A Meta-Analysis of the Effects of Some Factors on Teachers' Classroom Management Skills

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To cite this article:

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Abstract

The purpose of this study is to examine the effect of personal, professional and organizational factors on teacher's classroom management skills in the Turkish context. Meta-analyses were performed to find out the effect sizes and understand the trend in substantive findings across classroom management skills studies. Data consisted of articles, master theses, and dissertations which were retrieved from the Turkish Higher Education Council (THEC) National Theses Center, ULAKBIM (a database for articles indexed by TUBITAK-ULAKBIM), THEC Academic, and Google Scholar databases. The main dataset in this study consisted of 59 independent studies. Findings revealed that the effect of personality traits of teachers, professional, and organizational factors on teachers' classroom management skills was found at medium level. Emotional traits of teachers', sub-dimension of personality traits, produced a greater effect size than cognitive skills and personality type. Teachers, who feel satisfied with their job, work in a positive school climate, get motivated by their top managers and share common values and culture with their colleagues, tend to use CMSs more effectively. While occupational burnout, low teaching performance, and poor organizational communication have a negative but significant effect, job satisfaction, school climate, organizational motivation, shared organizational values and rules have a moderately positive and significant effect on teachers' CMSs.

Key words: Classroom management skill, personal, professional, organizational, factors, meta-analysis.

Introduction

Classroom management, as the best way of an effective teaching and learning, transforms student potentials and provide outputs such as knowledge, skill and behavior (Aydın, 2017; Balay, 2012). In addition, it also has a great impact on developing students' academic knowledge, cognitive competence and affective qualifications (Dincer & Akgun, 2015). Within this context, having desirable classroom management skills, for teachers and teacher candidates, is critical. Generally, classroom management is defined as an extensive body of activities including systematic implementation of principles, concepts, theories, models, and techniques related to functions of planning, organizing and evaluation to accomplish the specific educational goals (Erdogan, 2011). According to Brophy (1986) classroom management doesn't mean just trying to minimize the negative behaviors of students and directing students to cooperate to minimize these behaviors, but it means all academic abilities in teaching and learning process and organizing activities that make students take part in these activities at maximum level. Considering Brophy's definition, classroom management consists of five skills:

i. Classroom management should be based on creating positive teacher-student and student-student relationship.

ii. Students' personal needs should be on top of the agenda in classroom management process.

iii. An effective classroom management requires responding academic needs of students both individually and as a group by using teaching methods that provide upper learning.

iv. Classroom management requires student involvement in creating code of conduct, and also employing techniques related to group management.

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v. Classroom management requires guiding students with the aim of improving and evaluating their negative attitudes (Jones & Jones, 2004).

In the last decades, globalization and the dramatic changes in technology have brought effective human resources on a critical focus. Effective management in organizations and employees' skills are closely related with each other. For that reason, in terms of organizational efficiency and productivity, employees' skills have become very important. Since, identifying and developing skills of employees in organizations has become a strategic factor for the maintenance of organizational efficiency and productivity (Kececioglu, & Erkan, 2013; Ünal, 2013). From this point of view, teacher's proficiency skills have to be evaluated for a sustainable school efficiency and productivity. Ministry of National Education (MoNE) and Turkish Council of Higher Education (THEC) have conducted various studies to identify the competencies of both teachers and teacher candidates in the last decade (MoNE, 2006; 2017; THEC, 2011). The MoNE (2017) classified teachers' general competency fields as professional knowledge, professional skills, and professional norms and attitudes. Furthermore, professional skills field was classified as planning teaching-learning processes, creating learning environment, managing teaching-learning processes (classroom management) and assessment and evaluation skills. In recent years, studies, conducted by the MoNE in Turkey for identifying the levels of competency, efficiency and performance students, has also taken great attention. Within this context, MoNE and THEC have updated bachelor degree programs to provide efficient teacher training courses which are the most important dimensions of teacher efficiency. Moreover, MoNE and THEC have also conducted some important studies to make teachers question their competences, identify their current status, and create developmental goals related to teaching profession (MoNE, 2006, 2017; THEC, 2011, 2018).

Teachers are expected to manage their classes in an effective way that students can benefit from the schooling activities in maximum level. Hence, teachers should master in classroom management as it is a mandatory component of effective teaching and learning. A vast amount of literature also emphasizes that besides students' general level of intelligence, home environment, socioeconomic status or motivation, teachers can also make a great difference in terms of student outcome or achievement (Henson & Chambers, 2003; Hester, Gable, & Manning, 2003; Marzano & Marzano, 2003; Muijs & Reynolds, 2001; Ozdemir, 2019). This emphasis on teachers' classroom management skills is also specified by TALIS 2018 results. According to TALIS results, teachers' professional development significantly associated with many dimensions of classroom management skills and their participation in professional development goes hand in hand with their mastery of a wider array of methods to use in the classroom (OECD, 2019; Peña-López, 2009). In other words, having classroom management skills is highly crucial for the effectiveness of teaching profession. Classroom management literature includes studies that researching impacts of effective classroom management skills and classroom management programs on students' academic achievement levels, affective dimension and other behaviors (Marzano, Marzano, & Pickering, 2003; Mashburn, Hamre, Downer, & Pianta, 2006; Poulou, 2017; Mujis & Reynolds, 2002; Stronge, Ward, & Grant, 2011; Korpershoek, Harms, de Boer, van Kuijk, & Doolaard, 2016). As generally emphasized by various studies, teachers' influence over students is related directly to teaching-learning styles, teaching content and curriculum, interaction styles with one another and perception of the world around them, and that influence may be more powerful than we think and long lasting (Darling-Hammond, 2001; Marzano, Marzano, & Pickering, 2003; Poulou, 2017). Being aware of that influence is also important for creating positive attitude toward learning and achieving academic and social outcomes (Stronge, 2018). Classroom management includes various dimensions such as arranging classroom environment, time management, behavior management, teaching-learning management, communication and motivation management (Aydın, 2017; Uğurlu, 2016). Classroom management efficacy means the information, skills, norms, attitudes and beliefs of teachers related to those dimensions. Effective management of teaching and learning process is an important factor for teaching profession. Considering all of these, classroom management skills and the factors, which effect those skills predominantly, should be examined. Studying the effects of these factors on teachers' classroom management skills is considered highly important in terms of creating positive classroom environment. This study is an attempt to analyze the effects of factors which are related with teachers' classroom management skills.

Purpose of the Study

The purpose of this study is to examine the effect of personal, professional and organizational factors on teacher's classroom management skills. Those factors include personal traits of teachers, professional and organizational factors. The following research questions guided this study;

1. Do the factors (personal, professional, organizational factors) have effect on teacher's classroom management skills?

2. Do the effect sizes of personal, professional and organizational factors differ significantly in terms of moderator variables?

Methodology

Beginning in the 1970s, meta-analysis is the method that combines effect sizes from different studies researching the same question to get better estimates of the population effect sizes (Field, 2009). Meta-analysis is frequently applied as a means of understanding the trend in substantive findings across studies (Glass & Smith, 1977). It requires systematic treatment of relevant studies and produces a measure of overall impact or the relation of the construct of interest (Robinson, Lloyd & Rowe, 2008). Meta analyses help researcher combine the statistical results of independent studies conducted in a specific field or subject and give a chance to make statistical analyses on those results to reach an extensive finding (Borenstein, Hedges, Higgins & Rothstein, 2009; Dincer, 2018; Lipsey & Wilson, 2001). As the present study aimed at examining the effects of personal, professional, and organizational factors on teacher's classroom management skills, meta analyses were conducted as the best way to find out the effect sizes and understand the trend in substantive findings across classroom management skills studies.

Data Collection

Data consisted of articles, master theses and dissertations which were retrieved from the THEC National Thesis Center, ULAKBIM (a database for articles indexed by TUBITAK-ULAKBIM), THEC Academic, and Google Scholar databases. The keyword searches included the following terms both in Turkish and English: *classroom, classroom management, classroom skill(s), classroom management competency, classroom technique(s), teaching management, teaching ability, classroom strategy/strategies*. The keywords were searched by both of the researchers, and were also saved to analyze and compare the potential publications to be included in the meta-analyses. Data covered the publications between 2007 and 2019. The last search dated back to June, 2019.

Inclusion Criteria: The criteria set for the study is as follows;

1. Studies that report correlation coefficient between personal, professional or organizational culture and CMSs.
2. Participants should be in service teachers.
3. Studies should be published between 2007 and 2019.
4. The written language of independent studies should be Turkish or English.
5. Sampling should be from the educational districts in Turkey.
6. Studies should be conducted in pre-primary, primary and secondary levels of education.

Data pool consisted of 89 independent studies after keyword searches. By considering the inclusion criteria, researchers examine all the studies comparatively and 30 of them were excluded because of some deficiencies such as not having plenty of data for statistical analysis, inappropriate sampling or duplicated studies. Studies which were duplicated (k=19), conducted in universities or special education levels (k=3), or have samples from teacher candidates (k=8) were excluded from the data pool. After that process, 59 studies were left as the general dataset of this meta-analysis study and were coded into the coding form developed by the researchers. Datasets were categorized in three sub categories according to the outputs of the studies a) personality traits (PTs) included studies that focused on the relation between CMSs and teacher's personality traits, b) professional factors (PFs) included studies that focused on the relation between CMSs and professional factors, and c) organizational factors (OFs) included studies that focused on the relation between CMSs and organizational behavior. In sum, studies in the dataset include data about the factors effecting teacher's classroom management skills. Descriptive statistics were presented in Table 1. Appendix 1 includes studies comprising the dataset of this study.

Table 1. Overview of the characteristics of the CMSs studies

Year of Publication	PTs	PFs	OB	Participant Profile	PTs	PFs	OB
	f	f	f		f	f	f
2007-2011	6	2	4	Mixed Branches*	13	8	6
2012-2016	9	5	11	Primary Teachers	7	6	7
2017-2019	7	12	4	Pre-primary Teachers	2	5	5
Total	**22**	**19**	**18**	**Total**	**22**	**19**	**18**
SES				**Institution Type**			
Level 1	10	4	8	Pre primary	2	5	5
Level 2	5	5	4	Primary	7	6	7
Level 3	7	10	5	Middle School	5		1
Unspecified			1	High School	2		
				Mixed	6	8	5
Total	**22**	**19**	**18**	**Total**	**22**	**19**	**18**
Type of Publication							
Dissertation		1					
Research Article	7	8	4				
Master Theses	15	10	14				
Total	22	19	18				

* includes other branches such as Mathematics, English or Literature.

Coding Process: Coding is necessary in meta-analysis since it allows researchers to make complex data clearer and appropriate for processing (Karadag, İsçi, Öztekin and Anar, 2016). In this study, a coding form was developed in Excel by the researchers which include some basic information about independent studies. Codes involve information about the year of publishing, participant profile, SES, publication and institution type. Teacher behaviors were coded by considering the problem and sub problem statements of the studies. Factors effecting classroom management skills were coded as a) Personality traits (PTs), b) Professional factors (PFs), and c) Organizational factors (OFs), and codes were unified under the relevant sub theme. *Personality traits (PTs)* were coded into three different behavioral dimensions as cognitive, emotional and personality type. Cognitive dimension involves problem solving abilities, critical and analytical thinking abilities, and emotional dimension is related with self-efficacy belief, emotional intelligence and other behaviors such as happiness level, motivation and humor styles. *Professional factors (PFs)* are about communication and collaboration with stakeholders, leadership in classroom, teaching-learning styles and teaching attitude. *Organizational factors (OFs)* refer to job satisfaction, burnout, school climate, organizational communication and motivation, and some elements of organizational culture such as shared organizational values and rules. Educational districts were taken into consideration in accordance with the Official Gazette (2002) classification. That classification was made with the support of Turkish Statistics Institute by State Planning Organization in 2002 to determine the economic and socio-cultural structure of districts (Şengül, Eslamian & Eren, 2013).

Data Analysis

Meta-analyses were performed using the program Comprehensive Meta-Analysis (CMA 2.2). Since the diversity of basic research characteristics in the meta-analysis datasets (Karadag, Bektaş, Çogaltay & Yalçın, 2015), we conducted statistical analyses under the random effects model. Pearson correlation coefficient (r) was calculated as an effect size for each study. Correlation coefficients change between -1 and +1. The distribution interval of correlation coefficient universe is relatively narrow and this also causes narrowness in the effect size variation (Borenstein et al. 2009). So, correlation coefficients were transformed into Fizher's z value (Fz) as a common way to solve that problem (r=Fz=ES). When the studies included more than one effect size, we calculated the mean effect size of the study. Unit of analysis of this research is the "study". Statistical analyses were conducted on Fz=ES. Cohen's (1985) value intervals were considered for the interpretation of effect sizes.

Validity and reliability of mean size effects are related with publication bias (Üstün & Eryilmaz, 2014). Publication bias may occur when the studies in published literature is systematically unrepresentative of the population of completed studies (Rothstein, Sutton & Borenstein, 2005). Firstly, to check the publication bias, the funnel plot distribution related to effect sizes was examined. Then, the Duval and Tweedie trim-fill (DTTF) statistical test was performed and interpreted. In this study, moderator analysis was conducted to control the

variation between mean effect sizes. According to the codes used in this study, behavior type, participant profile, institution type, SES of the educational district, and publication year were used as moderator variables.

Heterogeneity, in meta-analytic statistics, refers to the sampling error or the variation of the outcomes between independent studies (Borenstein et al, 2009; Erdogan & Kanık, 2011; Kurt, 2009). Here, I square statistical technique, a simple expression of the inconsistency of studies' results, was used to decide whether the results are heterogeneous or not (Higgins & Thompson, 2002). The results were examined by considering the value intervals suggested by Higgins, Thompson, Deeks, and Altman (2003) as % 25-% 50 low; %51 - %75 medium; and upper than %76 high. Q between groups test was used to check the statistical variation effect sizes distribution according to categoric moderators (Üstün & Eryılmaz, 2014). For continuous moderators, meta-regression technique was performed (Borenstein et al., 2009). When the intra group effect sizes were smaller than two, they were not included in the statistical analyses.

In meta-analysis, publication bias is a critical issue that should be checked before the analysis process. In this study, the researchers followed two steps to check the publication bias. The first step included the funnel plot distribution related to effect sizes of the three sub datasets. The Figures were presented below respectively.
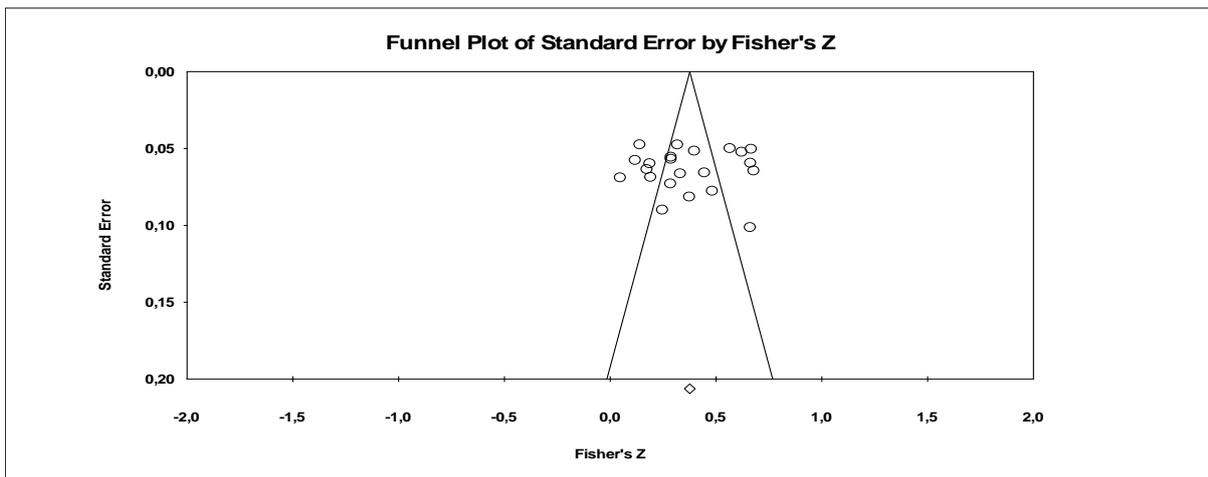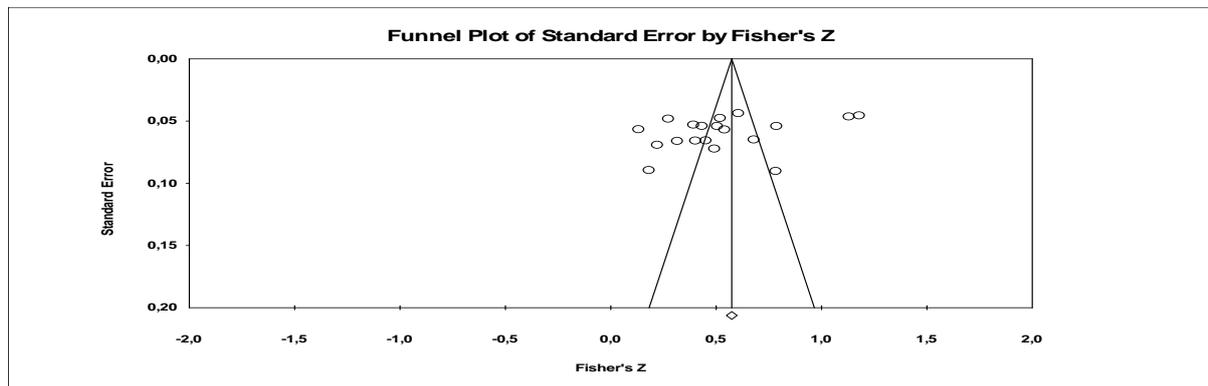

Figure 1. Funnel plot of PTs sub dataset

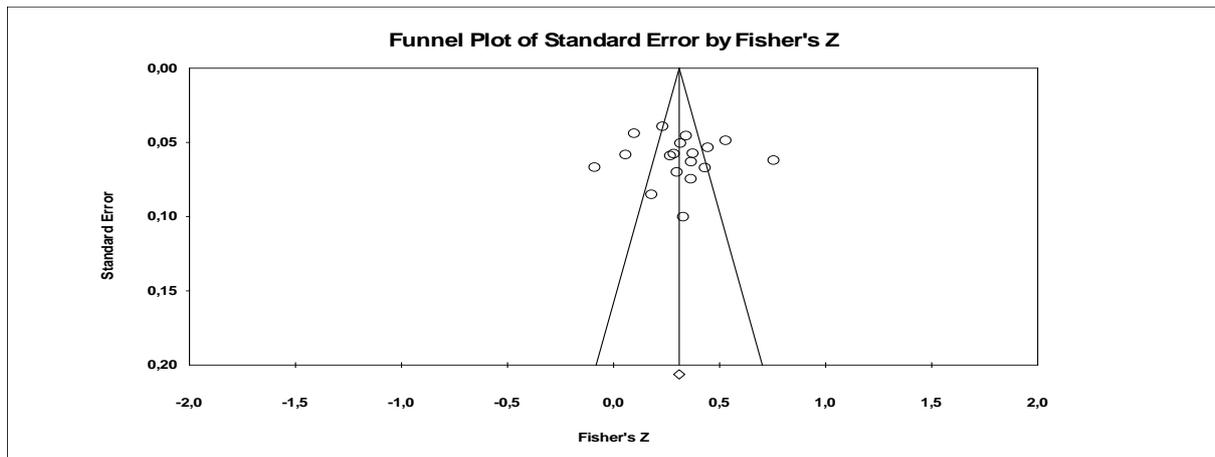**Figure 2.** Funnel plot of PFs sub dataset

Figure 3. Funnel plot of OB sub dataset

As seen in Figure 1. the effect sizes of PTs sub dataset showed a symmetric distribution on the funnel plot. On the other hand, Figure 2 and 3 showed an asymmetric distribution on the funnel plots. The figures of funnel plots can be interpreted as not representing serious publication bias for the effect size of the related studies. In addition to funnel plot, DTTF test, another way of testing and adjusting publication bias, was conducted on datasets of the study and the results were presented in Table 2.

Table 2. Duval and Tweedie trim-fill (DTTF) test for sub datasets.

	Dataset	Excluded Studies	Effect size and 95% interval			Q(top)
			ES	LL	UP	
PTs	Observed		0.37	0.28	0.46	229.82
	Corrected	0	0.37	0.28	0.46	229.82
PFs	Observed		0.53	0.39	0.67	532.08
	Corrected	4	0.62	0.48	0.75	715.3
OFs	Observed		0.31	0.23	0.40	167.53
	Corrected	4	0.25	0.15	0.34	313.25

As seen in Table 2, while there is no publication bias in PTs sub data set, there seem to be bias in PFs and OFs sub datasets as in the funnel plots. By considering both funnel plots and DTTF test, it can be inferred that there is not serious publication bias for the effect size of the related studies.

Results

The mean effect size of personality traits on teacher's CMSs was in medium level (ES=.37 (LL=.28; UL=.46) as presented in Table 2. I^2 value showed that the data set is highly heterogeneous (I^2= 90.46) and the total variance of the dataset is Q= 229.82. Table 3 represents the findings of moderator analysis of the effect of personality traits (PTs) on teacher's classroom management skills.

Table 3. Moderator analysis of the effect of PTs on teacher's classroom management skills

Group	k	ES	LL	UL	Q	df	p
Behavior Dimension							
Emotional traits	15	0.43	0.33	0.53			
Cognitive skills	4	0.20	0.01	0.39			
Personality type	3	0.32	0.09	0.54	4.58	2	0.10
Institution Type							
Pre primary	2	0.47	0.18	0.76			
Primary	7	0.38	0.23	0.53			
Middle School	5	0.36	0.18	0.55			
High School	2	0.21	-0.08	0.50			
Mixed	6	0.40	0.23	0.56	1.70	4	0.79
Branches							
Pre-primary teacher	2	0.47	0.18	0.76			
Primary teacher	7	0.38	0.23	0.53			
Mixed branches	13	0.36	0.24	0.47	0.50	2	0.78
SES							
Level 1	10	0.36	0.23	0.50			
Level 2	5	0.41	0.22	0.59			
Level 3	7	0.36	0.21	0.52	0.16	2	0.92
Publication type							
Article	7	0.38	0.22	0.53			
Master Theses	15	0.37	0.27	0.48	0.01	1	0.95

Table 3 indicates that the mean effect size of PTs showed no difference according to moderator variables. As for the behavior dimension, teachers' emotional traits produced greater effect size than cognitive skills and personality type sub dimensions. Another issue is to be mentioned that the mean effect size of studies also showed no difference according to the publication year (β=0.01; p=.87).

The effect size of PFs on teacher's CMSs was found as moderately positive ES=.0,53 (LL=.39; UL=.67) in Table 2. I^2 value showed that the data set is highly heterogeneous (I^2= 90.63) and the total variance of the dataset is Q= 192.15. The mean effect size of PFs dataset is in medium level both in observed and corrected publication bias. Moderator analysis of the effect of professional factors on teacher's CMSs was presented in Table 4.

Table 4. Moderator analysis of the effect of professional factors on teacher's CMSs

Group	k	ES	LL	UL	Q	df	p
Behavior Dimension							
Communication skill	4	0.61	0.27	0.94			
Teaching attitude	7	0.52	0.27	0.88			
Teaching approaches	4	0.59	0.25	0.92			
Classroom Leadership	4	0.43	0.09	0.76	0.69	3	0.88
Institutional Type							
Pre primary	5	0.49	0.21	0.77			
Primary	6	0.47	0.21	0.72			
Mixed	8	0.61	0.38	0.83	0.74	2	0.69
Branches							
Pre-primary teacher	5	0.49	0.20	0.78			
Primary teacher	6	0.47	0.21	0.73			
Mixed	8	0.61	0.38	0.83	0.74	2	0.69
SES							
Level 1	4	0.34	0.03	0.64			
Level 2	5	0.52	0.25	0.79			
Level 3	10	0.61	0.42	0.80	2.29	2	0.32
Publication type							
Article	8	0.55	0.32	0.78			
Master Theses	10	0.53	0.32	0.73	0.02	1	0.88

Table 4 indicates that the mean effect size of PFs showed no difference according to moderator variables. A noteworthy finding in the result is that the effect of communication skills on CMSs is higher than other dimensions. Another issue is to be mentioned that the mean effect size of studies also showed no difference according to the publication year ($\beta=0.03$; $p=.15$). The last analysis includes the effect of organizational factors on CMSs and was presented in the Table 5.

The effect size of OFs on teacher's CMSs was found as moderately positive ES=.31 (LL=.23; UL=.40) in Table 2. I^2 value showed that the data set is highly heterogeneous ($I^2=96.61$) and the total variance of the dataset is Q= 167.53. The mean effect size of OFs dataset is in medium level both in observed and corrected publication bias (ES =.25). Moderator analysis of the effect of organizational factors on teacher's CMSs was presented in Table 5.

Table 5. Moderator analysis of the effect of organizational factors on teacher's CMSs

Group	k	ES	LL	UL	Q	df	p
Behavior Dimension							
School culture	5	0.23	0.07	0.40			
Job satisfaction	4	0.20	0.01	0.38			
Motivation	3	0.42	0.21	0.62			
Burnout	5	0.49	0.33	0.64			
Other	2	0.24	-0.02	0.49	10.30	4	0.04
Institutional Type							
Pre primary	5	0.35	0.19	0.51			
Primary	7	0.39	0.26	0.52			
Mixed	5	0.17	0.02	0.33	4.70	2	0.10
Branches							
Pre-primary teacher	5	0.35	0.20	0.50			
Primary teacher	7	0.39	0.26	0.52			
Mixed	6	0.19	0.05	0.33	4.74	2	0.09
SES							
Level 1	8	0.33	0.19	0.46			
Level 2	4	0.24	0.05	0.43			
Level 3	6	0.25	0.09	0.41	0.68	2	0.712
Publication type							
Article	5	0.35	0.17	0.52			
Master Theses	13	0.27	0.17	0.37	0.22	1	0.64

Table 5 showed that the mean effect size of OFs is significant according to organizational factors dimension and the type of institution. In organizational behavior dimension, burnout produced greater effect size than other dimensions. Pre-primary and primary school types have also produced greater effect size than other levels of education. Another issue is to be mentioned that the mean effect size of studies also showed no difference according to the publication year ($\beta=0.02$; $p=.12$).

Discussion

In their study, Wang, Haertel and Walberg (1993) tried to identify and estimate the influence of educational, psychological, and social factors on learning by using an extensive data for analysis represent over 11,000 pieces of research. They identified 28 factors that influence student learning and the most important one was classroom management. Classroom management includes a variety of skills that teachers should have to use in-class learning activities effectively since the most important basis of existence of a school or class is to help pupils organize, focus and follow a productive process through classes. As the extensive classroom management literature shows that effective teachers considered to be competent in classroom management skills, and are more productive than their peers (Sieberer-Nagler, 2016; Hart 2010; Roache & Lewis, 2011; Hill & Tyson, 2009; Iverson, 2003; Emmer & Hickman, 1991), and the ability of a teacher to effectively manage a classroom depends also on the teacher's mode of training and work experience (Lin & Gomell, 1997). From that point of view, the present study focused on teacher's classroom management skills to find out what factors are important or related with them and to what extent are those factors affective on their CMSs. For the purpose of this study, meta-analyses were performed to understand the trend in substantive findings across classroom management skills studies and to find out the effect of personal, professional and organizational factors on teacher's CMSs. Meta analyses consisted of some steps. In the first step, we checked the publication bias with funnel plots and DTTF test and found that the values did not represent serious publication bias for the effect sizes of the related studies. The first step also consisted of analysis of mean effect sizes of sub categories and the results showed that the mean effect sizes of personality traits (PTs) of teachers, professional factors (PFs), and organizational factors (OFs) were in medium level.

The second step included the moderator analysis of the effect of personal traits on teacher's CMSs. The effectiveness of managing a classroom greatly depends on the personality characteristics of the teacher which determines the teacher's level of organization, charisma and unique adjustment to classroom processes. Teachers may have the same professional qualities but they differ in their personality characteristics which makes their approach to classroom management also different (Nkomo & Fagrokha, 2016). Teacher personality profiles have been linked to many characteristics associated with effective schools: classroom management style; types of learning environments and patterns of teacher interactions; student achievement; and teacher attrition (Thornton, Peltier, & Hill, 2005). In this meta-analysis study, personal characteristics of teachers, especially the emotional traits, were found to have moderately positive effect on CMSs. Cognitive abilities and personality types also have weak and significant effect. In terms of sub dimensions of cognitive abilities, problem solving skills have produced a medium level effect, additionally EQ and self-efficacy belief dimensions of emotional traits have a medium level effect on teacher's CMSs. Emotional traits are critical for an effective classroom management, as the teachers, who can manage their own and set the tone of the classroom by developing supportive and encouraging relationships, can create a more open and effective teaching and learning environment with fewer distractions (Jennings & Greenberg, 2009; Brackett & Katulak, 2007). Those findings coincide with many study findings conducted in classroom management literature (Darling-Hammond, 2001; Emmer, 1994; Marzano, Marzano, & Pickering, 2003; Mashburn, Hamre, Downer, & Pianta, 2006; Mujis & Reynolds, 2002; Poulou, 2017; Stronge, Ward, & Grant, 2011; Coban & Atasoy, 2019). In a meta-analysis study of Marzano, Marzano, & Pickering (2003), it was found that teachers who have high-quality relations and communication with their students encounter fewer behavior problems. Self-efficacy perceptions of teachers are also related with successful classroom management skills as Mujis and Reynolds (2002) found in their study and confidence is also a prerequisite to effective classroom management (Cartledge & Johnson, 1996). In another study, Jennings and Greenberg (2009) have focused on teacher's social and emotional competence and proposed a model of the pro-social classroom that highlights the importance of supportive teacher–student relationships, effective classroom management, and successful social and emotional learning program implementation. CMSs of teachers are also related with the improvement of academic success, and affective and cognitive skills of students as Korpershoek et al., (2016) found in their meta-analysis. To sum up the findings, the present conducted meta-analysis showed that personal characteristics, especially emotional ones, are more effective on teacher's CMSs than professional and organizational ones as evidenced in the literature.

The third step involved the moderator analysis of the effect of professional factors on teacher's classroom management skills. Being an effective teacher is mostly related with teacher's personal and professional characteristics as found in a study conducted by Gao & Liu (2012). They found that teacher knowledge, professional attitude, classroom performance, rapport establishing, student motivating, and personality were the skills that effective teachers have in common. In this meta-analysis, professional factors were categorized as collaboration and communication with stakeholders, leadership behaviors in class, teaching–learning approaches used by the teachers and attitude towards teaching activity. All those factors were found to have moderate and significant effect on teacher's CMSs. That means teachers can perform CMSs in an effective way when they have good-quality collaboration and communication with stakeholders such as parents, colleagues and students, show leadership behaviors in class such as motivating, role modeling and inspiring students, use teaching-learning approaches effectively and have positive attitude towards teaching. Effective teachers, whose roles are changing in the last decades (Cakmak, 2011), develop collaboration with the community in which they work, and they also try to find ways to familiarize the culture, climate, and the community that makes up the school (Sieberer-Nagler, 2016). Kane and Harms (2005) also focused on collaborative learning and they dealt with student-teacher interaction and collaboration that give learners a chance to be more active and create a more dynamic classroom interaction resulting in a shared classroom management process with students. There is also evidence that teachers, as leaders in classes, can enhance student learning motivations effectively through improved classroom management practices (Hung & Fan, 2014). Another critical issue is the effectiveness of teaching-learning approaches used by the teachers since an effective teacher also must be aware of his/her students´ interests and styles of learning by using appropriate teaching-learning approaches effectively. By doing that, teachers can develop a positive teaching and learning environment, and this will result in a positive classroom management and engaged students (Bennett & Stanberg, 2006; Jacobs & Renandya, 2017).

The fourth step involved the moderator analysis of the effect of organizational behavior on teacher's classroom management skills. The findings revealed that occupational burnout, low teaching performance and poor organizational communication have negative but significant effect on CMSs of teachers. The effect size of occupational burnout is higher than the two other variables. That finding coincides with Aloe, Amo, & Shanahan (2014) meta-analysis study. They found a significant relationship between classroom management self-efficacy and occupational burnout as the teachers with higher levels of self-efficacy are less likely to experience the feelings of burnout and vice versa. On the other hand, job satisfaction, school climate,

organizational motivation, shared organizational values and rules have moderately positive and significant effect on CMSs. Teachers, who feel satisfied with their job, work in a positive school climate, get motivated by their top managers and share common values and culture with their colleagues, tend to use CMSs more effectively. Study findings on job satisfaction and classroom management show that satisfied teachers use CMSs better and also teachers who use CMSs effectively get satisfied with their jobs (Bilač, & Miljkovic, 2017; Sahito & Vaisanen, 2017). Another dimension is school climate which is multi-dimensional and influences all stakeholders such as students, parents and school personnel (Marshall, 2004). In a school with an improved school climate (Mitchell & Bradshaw, 2010), teachers experience high levels of morale, efficacy and satisfaction, and lower levels of burnout, turnover, and absenteeism (Cohen & Geier, 2010). Those teachers are also willing to improve teaching and learning practices (Simón & Alonso-Tapia, 2016). In their study Mcnelly, Nonnemaker and Blum (2002) examined the association between school connectedness and the school environment to identify ways to increase students' connectedness to school. They found that school connectedness is greater in schools where the classroom management sounds good and teachers are empathetic, consistent, encourage student self-management and allow students to make decisions.

Recommendations

As presented in the findings and discussion sections of this meta-analysis, effective classroom management skills include multi-dimensional factors and they play a key role in reaching the aim of teaching and learning activities. To manage classes effectively, all factors should be taken into consideration in teacher training courses in practice-oriented programs. It will be beneficial for teacher candidates to experience the possible classroom management cases. Teaching profession necessitates various cognitive and emotional personal traits. Hence, choosing and placement policies of teacher candidates should be revised and carefully designed to place the best fit person for teaching in schools. Teachers should be aware of the 21 century skills such as flexibility, creativity or adaptability to enhance their professional competencies. While burnout, low teaching performance and poor organizational communication affect CMSs negatively, teachers, who feel satisfied with their job, work in a positive school climate, get motivated by their top managers and share common values and culture with their colleagues, tend to use CMSs more effectively. It is suggested to inform school administrators and top authorities frequently about that issue to make policies that can lower the effects of those factors. For a positive learning environment, rich interactions of student-student, student-teacher, student-administration or the other stakeholders should be fostered for an effective classroom management. Considering the limitations of quantitative paradigm, the last recommendation for researchers may be to perform qualitative or mixed research methods to understand the classroom management process comprehensively.

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APPENDIX 1

Studies included in meta-analysis.

Adıgüzel, İ. ve İpek, C. (2016). Okul öncesi öğretmenlerinin sınıf yönetimi becerileri ve tükenmişlik düzeyleri. *International Journal of Eurasia Social Sciences*, *7*(23), 247-273

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