relationship between prospective teachers' attitudes towards the teaching profession and the departments they are studying is significant. However, the prospective teachers' attitude does not differ according to their gender (Kesen and Polat, 2014).

In the study conducted on the attitudes and concerns of the students of Trakya University CEIT department, it was revealed that their attitudes towards the profession were positive and above moderate level. It was concluded that the gender of prospective teachers did not have an impact on the attitudes towards the teaching profession but have an effect on their anxiety. It was determined that there was no differentiation according to class level and whether there was a teacher in their family (Akgün and Özgür, 2014).

In the study conducted on Sakarya University Faculty of Education Preschool Education program, it was found that gender and class variables did not create a significant difference on the attitudes of prospective teachers towards teaching profession and communication skills (Tunçeli, 2013).

According to the longitudinal study on the attitudes of prospective physics teachers towards the teaching profession, although there were no differences according to gender in the first measurements, it was determined that there was differentiation in favor of girls in the second measurements (Tanel and Tanel, 2013).

According to the study of the attitude of the first-year students of the Faculty of Education of Sakarya University towards the teaching profession, it was determined that there was a significant difference between the

prospective teachers' attitudes in the girls' favor. In addition, differentiation was determined according to the programs; Computer Education and Instructional Technology Education, Science Education, Elementary Mathematics Education. It was concluded that the opinions of the students studying in Primary School Teaching, Social Studies Education, and Preschool Education diverged from each other (Gür Erdoğan and Zafer Güneş, 2012).

In the study on the attitudes of the first and fourth grade pre-service teachers studying at Uludağ University towards the teaching profession, it was determined that there was no difference according to the grade level and graduation type of high school. However, it is concluded that there is a difference in favor of girls according to their gender. There was no significant difference between the economic status of teachers' teachers and attitudes towards teaching profession (Gökçe and Sezer, 2012).

Artvin Çoruh University Faculty of Education Department of Primary School Teacher Education in the 1st, 2nd, 3rd and 4th year of the study conducted with a total of 192 university students according to the gender, grade level and graduated from the type of high school teacher candidates determined that there was no significant difference in attitudes. (Açıslı and Kolomuş, 2012).

According to the results of the study conducted on the attitudes of the prospective teachers in the classroom teaching of Cumhuriyet University, it was determined that the prospective teachers' attitudes were moderate and high, and there was a difference in favor of girls. Besides, it was determined that there is differentiation according to grade level but there is no differentiation according to income level (Uğurlu and Polat, 2011).

Gazi, Ahi Evran and Kastamonu University science teachers' attitudes towards teaching profession in the study on the attitudes of prospective teachers were determined to be at a moderate level. According to the analysis made by gender, there was a significant difference in favor of female students. It also varies according to the type of high school graduated. It is observed that the difference is between Anatolian Teacher High School-Anatolian High School (in favor of Anatolian Teacher High School) and Anatolian High School-General high school (in favor of Flat High School) (Pektas and Kamer, 2011).

According to the results of the study on the relationship between the attitudes of education faculty students towards the teaching profession and their anxiety levels, their attitudes were found to be positive, their anxiety levels were low and there was a low negative and significant relationship between attitude and anxiety. It was determined that the gender of the pre-service teachers was effective on the attitudes and that the attitudes of the girls were more positive (Doğan and Çoban, 2009).

According to the results of the study conducted on the attitudes of the teacher candidates studying in Inonu University Faculty of Education towards the teaching profession, it was determined that the attitude of teacher candidates did not change according to the gender and the program they continued (Üstüner et al., 2009).

The attitudes of Turkish teacher candidates studying at the last year of the Turkish Language Teaching Department of the Faculty of Education of Dokuz Eylül University were found to be high. In addition, it was concluded that the attitudes of girls' teachers and those of teachers in their families were higher. However, it is determined that the graduated high school type has no effect on attitude (Çetinkaya, 2009).

In the study conducted on the prospective Turkish teachers studying at the Department of Turkish Language Teaching of Gazi University Faculty of Education, it was determined that the attitudes of the prospective teachers were generally positive, and they liked the profession (Temizkan, 2008).

It has been determined that there are many studies positive and high in evaluating the prospective teachers' attitudes in general (Akpınar et al., 2006; Çetinkaya, 2009; Andronache et al., 2014; Kayan Fadlemula, 2013; Caglar, 2013; Baykara Pehlivan, 2008; Baykara Pehlivan, 2010; Akbulut and Karakus, 2011). It is seen that high attitudes of prospective teachers will provide professional satisfaction (Taşdemir, 2014) and promising in terms of the teaching profession (Kesen and Polat, 2014). However, it is stated that the prospective teachers' attitudes are low (Kahyaoğlu et al., 2013).

In general, there is a perception that the teaching profession is a suitable profession for women (Yaman et al., 2001; Özyurt and Eren, 2014). The teaching profession is seen as a profession that is suitable for women and a state guaranteed. In addition, although the profession of teaching is seen as a woman profession, the negativity of women in business life is perceived differently by society (Polat et al., 2015). Therefore, in many studies, it was examined whether gender had an effect on attitudes towards teaching. According to the results of the study that the gender is not effective (Hacıömeroğlu and Şahin Taşkın, 2010; Can, 2010; Üstüner et al., 2009; Dinçer and Yılmaz, 2015; İltar and Köksalan, 2011), although there are studies, girls have a more positive attitude. (Akpınar et al., 2006; Cetinkaya, 2009; Capa and Cil, 2000; Duatepe and Akkus-Kapla, 2004; Gurbuz and Kisoglu, 2007; Caglar, 2013; Kiziltas et al., 2012; Güneylı and Aslan, 2009; Gürbüz and Kışoğlu, 2007). In some studies, it was determined that male pre-service teachers have a more positive attitude (Eraslan and Çakıcı, 2011; Çapa and Çil, 2000).

Regarding the programs they are continuing, differentiation is effective according to the programs they study (Şahin Taşkın and Hacıömeroğlu, 2010; Gökçe and Sezer, 2012; Gür Erdoğan and Zafer Güneş, 2012) and Şahin Taşkın, 2010; Üstüner et al., 2009; Bozdoğan et al., 2007). In these studies, it was determined that all of the

prospective teachers had high attitudes, but the candidates in some programs had higher attitudes. It is not possible to go to any generalization in different programs. Studies on university entrance scores were conducted according to departments rather than studies on score types. When we look at the studies in general, the selected departments of the selected university are the preferred studies (Tümkiye, 2011; Korkmaz and Usta, 2010) and there are studies in which certain groups of students in different universities are preferred (Altunkeser, 2014; Aydın and Sağlam, 2012).

According to the results of some research (Çağlar, 2013; Aydın and Tekneci, 2013; İpek and Camadan, 2012; Tok, 2011), it is determined that the level of the classroom is effective, while there is no differentiation according to the grade level (Gökçe and Sezer, 2012).

In the studies conducted on whether there is a teacher in her family, it is expected that the parents of the teachers will show a more positive attitude towards teaching (Source). There are studies (Aydın and Sağlam, 2012; İltir and Köksalan, 2011).

Studies on whether gender effect differs according to departments could not be reached. In general terms, studies on gender attitudes towards the teaching profession have not been found. Independently, a meta-analysis study is needed to determine the effect of gender on attitudes toward the teaching profession.

META-ANALYSIS

Meta-analysis is the analysis of the results of many researches in order to integrate the findings (Ellis, 2010, pp. 94-95). Meta-analysis is a technique used to synthesize research (Borenstein et al., 2009; Littell et al., 2008). It is basically a combination of individual research data to find answers to a specific research question (Borenstein, Hedges et al., 2009).

Meta-analysis is generally criticized for the fact that apple and pear cannot be combined, there will be publication bias and a combination of good and bad publications. In the meta-analysis literature, it is emphasized that the answer to criticism is correct if the research question is the counting of the fruits (Üstün and Eryılmaz, 2014; Rosenthal and DiMatteo, 2001).

In order to combine the meta-analysis studies, the effect size is calculated for each study. Effect size is the strength and direction of the relationship between two variables and defines it as currency in a meta-analysis (Borenstein et al., 2009; Littell et al., 2008).

Meta-analysis work has a process to be meticulously followed because it is based on systematic data collection. This process consists of the following stages:

1. Defining dependent and independent variables
2. Systematic collection of primary studies and selection of each study carefully
3. Making the heterogeneity test on the obtained data
4. Calculation of impact sizes and combining studies according to central tendency
5. Determining the level of significance of central tendency, using fixed and random effect models
6. Evaluation of the significance of the average effect size

In Turkey, studies on the attitude of prospective teacher towards the profession of teacher were conducted. One of the main independent variables in this study was to examine whether gender has an effect on attitudes (Üstün and Eryılmaz, 2014; Rosenthal and DiMatteo, 2001).

In this context, the accuracy of the following hypotheses was tested by the meta-analysis method:

1. H0: Girls' attitudes towards teaching profession do not differ according to men.
2. H0: There is no effect on the attitude of gender to teaching according to the entry score types (Mat-Science, Mat-Turkish, Social Sciences) of the programs where prospective teachers are studying.
3. H0: Gender has no effect on attitudes towards teaching according to geographical regions where the study sample is located.

METHOD

This study is based on meta-analysis. The meta-analysis study is based on the generalization of quantitative studies.

Data Collecting

The National Thesis Center, Ulakbim Database, and Scholar Google database were searched for answers to the research question. The screening study was started on November 13, 2015 and the last screening was made on 21 December 2015. The search was made with the keywords "Teacher Candidates" and "Teachers' Attitude". At the end of the study, 58 theses and 258 articles were obtained. Later publications;

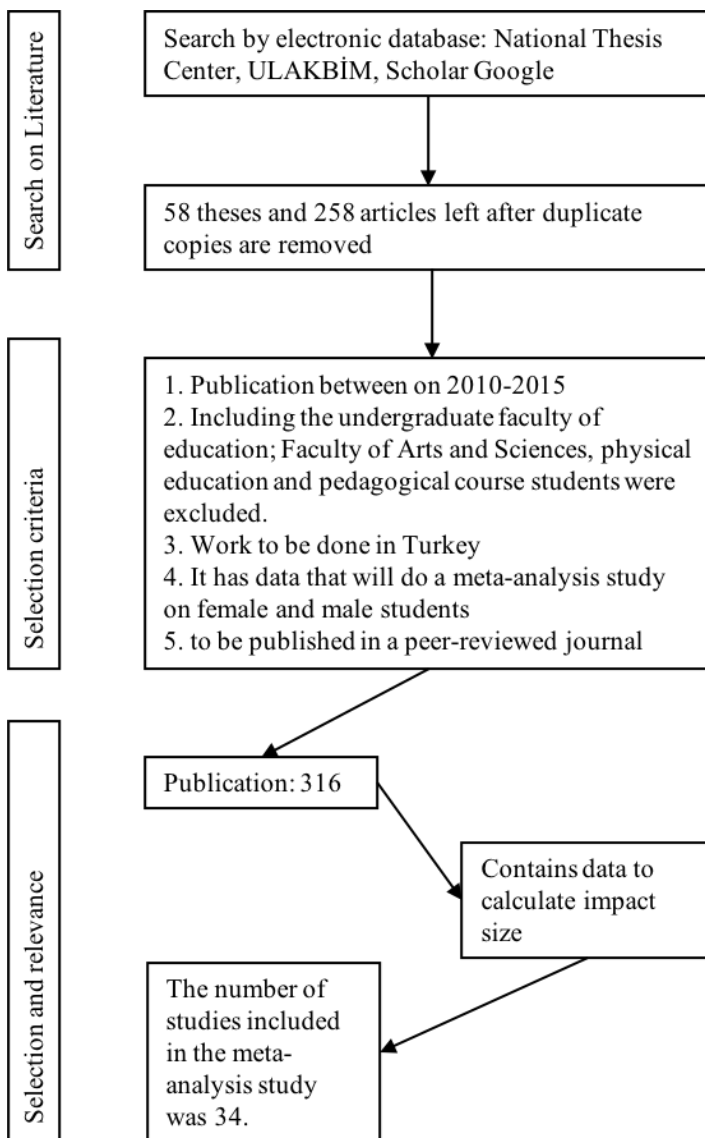


Figure 1. Literature Review and Process of Adding Meta to Analysis

- a) The publication date is between 2010-2015
- b) The education faculty includes undergraduate students; (Faculty of Arts and Sciences, Department of Physical Education and Pedagogical Courses students are excluded.)
- c) to be held in Turkey
- d) Publications should have data related to meta-analysis of female and male students
- e) To be published in a refereed journal

It was decided that 34 publications were suitable for meta-analysis. The appropriateness of these publications was examined by 2 other researchers.

Data Analysis

A comprehensive meta-analysis ® program was used for effect size. It was decided to use standardized averages due to the use of different measurement tools and different measurement units in the studies. Therefore, Hedges Dis g value was calculated for each study (Rosenthal and DiMatteo, 2001). The reliability value was accepted as 0.05 in the studies.

$$\text{Hedges's } g = \frac{M_1 - M_2}{S_{pooled}}$$

The simplest and most common approach to assess whether there is heterogeneity among studies is the $(k-1)$ chi-square heterogeneity test (Q statistic) proposed by Cochran. The heterogeneity test tests the null hypothesis that all studies evaluate the same effect (Higgins et al., 2003).

In combining different effect sizes with meta-analysis; The meta-analysis model to be used is important. At this point, it is possible to talk about two types of meta-analysis models. The first one is the fixed effect model and the

Table 1. Thalheimer and Cook Effect Size Classification

Classifications	Min.	Max.
Unimportant	-0,15	0,15
Small	0,15	0,40
Moderate	0,40	0,75
Large	0,75	1,10
Very large	1,10	1,45
Superb	1,45	+

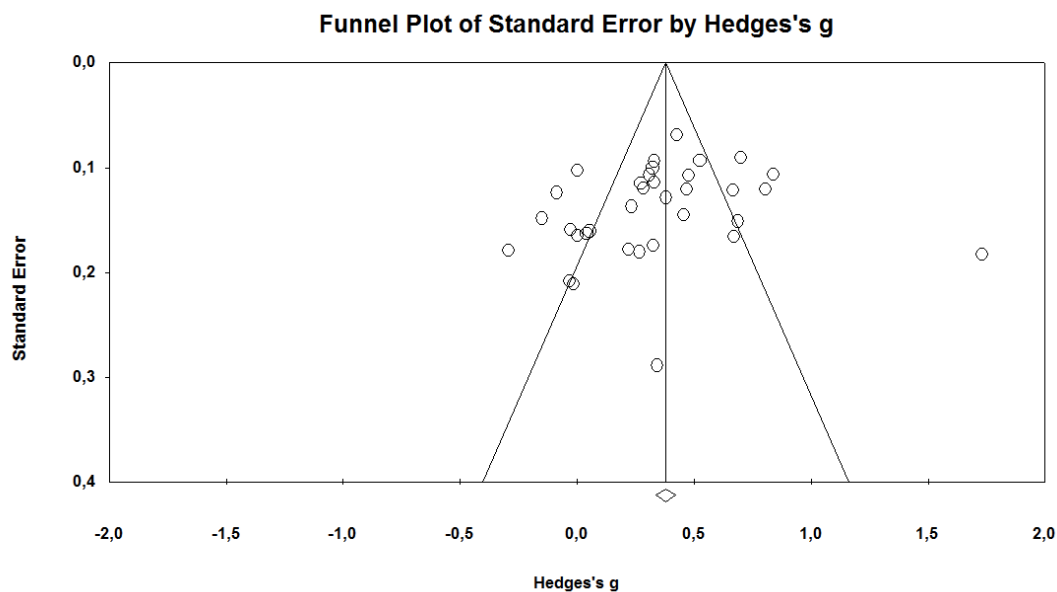


Figure 2. Funnel Plot of Standard Error by Hedges's g

second one is the random effect model. The fixed effect model has the assumption that the universe effect sizes do not change in the studies included in the meta-analysis. Therefore, the standard deviation of the universe effect sizes for all studies is equal to zero. In the random effect model, it is assumed that the universe effect sizes vary from study to study. Hence the standard deviation of universe effect sizes for all studies is different from zero (Ellis, 2010; Borenstein et al., 2009).

Moderator Variable

The number of student admissions grade for the undergraduate programs of the prospective teachers; there are researches on the effect of gender on students' job choices. In the studies carried out, the programs are differentiated, and it is examined whether there is a moderator effect on the types of score for grouping. As another moderator variable, the geographical region of the researched university was examined.

Effect Size Classification

Cohen d, whose effect size classification is calculated, relates to the interpretation of Hedges's g values. The more detailed classification (Thalheimer and Cook, 2002) is given in **Table 1.** (cited in Aydın et al., 2011).

Outliers Analysis and Publication

The Funnel Diagram (**Figure 2**) was omitted to determine the bias of the publications included in the study in terms of effect and sample size.

It was partially symmetrical on the basis of the axis according to the effect size and the diagram drawn according to the standard error. Since it is not decided as a whole by looking at the drawn diagram, it should be done in different analyzes. Kendall tau value was calculated for this. The tau value was calculated as -0,184 ($z = 1,527$ $p = 0,127$). According to these results, it can be said that there is no publication bias.

FINDINGS

In the presentation of the findings of the study, firstly, after the descriptive information is presented, meta-analysis findings related to the general impact calculation will be presented. Then, the analyses made according to

Table 2. Descriptive Distribution of Selected Publications

Moderator Variable	N	Percentage
Region		
Mediterranean	3	8,8%
Eastern Anatolia	7	20,6%
Aegean	4	11,8%
Southeastern Anatolia	1	2,9%
Central Anatolia	5	14,7%
Black Sea	5	14,7%
Marmara	7	20,6%
Mixed	2	5,9%
Grade		
1- Math-Science	9	26,5%
2- Social Sciences	3	8,8%
3- Math- Turkish	11	32,4%
4- Others	11	32,4%
Year		
2010	9	26,5%
2011	6	17,6%
2012	6	17,6%
2013	6	17,6%
2014	4	11,8%
2015	3	8,8%

Table 3. Distribution of Publications by Thalheimer and Cook Effect Size Classification

Classifications	N	Percentage
Unimportant	9	26,5%
Small	13	38,2%
Moderate	8	23,5%
Large	3	8,8%
Very Large	0	0,0%
Superb	1	2,9%
Total	34	100,0%

Table 4. Effect size and homogeneity test by fixed and random effect models

Model	n	Z	P	Q	Effect Size Mean	%95 Confidence interval Min- Max
Fixed Effect	34	17,597	0,000	202,743	0,379	0,337-0,421
Random Effect	34	6,331	0,00		0,347	0,240-0,455

the entry grade of the department where they study from the moderator variables will be presented. In the last section, analyzes will be made according to geographical regions of the universities.

When the geographic regions of the province where the universities were studied, most of the study was done in Marmara and Eastern Anatolia regions (20%) (see [Table 2](#)). The least study was conducted in the Southeast Anatolia region. In the distribution according to the score types of the departments, the most studies were carried out in different types of points, and then in the Equilibrium points (such as classroom teaching). The least study was conducted in verbal score types (Turkish Language Teaching). When we examine the years of publications, it is seen that the publications decreased compared to the years. The number of publications available in 2015 is three.

In the classification of effect size of publications, it was found to be 13 small “with 38.2% and then 9 publications unimportant level, 8 publication moderate level and 3 publications large level. There are 1 publication with superb. The majority of the studies have a minor and small effect size.

For the general effect calculation, the heterogeneity test for the selection of the model to be used was calculated as 202.743 and the p-value was calculated as 0.00. The random effect model was used because the value of 33 degrees of freedom and 95% significance level was greater than Q value in the chi-square value range table. The overall effect size was calculated as .323 within the limits of 0.240 and 0.455. Accordingly, when we evaluated in general, a meaningful result in favor of girls. In other words, it can be said that girls' attitudes towards teaching profession are higher than males.

According to the Z test performed to determine the significance of the Hedges g values calculated according to the random effect model, it can be said that the difference in effect size was significant since $p < 0.05$ was found in 19 studies (Baykara Pehlivan, 2010; Pektaş and Kamer, 2011; Tümkaya, 2011; Aydın and Sağlam, 2012; Gökçe and Sezer, 2012; Gür Erdoğan and Zafer Güneş, 2012; Kızıldağ et al., 2012; Aydın and Tekneci, 2013; Çağlar, 2013; İpek et al., 2015; Karatekin et al., 2015; İter and Köksalan, 2011; Uğurlu and Polat, 2011), but because it was $p >$

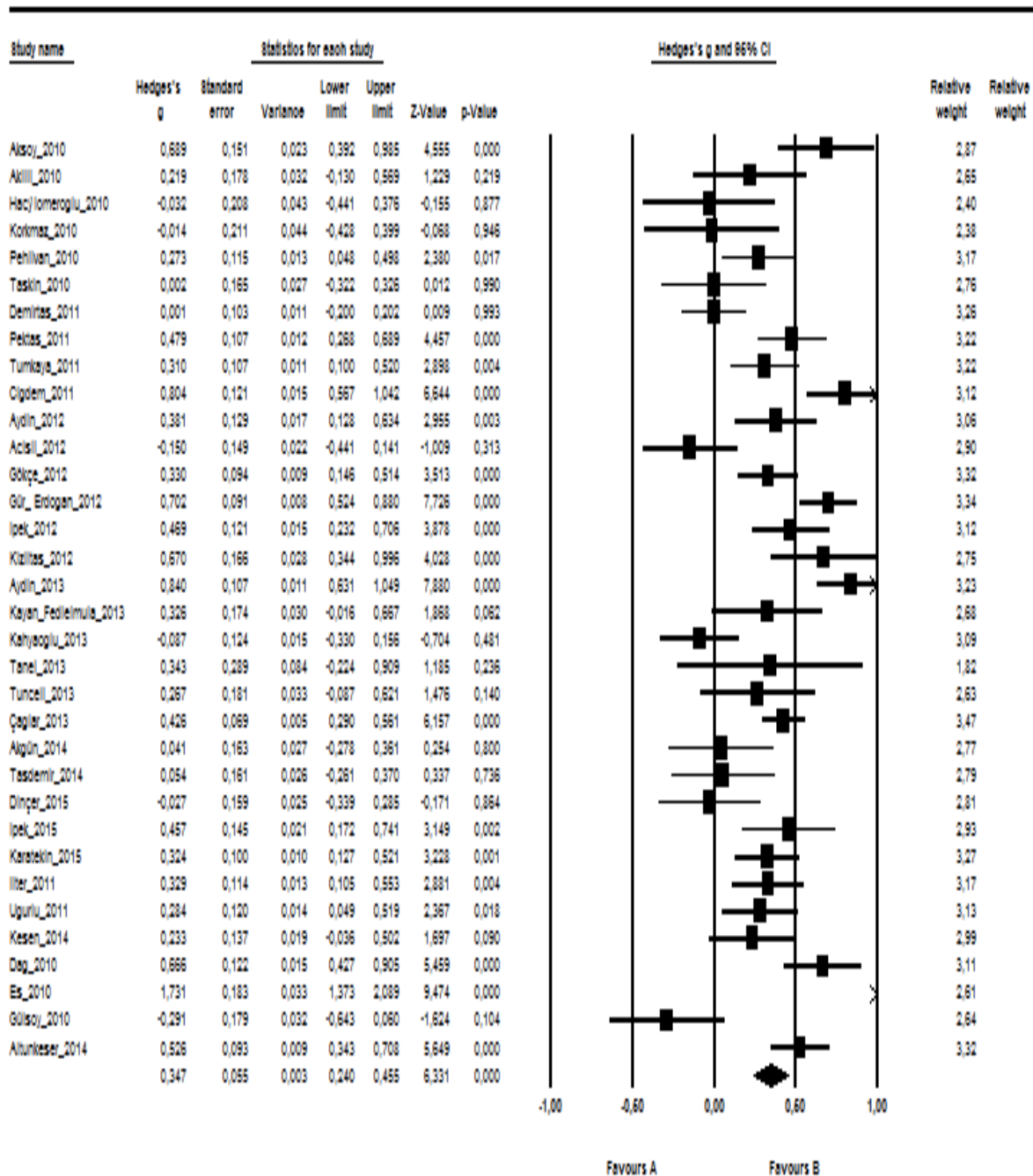


Figure 3. Meta-analysis Diagram of the Effect of Studies (Forest Plot)

0.05 in 15 publications (Hacıomeroglu and Şahin Taşkın 2010; Korkmaz and Usta, 2010; Şahin Taşkın, 2010; Kayan-Fadilemula, 2013; Kahyaoglu et al., 2013; Tanel and Tanel, 2013; Tunceli, 2013; Akgün and Özgür, 2014; Taşdemir, 2014; Dinçer and Yılmaz, 2015; Kesen and Polat, 2014), it was not statistically significant. The z-test calculations performed to determine the statistical significance of the effect size in the random effect model were found to be $z = 6,336$ and $p = 0,000$. According to this result, meta-analysis results are statistically significant. When we look at the weight of the publications on the impact value of the Kızıtaş et al. (2012) publication with 3.75% of the highest impact, while the most impact of 1.79% was the publication of Tanel and Tanel (2013).

In order to determine the joint effect size of the publications in each group, it was determined that the Q values were greater than the critical value and the p values were less than 0.05 (Table 5). In this respect, it was decided to analyze each subgroup according to the random effect model. When grouping by score types, there are 9 publications in the numerical group and the overall effect size of these publications is calculated as 0.171. Z (1,438) and p (0,151) values were calculated for the significance of the effect size. According to these results, it can be said that gender has no effect on attitudes towards teaching. However, the effect value was 0.488 and z (2,513) and p (0,012), respectively. Similarly, the effect size was 0.531 and 0.280, respectively. The effect size value was significant

Table 5. Results of the Analysis of Teacher Candidates According to Score Types

Score types	Publication Number	Effect Model	Average Effect Size	%95 Confidence Interval	Z Value	P Value	Classification
Math-Sciences	9	RE	0,129	-0,047 - 0,304	1,438	0,151	-
Social Sciences	3	RE	0,488	0,107 - 0,870	2,513	0,012	Moderate
Math-Turkish	11	RE	0,544	0,329 - 0,759	4,966	0,000	Moderate
Mixed	11	RE	0,281	0,122 - 0,439	3,476	0,001	Small

Table 6. Analysis Results by Geographical Regions

Region	Publication	Model	Effect Size Meab	%95 Confidence Interval	Z Value	P Value	Classification of effect size
Mediterranean	3	SE	0,337	0,191 - 0,843	4,520	0,000	Small
Eastern Anatolia	7	RE	0,190	0,011 - 0,369	2,085	0,037	Small
Aegean	4	RE	0,320	0,008 - 0,633	2,008	0,045	Small
Southeastern Anatolia	1	SE	0,426	0,290 - 0,561	6,157	0,000	Moderate
Central Anatolia	5	RE	0,555	0,114 - 0,996	2,468	0,014	Moderate
Black Sea	5	RE	0,458	0,147 - 0,769	2,887	0,004	Moderate
Marmara	7	RE	0,167	-0,101 - 0,434	1,222	0,222	-
Mixed	2	RE	0,679	0,371 - 0,986	4,325	0,000	Moderate

because of $p < 0.05$ for both groups. Verbal, Equal weight score types and programs that accept students with higher attitudes towards teaching girls can be said to be higher. In these groups, the effect values are moderate. In the mixed studies, it was concluded that female students' attitudes were more positive than male students. This situation also overlaps with the general evaluation. The difference between Q_b (9,598 df 3) and p (0,02 < 0,05) values was significant in order to determine the significance of the effect size difference between the types of points. That is, the numerical group differs from the others.

In order to examine the moderating effect of the regions, heterogeneity test was firstly examined, while in the Mediterranean and Southeastern Anatolia regions a constant impact model was preferred due to $p > 0.05$. In other regions and mixed research, calculations were made according to random effect model. The total effect size of the 3 publications in the Mediterranean region was calculated as .337 and $p < 0.05$ because it was found that the attitudes of female students towards teaching were higher in the samples in the Mediterranean region than in men. 7 publications were made in Eastern Anatolia. The effect size was calculated as 0.190 and $p < 0.05$. The effect size calculation was statistically significant. Similarly, the calculated average effect size values of the regions are at a level of significance as they are calculated as $p < 0.05$ in Aegean, Southeastern Anatolia, Central Anatolia, Black Sea and more than one region (Mixed). However, since it was calculated as $p > 0.05$ in the Marmara region, it was determined that the differentiation of 7 studies in this region was not statistically significant. In other words, it can be said that gender has no effect on teacher attitudes in the studies conducted in Marmara region. In the comparison of regions, Q_b (11,798 df = 7) and p (0,11 > 0,05) were calculated as the difference between regions is not statistically significant.

RESULTS

The most publications were made in Marmara and Eastern Anatolia regions. The least number of publications were made in Southeastern Anatolia. Even when working in mixed considered to be made in a maximum of two geographical regions of Turkey are needed to make the overall operation. When examined according to regions, it can be assumed that the attitudes of female and male teacher candidates in the Marmara region are the same. In other regions, there is a significance in favor of girls. There is no differentiation according to the geographical regions where the studies are conducted.

Most of the study was conducted with Equal Weight Score in the field programs and the least in the verbal programs. When studies on programs that accept students in different types of points are carried out, it is necessary to analyze whether gender has an effect on the attitude, not only on the basis of the programs, but on the basis of the programs.

According to years, the number of studies is decreasing. Considering the change of social structure, studies should be continued in order to determine whether the teacher candidates' attitudes change or not, and also longitudinal studies are needed. In addition, it can be done that the teacher candidates' attitudes changed after they started teaching.

The majority of publications have a small impact level. The average effect size is 0.3323 and has a small effect level. In studies included in the analysis, the effect size in significant studies in favor of girls or boys will be calculated and included in publications and will help researchers in future studies and meta-analysis studies.

It is significant that teacher candidates differ according to the types of programs they study. The attitudes of female and male students do not differ in the programs that accept students according to the numerical score type. Semerci and Semerci (2004), Turkey has also reached the conclusion that the teachers change in his work on the physical education teachers across the division by gender attitudes. Çapri and Çelikkaleli (2008) In his study at Mersin University, gender was found to be significant in girls' favor and the effect size was moderate. This study coincides with the results. In a meta-analysis study conducted by Kubiato and Arik (2014) on the theses made after 2001, it was determined that gender had a significant difference in favor of girls and the mean effect size was small.

This study was conducted with prospective teachers in Turkey. In different countries it can be studied to determine whether there are similarities with other countries. In addition, the study may be repeated after a certain time to determine if there is a change in the attitudes of the prospective teacher candidates over time. Another point is that meta-analysis can be done by finding sufficient studies for other groups (Science and Art Faculty and Pedagogical Courses students) not included in the study.

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