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The Effects of Teacher Relationships on Student Academic Achievement: A Second Order Meta-Analysis

Erkan Göktaş*

Educational Sciences, Selçuk University, Konya, Türkiye

ORCID: 0000-0002-3150-0142

Metin Kaya

Educational Sciences, Bayburt University, Bayburt, Türkiye

ORCID: 0000-0002-8287-4929

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This study aims to determine the correlational effect sizes between teacher relationships and student academic achievement. Teacher relationships were categorized as intrapersonal and interpersonal relationship types. Intrapersonal and interpersonal relationships are directed at different individuals. Intrapersonal relations refer to the inner life and thoughts of a teacher which are effective on the way of teaching and human relations. Interpersonal relations refer to social links between a teacher and the other people of the school community. The method of the study is second order meta-analysis. In this method, effect sizes of the first order meta-analyses are combined to get an average effect size score. Totally, 17 eligible first order meta-analyses are included in the study. The findings indicate that the correlational effect size between a positive teacher intrapersonal relationship and student academic achievement is positively small, positive teacher student relationship and student academic achievement is positively medium, a positive teacher school community relationship and student academic achievement is positively at a very large level. Also, correlational effect size representing a negative teacher intrapersonal relationship and student academic achievement is negatively medium, a negative teacher student relationship and student academic achievement is negatively small. As for moderator analyses, the variance of the effect sizes is statistically significant according to the positive relationship types and the publication types. In light of the findings some suggestions were made to improve teacher and school community relations that may help teachers and students to be more successful.

Introduction

Student academic achievement is affected by personal characteristics, study methods and the relationships established with teachers. Schools are institutions where human relations are intense. For this reason, relationship management is becoming increasingly important in

* Correspondency: erkamgoktas@gmail.com

schools. The teacher's relationship is at the center of basic human relations in schools. Teachers' relations with themselves and with school stakeholders including student, teacher, colleagues, and principals are crucial for school performance. Teachers' relationship with students, colleagues, administrators and parents, effect educational processes due to its quality (Stephanou, 2014; Stephanou & Doukeridou, 2020).

In recent years, teacher relationships have been examined from different aspects. Teacher efficacy and student achievement (Çoğaltay & Karadağ, 2017; Eells, 2011; Kim & Seo, 2018), professional teacher communities and student achievement (Lomos, Hofman & Bosker, 2011), students' characteristics and teacher's instructional interactions (Nurmi, 2011), teacher's effect on engagement and achievement (Roorda & Koomen, 2011), teacher's clarity and learning (Titsworth, Mazer, Goodboy, Bolkan, & Myers, 2015), teacher's expectations and achievement (Danişman, 2017), teacher's autonomy and academic outcomes (Hooper, 2018), teacher's leadership and student achievement (Shen, Wu, Reeves, Zheng, Ryan, & Anderson, 2020; Uysal & Sarier, 2018), teacher and student interactions (Vandenbroucke, Spilt, Verschueren, Piccinin & Baeyens, 2018), teacher's personality, burnout and achievement (Kim, Jörg, & Klassen, 2019; Madigan & Curran, 2020), students' school adjustment (Roorda, Zee & Koomen, 2020), teacher academic optimism and achievement (Ateş & Ünal, 2021) and teacher support and academic achievement (Tao, Meng, Gao & Yang, 2022) studied by the researchers. These studies examined the relationship types of teachers in an analytical framework. However, this study examines teacher relationship and student academic achievement with a more holistic approach. The teacher relationships have several sub dimensions such as teacher-student relationships, teacher colleague relations, teacher principal relations, teacher personality, teacher self-efficacy and teacher burnout. Determining the sub-dimensions which are effective on achievement is crucial. Findings of this study are important to guide teachers developing effective school community relations.

Teacher Relationship Types

In this study, teacher relationship types categorized as intrapersonal and interpersonal relationship types. Intrapersonal relationships are relating to the inner life and thoughts of a teacher. Interpersonal relationships are related to the relations between a teacher and the other people of the school community. Teachers' interpersonal relations considered as teacher student relations and teacher school community relations.

Intrapersonal relationships

Teacher's intrapersonal relationship type refers to the self-related qualities. Self-efficacy, positive and negative self-perception and interactions are taken into consideration. On this aspect teacher personality, self-efficacy, and teacher burnout considered as personal specifications may be effective on student achievement. Positive intrapersonal relations may increase student's achievement. On the other hand, negative relations may affect achievement negatively.

Teacher personality: Refers to features of a teacher that affect the way of teaching via ideas, emotions, and actions (Pervin, Cervone, & John, 2005). The personality of teachers can affect both themselves and their social relations. Teachers who love to interact with people and have strong social bonds are expected to be able to establish positive relationships with themselves and their environment.



Teacher self-efficacy: Teachers who can activate and affect unwilling students to achieve the goals required to get a learning degree are self-efficient (Tschannen-Moran & Woolfolk Hoy, 2001). Self-efficient teachers believe in their potential to succeed. They can also inspire their students.

Teacher burnout: Describes psychological tiredness and unwillingness to perform teaching activities observed as fatigue, pessimism, and decreased efficacy (Maslach, Jackson, Leiter, Schaufeli, & Schwab, 1986). It is possible to encounter signs of burnout in personality structures prone to stress and introversion. The personality of the teacher directly affects this situation. Therefore, these personality traits of the teacher will have an impact on both the relations with the environment and the academic success of the student.

Interpersonal relationships

Teacher's interpersonal relationship type contains teacher-student relation and teacher-school community relation. Positive interpersonal relationship expected to increase student's achievement. On the other hand, negative relations may affect achievement negatively.

Teacher-student relationship: In school context, teacher-student relationship is effective on students' civic learnings and becoming a democratic citizen. Students' happiness, sense of well-being with the relationship are critical to develop a positive identity (Chhuon & Wallace, 2014). Effects of teacher-student relationships can be positive or negative on the achievement. Positive teacher-student relationships are described as high intimacy and low conflict and dependency. Conversely, negative relationships are described as low intimacy and high conflict and dependency (Hughes, 2011; Pianta, 2001; Pianta & Stuhlman, 2004). Establishing positive relationships becomes easier when teachers pay close attention to their students. Negative relationships develop when they do not take care of their students properly. Emotionally supportive teacher-student interactions help students to express their social, sentimental, and academic needs. Finding effective ways of classroom organization and management of classroom circumstances is related to this type of interactions and practices (Allen, Gregory, Mikami, Lun, Hamre & Pianta, 2013; Hafen, Hamre, Allen, Courtney, Gitomer & Pianta, 2015). Emotional dimension should not be missing in teacher-student interactions. Students should be able to receive messages of love, appreciation, and value from their teacher.

Teacher-school community relationships: Teachers live in a school community in which human interactions take place. Members of this community, namely, teachers, students, school leaders and parents have common achievement labeled goals and purposes to be reached. Achieving the goals and purposes causes an academic expectation which causes academic press (Shouse, 1996). The important components among the stakeholders of the school are teachers, students, and administrators. They need to work together to fulfill the common goals. Thus, it is possible to achieve both individual and institutional success. However, to achieve these goals, the parent factor, which influences students, should also be as it has an impact on the student's life.

Teachers are professionally learning from their colleagues rather than experts (Kilduff & Tsai, 2003). Informal relations of a teacher with the colleagues may create a sense of commitment and support that causes professional and instructional development. Colleagues can also influence the teacher's teaching methods and techniques.

School principals manage school personnel and foster a positive school climate. The principal can encourage and support teacher co-operations in the school as a manager. Creating supportive conditions such as steady and adequate time of coaction, trust and a positive ambiance can nurture teachers' motivation to co-operate (Vangrieken, Dochy, Raes & Kyndt, 2015). School principals can lead teachers and students to be successful by establishing positive learning environments and effective educational management behaviors.

Positive teacher-parent relations may help teachers being efficient and therefore make them able to establish and exert positive relations with their students (Chung, Marvin, & Churchill, 2005). Teachers can learn more about their students by establishing positive relationships with the parents. Teachers who have developed positive relations with parents and students may improve their course presentation method and effective teaching skills. So, the success of both students and teacher increases.

Purpose

The aim of this study is to determine the correlational effect sizes between teacher relationship types and student academic achievement. To this end, answers to the following questions were searched.

- (1) What is the relationship between teacher relationship types and student academic achievement?
- (2) Does the relationship between teacher relationship types and student academic achievement differ according to the moderator variables?

Method

This study is a second order meta-analysis methodologically. Second order meta-analysis is a method used to synthesize the findings of first order meta-analyses (Oh, 2020). While the findings of primary studies are synthesized in the first order meta-analysis, the findings of meta-analytic studies are synthesized in the second order meta-analysis (Schmidt & Oh, 2013). In this method, effect sizes of the first order meta-analyses are combined to get an average effect size score.

Data collection

The meta-analyses included in this study were accessed from electronic databases which are Web of Science, Scopus, ERIC, Academic Search Ultimate, PsycNet, Google Academic, ProQuest and Open Dissertations. During the search process, the keywords "achievement or success or educational performance, school performance, student performance, academic performance, learning performance, teacher performance or educational outcomes, school outcomes student outcomes, academic outcomes learning outcomes or teacher effectiveness or teacher effectiveness or meta-analysis or meta-analytic" were used to reach the studies. Various inclusion criteria have already been developed for the purposes of this study. According to these inclusion criteria, first the title parts of the studies and then the summary parts were examined. Since the 2010s, researchers have focused on teacher behaviors and the academic achievement of the student. For this reason, it is preferred that the studies to be included in the analysis were carried out between 2010 and 2022. Based on these investigations, 21 studies met the inclusion criteria. After a thorough examination of the data pool, two studies were excluded. One of the problems encountered in second-order meta-analyses is the overlapping between meta-analyses (Cooper & Koenka, 2012). The



study of Klassen, & Tze (2014) and Kim, & Seo (2018) overlapped. For the appropriateness, the latter was chosen. Thus, the final data set contained 17 studies. The data flow chart model of the preferred studies is illustrated in Figure 1.

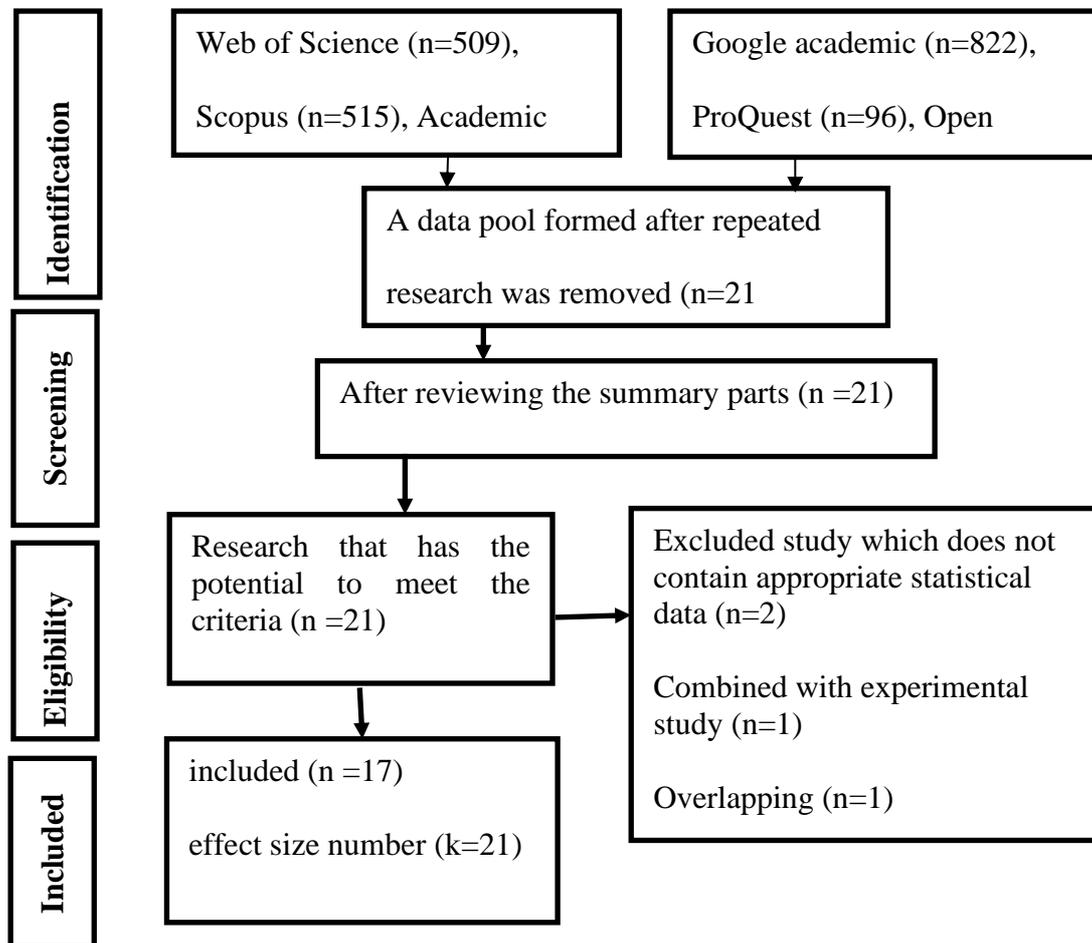


Figure 1. Selection and exclusion model of the studies

Inclusion criteria

Meta-analytic studies to be included should meet the following criteria.

- (1) Meta-analyses should be published between 2010-2022.
- (2) Meta-analyses should be published either in Turkish or in English.
- (3) Meta-analyses should focus on teacher relationship types and student academic achievement.
- (4) Primary studies in meta-analyses should not involve intervention.
- (5) Meta-analyses should contain appropriate statistical data to calculate the generic effect size.

Coding

The studies included in the data set of this study are coded according to their characteristics shown in Table 1.

Table 1. Coding Study Characteristics

Group	Code
Study	researchers (publication year)
School level	K12 and mixed
Primary research report type	article and mixed
Teacher relationship type	intrapersonal, teacher-child relation and teacher-school community relation (as interpersonal)
Meta-analysis quality	insufficient, low, medium, and high
The state of bias	yes, no and NA

Quality evaluation

The included studies were scored according to the Revised Assessment of Multiple Systematic Reviews (R-AMSTAR) scale revised by Kung et al. (2010). R-AMSTAR scale scores were coded as 0 to 11=insufficient, 12 to 22=low, 23 to 33=medium and 34 to 42=high (Young, 2017). R-AMSTAR consists of 11 sections and has been developed for the field of medicine. R-AMSTAR 8A and 8B are relevant for clinical applications. These items were not evaluated.

Statistical model

According to Borenstein, Hedges, Higgins, & Rothstein (2011), if the samples of the studies are different and the characteristics of the studies are different from each other, then the random effect model is recommended. The studies included in this meta-analysis are from different samplings. Considering the variety of studies, random effect model was preferred. Statistical analyses were carried out with CMA.2 program.

Effect size selection

Selected meta-analyses of this study often used Pearson correlation coefficient (r) index as the effect size metric (n=14). In addition to the r-index, the number of studies using Fisher's z (Fz) index is lower (n=3). Fz indices have been converted into r indices. Thus, in this study, r index was used as the effect size metric. The r index was evaluated according to the effect size classification suggested by Funder & Ozer (2019). According to this classification an effect size r of .05 indicates an effect that is *very small*, an effect size r of .10 indicates an effect of *small*, an effect size r of .20 indicates an effect of *medium*, an effect size r of .30 indicates an effect of *large*, and an effect size r of .40 or *greater* indicates a *very large* effect.

Publication bias analyses

Egger's regression test (ET) and Duval & Tweedie's Trim and Fill analysis (DTTF) techniques were used in the publication bias analysis of the dataset (Jin, Zhou & He, 2015). In Egger regression analysis, no publication bias is considered for $p > .01$ value. In Duval and Tweedy analysis, the number of studies to be added is determined to correct the publication bias. With the added studies, the asymmetry in the graph is corrected.

Heterogeneity and moderator analysis

The total amount of heterogeneity of the data set was determined by using Q statistics. In addition, I^2 statistics were used to determine the level of heterogeneity. Besides this, the effect sizes were calculated according to the moderator variables. The Q between statistical techniques was used to determine whether the effect sizes were statistically varied between the groups of moderator variables.

Results

Findings of the study classified under two main categories as correlations of positive and negative teacher relationship types with achievement. Through the first data set, the correlations between positive teacher relationship types and student achievement were sought. Then by using the second data set, correlations between negative teacher relationship types and student achievement were sought. Descriptive statistics containing mean effect size, publication bias, heterogeneity, and moderator analyses of the results were depicted and tabulated respectively.

Positive teacher relationship types and academic achievement

Descriptive analyses and average effect size: The number of meta-analyses concerning positive teacher relationship types and student achievement is eighteen (n=18) and these analyses totally contain 405 primary studies. From these first order meta-analyses, twelve correlational effect sizes were generated. The greatest effect size is $ES=.60$ which is classified as very large effect. The smallest effect size is $ES=.01$ which is classified as very small effect. The mean effect size is $ES=.24$ which is classified as medium effect with a lower limit of $LL=.17$ and an upper limit of $UL=.3$. These results denote a moderate correlation between positive teacher relationship types and student academic achievement. Amount of heterogeneity of the data was calculated as $Q=531.77$ ($p<.01$) and the level of heterogeneity is $I^2=96.80$ which denotes a high level of heterogeneity.

Publication bias analysis: Figure 2, shows the funnel plot for the first data set. Effect sizes and standard errors were observed to be distributed almost symmetrically that can be interpreted as a sign of bias absentee. Another bias test that is, Egger's regression test result also confirmed that there was no significant publication bias at the level of $p=.01$ ($t=.61$ $p=.55$). Although, the DTF test result showed a negligible publication bias. After correction, the effect size value was calculated as $ES=.25$ ($LL=.18$ $UL=.31$) which is also a moderate level. As a result of DTF, it was determined that the distribution would be symmetrical by adding a study to the right of the average effect size. The difference between the adjusted effect size value and the actual effect size value is approximately .01. This difference can be considered insignificant. As a result of publication bias analyses, it can be said that statistically, insignificant publication bias was detected.

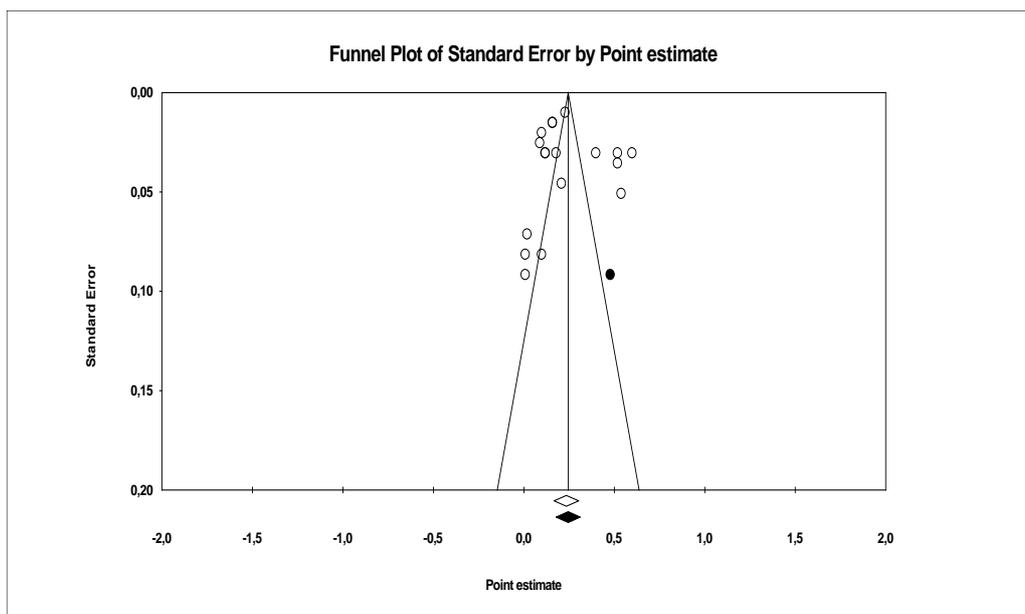


Figure 2. Funnel Plot of the First Data Set (Number of Studies to Be Added $n = 1$).

Moderator and heterogeneity analyses: Moderator and heterogeneity analyses of the first dataset are presented in Table 2. Relation between positive teacher relationship types and student academic achievement differs significantly ($Q(2) = 6.03$ $p = .048$). The relation between positive intrapersonal relationship and student academic achievement is at a weak level ($ES = .18$). On the other hand, the relation between positive teacher-student relationship and academic achievement is at a moderate level ($ES = .21$). Additionally, relation between the positive teacher-school community relationship and student academic achievement is at a very large level ($ES = .41$). Approximately 3.2% of the variance of the effect sizes is explained by teacher positive intrapersonal relationship, 4.4% of it by positive teacher student relationship and 16.8% of it by teacher school community relationship.

Table 2. Effect Size, Moderator, and Heterogeneity Analysis of the First Data Set

Group	n	ES=r	LL	UL	Q(b)	df (Q)	p
Positive relation type							
Positive intrapersonal	7	.18	.07	.29			
Positive teacher-child	8	.21	.11	.30			
Positive teacher-school community	3	.41	.26	.57	6.03	2	.048
Level							
K12	11	.26	.18	.35			
Mixed	7	.19	.07	.30	1.03	1	.31
Quality							
High	2	.17	-.04	.38			
Medium	16	.24	.17	.32	.41	1	.52
Bias							
NA	2	.16	-.06	.39			
No	14	.23	.14	.31			
Yes	2	.34	.12	.56	1.30	2	.52
Publication							

Article	5	.23	.10	.37			
Mixed	13	.23	.15	.32	.01	1	.99

Negative teacher relationship types and academic achievement

Descriptive analyses and mean effect size: The number of meta-analyses concerning negative teacher relationship types and student achievement is seven (n=7) and these analyses totally contain 87 primary studies. From these first order meta-analyses, nine negative correlational effect sizes were generated. The greatest effect size is ES=-.24 which is classified as a negative medium effect. The smallest effect size is ES=-.05 which is classified as a negative very small effect. The mean effect size is ES=-.16 which is classified as a negative small effect with a lower limit of LL=-.20 and an upper limit of UL=-.11. These results denote a negative weak correlation between negative teacher relationship types and student academic achievement. Amount of heterogeneity of the data was calculated as Q=23.30 (p<.01) and the level of heterogeneity is I²=74.25 which denotes a moderate level of heterogeneity.

Publication bias analysis: Figure 3, illustrates the funnel plot for the second data set. Effect sizes and standard errors were observed to be distributed almost symmetrically that can be interpreted as a sign of bias absentee. Another bias test that is, Egger's regression test result also confirmed that there was no significant publication bias at the level of p=.01 (t=-.38 p=.72). Also, the DTF test results did not show a sign of publication bias.

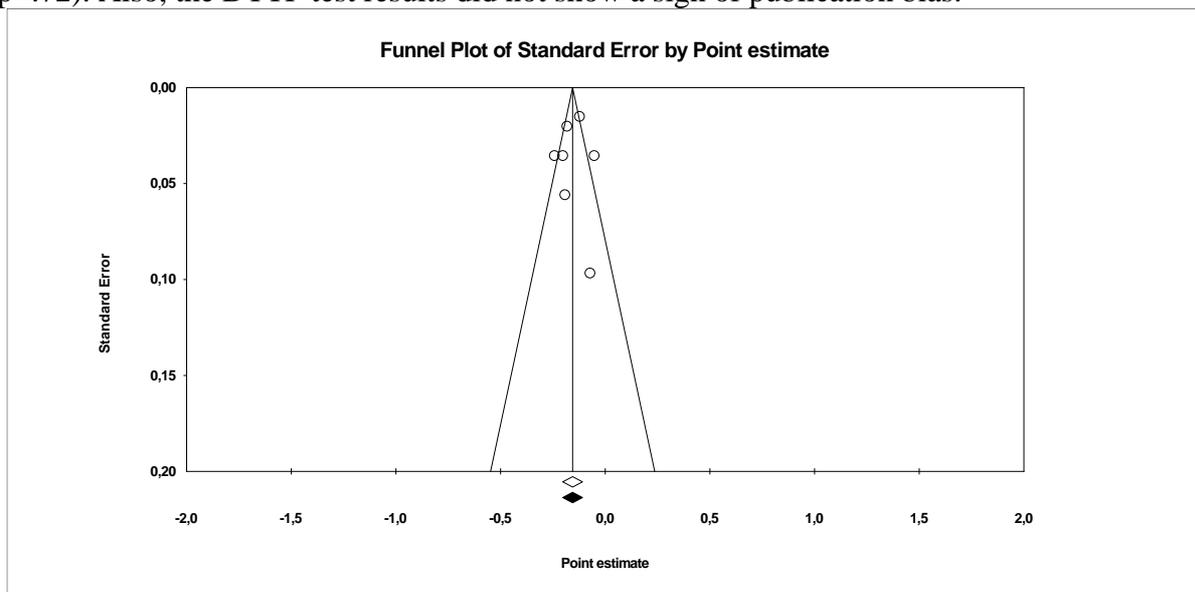


Figure 3. Funnel Plot for the Second Data Set

Moderator and heterogeneity analyses: Moderator and heterogeneity analyses for the second data set are shown in Table 3. If the number of effect sizes of the moderator groups containing the data set is insufficient, n<2, the findings were not interpreted. Variance of the correlational effects of negative teacher relationship types on student academic achievement differs statistically significant according to the publication type (Q (1) =5.52 p=.02). Meta-analyses involving only articles produced a smaller effect size (ES=-.18). However, the effect size produced by the meta-analyses containing the mixed type of publications is greater (ES=-.05). In addition, while the relationship between negative teacher-student relationship type and academic achievement is negatively weak (ES=-.14), the relationship between negative

intrapersonal relationship and academic achievement is negatively moderate (ES=-.24). Approximately 5.8% of the variance of the effect sizes is explained by teacher negative intrapersonal relationship and 2% of it by teacher student relationship.

Table 3. Effect Size, Moderator, and Heterogeneity Analysis of the Second Data Set

Group	n	ES=r	LL	UL	Q(b)	df (Q)	P
Negative relation type							
Negative intrapersonal relation	1	-.24	-.35	-.13			
Negative teacher-child relation	6	-.14	-.19	-.09	2.60	1	.11
Level							
K12	4	-.17	-.23	-.10			
Mixed	3	-.13	-.22	-.05	.39	1	.53
Bias							
NA	2	-.20	-.28	-.11			
No	4	-.12	-.17	-.07			
Yes	1	-.24	-.35	-.13	5.14	2	.08
Publication							
Article	5	-.18	-.22	-.13			
Mixed	2	-.05	-.15	.04	5.52	1	.02

Discussion

In this study, the relationship between teacher relationship types and student academic achievement determined in terms of correlational coefficients. Accordingly, correlational effect size between positive teacher intrapersonal relationship and student academic achievement is small, positive teacher student relationship and student academic achievement is medium, positive teacher school community relationship and student academic achievement is at a very large level. Also, correlational effect size representing negative teacher intrapersonal relationship and student academic achievement is negatively medium, negative teacher student relationship and student academic achievement is negatively small.

As for moderator analyses of the study, whether correlational effect sizes between teacher relationship types and student academic achievement differ or not according to moderator variables was searched. The variance of the effect sizes between positive teacher relationship types and student academic achievement differs significantly according to the positive relationship types. Meta-analyses containing positive school community relationship type generates greater effect size than the other positive relationship types. Variance of the effect sizes between negative teacher relationship types on student academic achievement differs statistically significant according to the publication type. Meta-analytic studies involving only the articles produced smaller negative effect sizes and, meta-analysis studies that included mixed reports produced larger negative effect sizes. The magnitude and direction of the effect or relationship according to the topic under consideration may affect the publication of research (Page, Sterne, Higgins, & Egger, 2021). This leads to publication bias. On the other hand, this weakens the validity of the average effect size calculated in meta-analyses (Rothstein, Sutton, & Borenstein, 2005). This problem can be tackled by including unpublished primary studies in meta-analyses conducted in educational sciences. Thus, approximations of actual or true effect size can be made.



Positive teacher intrapersonal relations refer to the attitudes and modes related to pedagogical maturity and are effective on achievement. According to the results of the study, these features were found to have a small effect on student achievement. It can be said that teachers who show close attention to students and have a high level of social and psychological maturity will increase student success. Teachers who can build positive relationships with their students increase their success. This result was confirmed by the moderate positive effect of positive teacher-student relationship on achievement in the study. The fact that the teacher has positive relations with the school community draws attention as the type of relationship that most effectively influences student achievement. When teachers establish constructive relationships with all the components of the school community, not only the student but also all stakeholders are affected by these positive relationships. These results show that teachers should develop their personality traits in a positive way towards teaching and learning and make effort to gain skills establishing positive relationships with students and school community.

Jennings and Greenberg (2009) determined that teachers who are competent socially and emotionally are positively effective on student outcomes involving academic achievement. It is also suggested that teacher and student relationships are explicitly connected and may have positive or negative reciprocal effects. Social and emotional competence contains teacher positive self-relations. Positive teacher intrapersonal relations refer to teachers' traits that leads them construct positive social and emotional relations with themselves and the environment. These relations help teacher communicating in an effective way and support students to be successful. Göncz, Göncz and, Pekić (2014) have suggested that students prefer teachers who have characteristics that contribute to pleasant interpersonal relations. That is, teacher who can establish pleasant relations with their students are the best for them. Admiring teachers as a leader show students' appreciation to the way they teach. Therefore, liking teacher and following class carefully help students to be successful. Teachers should develop positive relations with the students to encourage them studying and achieving. Bardach and, Klassen (2020) stated that, cognitive skills of teachers' effect student outcomes. In sum, it can be said that cognitive, social, emotional traits of teachers are effective on student outcomes including academic achievement.

Negative teacher intrapersonal relations also negatively affect student achievement, with teacher's attitudes and modes far from pedagogical maturity. In this study, it's seen that there is a moderate negative relationship between teacher's negative intrapersonal relations and student achievement. The negativity in teacher-student relations had a relatively low effect on success at a small level. This shows that the teacher should especially avoid negative personality traits, attitudes, and modes contrary to positive pedagogy. However, establishing positive relationships with students will increase success. The involvement of teachers in trainings and studies that will provide social, psychological, and pedagogical development will decrease the negative teacher characteristics and student relations and increase academic achievement of the students.

Teachers' psychological well-being and skills of stress management is related to the negative teacher relationships. Teachers who can reduce stress and establish positive social relations are successful as a leader affecting students to study hard. It is determined by von der Embse, Ryan, Gibbs and, Mankin (2019), that interventions reducing behavioral issues may have positive results for teachers who frequently face problematic behaviors all day in the school. Reducing these problems may increase teachers' motivation and decrease negative attitudes. This result will lead to increase student academic achievement as well. Madigan and, Kim

(2021) evidently showed that teacher burnout is associated with lower academic achievement and motivation. Therefore, teachers suffering from burnout and showing negative behaviors may cause students to show low performance academically. Negative teacher relationship with self and others is related to teacher burnout and effect achievement negatively. Hascher and, Waber (2021), additionally found that there is a remarkable relationship between teacher well-being and the quality of student outcomes, supporting these situations. Professional stress and burnout of teachers negatively affect the academic success of students. Teachers suffering burnout and stress cannot perform their best to teach effectively. In the period of stress and burnout, not only teachers and student but also all the school community members are affected negatively. It is also a managerial responsibility of the school administrations to motivate teachers, students, and parents by creating a positive school climate.

Conclusion and Recommendations

This study covers published and unpublished meta-analyses related to teacher relationships and student academic achievement between 2010 and 2022 years written either in English or Turkish. It has been found that positive teacher and school community relations are positively effective on student academic achievement and negative teacher school community relations are negatively effective on the achievement. In future research, the findings of meta-analyses in widely used languages other than English can be synthesized. On the other hand, this study is only limited to the teacher relations and student academic achievement. Later studies may be focused on the relationships of organizational cynicism, mobbing and other variables related to the student outcomes. This study covers the relationship of teachers with themselves, students, and colleagues. The relationship of teachers with parents or families is also an important dimension which is effective on student academic achievement. Because there was not any meta-analysis about the negative relationship between teacher and parents, later second order meta-analyses can be conducted on this topic. Finally, by regarding the findings of the study, the activities improving teacher and school community relation can be arranged for teachers and students to foster teacher efficiency and student achievement. In this manner, in-service teacher training programs should be organized in schools to improve the skills of teachers to cope with burnout and stress. The sources of burnout and stress of teachers stem from time management, undesirable student behaviors, and negative relationships with colleagues, administrators, and parents. Also, in-service training programs can be scheduled to develop the knowledge and skills of time management, relationship management and coping with undesirable behaviors. Beside this, the motivation and effective learning activities addressing students can be programmed in the schools as well. Because education is a bilateral process between teachers and students, motivating teachers and improving their social skills is not sufficient for an effective educational process. These activities also should address the students so that teaching and learning components of educational processes could be effective.

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The meta-analyses included in the study are starred (*) in the list.

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