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Classroom management: boosting student success—a meta-analysis review

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ABSTRACT

This study aims to broadly reestimate the influence of classroom management on student achievement by examining variations in study type, sample size, and quality. Using a meta-analysis approach, 14 studies were analyzed, contributing to the body of knowledge in educational management science. The results convincingly demonstrate that effective classroom management positively impacts student achievement across various situations, contexts, and education levels. This meta-analysis confirms that classroom management is a crucial concept educator should prioritize to enhance student achievement in any educational setting. This study contributes to both the theoretical understanding and practical application of educational management by reinforcing the critical role of effective classroom management in enhancing student achievement, offering empirical support that can inform future research and guide educators in implementing evidence-based strategies across various educational settings.

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1. Introduction

Substantially, it can be agreed that classroom management is a systematic, structured concept used by teachers to encourage the growth and creation of the learning environment needed so that students can receive various information and knowledge measurably (Aydin & Karabay, 2020). This also places the concept of classroom management as a mainstream theory, which affects education and becomes an essential pillar behind the success of education. It is not an exaggeration if then various scholars of education examine various educational issues using the concept of classroom management. One of the critical issues of classroom management is the relationship between this concept and students' academic performance. This issue is considered necessary, so it attracts a lot of interest from scholars to study it, inseparable from the assumptions that are the basis of this theory, where this theory is built on behavioristic assumptions, which place student behavior can be shaped through positive and negative reinforcement. Ideally, this kind of tendency should be understood well by a teacher. Understanding this tendency is undoubtedly a reason for teachers to give praise, awards, and *caporal punishment* to shape student behavior, which is idealized (Everston & Emmer, 2017; Marzano & Pickering, 2003). Assumptions are certainly a reason for scholars to seek to understand student behavior and habits, which can sometimes change over time. Educators need to provide various reinforcements so that student behavior is always positive and can support educational goals.

This behavioristic assumption then becomes an argument for teachers to apply positive strategies as a useful concept to discipline students. This strategy is, of course, effective, so it can stimulate students to behave in a pattern that teachers want and agree upon in one education system. Teachers can apply various methods to ensure students behave positively in this context. For example, rewarding good behavior and helping students understand the consequences of their actions. This strategy is certainly

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useful and aligns with the ideal goal of building a positive relationship between teachers and students (Kapur, 2018; Lopes & Oliveira, 2017). The positive relationship between teachers and students is also a pillar of classroom management, determining learning outcomes. This also emphasizes that learning outcomes, the main goal of classroom management, are the needs of all components of education implementation. Not only teachers but also students and school principals. This seems to be understood through Maslow's theory of needs, where through the theory, it can be formulated that students' basic needs include a sense of security and can be accepted in the school environment (Ihensekien & Joel, 2023; Maslow, 1943). The same thing is also attached to the needs of teachers, where they need so that the classroom can run safely and smoothly and the learning process can achieve the targets set. This means that there is an inseparable relationship between the needs of teachers and students.

The relationship between teachers and students cannot be formed just like that, but there must be a process built and able to condition so that students receive the instructions given by the teacher so that the transformation of knowledge can run effectively. In this context, teachers must be able to be models of behavior for students and use a cooperative approach to promote learning, which is social (Bandura, 1978). Efforts to form student behavior per the rules and rules teachers desire are complex and must be achieved systematically. This systematic method is needed so that teachers can successfully internalize knowledge and many values and morality, which are useful for students in living life. One of the important pillars for teachers in achieving and realizing students' needs is to implement rules that are binding and able to control students' behavior, which may interfere and become an obstacle to achieving learning goals. Various explanations from scholars regarding the importance of classroom management have at least become an argument that implementing classroom management is needed as a pillar to achieve student success at various levels of education (Leckey et al., 2016; Stronge et al., 2011). Regarding success, it seems that students can achieve it if they follow the rules and procedures that the teacher has set, and so does the need to obey various binding disciplinary policies.

The narrative of the importance of classroom management, which can be identified from various existing studies, shows that this topic is very important, thus attracting many scholars to conduct studies on classroom management. In this case, there are at least several classifications of studies related to classroom management: The first is a study related to the exploration of classroom management models, and Kounin's study (1979) is included in the category where he tries to identify and successfully formulate practical models that can be applied by teachers in managing the classroom (Kounin, 1979). The second is a study that elaborates on the proactive strategy of classroom management, which elaborates on the form and strategic steps teachers can take. In this case, this strategic step is needed to anticipate problems that may arise, hindering the process and the achievement of learning objectives (Everston & Emmer, 2017). Another classification of studies related to student behavior management belongs to this category, which includes studies conducted by Horner et al. (2010) and Bradshaw et al. (2017). These two studies examined and successfully identified the importance of classroom management and function effectively in managing student behavior (Bradshaw et al., 2010; Horner et al., 2010). Although various existing studies affirm and prove that classroom management has a fairly wide impact on students and educational achievement, very limited studies review the extent of the consistency of classroom management's influence on student achievement at various levels of education.

The relationship between classroom management and student achievement is grounded in theoretical assumptions that frame classroom management as a critical conceptual foundation for teachers to implement strategies that ensure the achievement of learning goals and student targets within an educational system (Chalak & Fallah, 2019). This perspective positions effective classroom management as a vital precondition and a structural pillar supporting student achievement. Building on this foundation, this study aims to systematically estimate the consistency of classroom management's influence on student achievement across various educational levels, while also examining how variations in sample sizes affect the outcomes reported in prior studies. To address these objectives, the article is structured as follows: the introduction outlines the rationale and significance of studying this topic, highlighting its academic and practical value. The second section reviews the theoretical framework that underpins the analysis. The third section details the research methodology, including the design and procedures of this meta-analysis. The fourth section presents the findings derived from a rigorous screening and selection process of relevant studies. The fifth section critically analyzes these findings to identify key insights and

implications. Finally, the conclusion emphasizes the study's contributions, acknowledges its limitations, and suggests directions for future research.

2. Literature review

2.1. How classroom management should be understood?

Substantially, classroom management is defined as an important concept that cannot be ignored, especially when marginalized in educational theory. This concept is very important in its position in the concept of education. Not only is one of the fundamental theories, but the conceptual function of classroom management allows teachers to understand strategic steps and techniques that can be used to encourage and ensure the creation of an effective and more productive learning environment and atmosphere (Afiah, 2018; Aydin & Karabay, 2020). Because this concept is so important in the spectrum of education, it is appropriate to formulate how this concept must be understood so that it is more relevant to the study to be carried out. In this context, at least seven concepts must be explained and elaborated when understanding the concept of classroom management. *First*, classroom management positions teachers' efforts as important when creating a positive learning environment. Efforts to create a positive learning environment can be realized by ensuring the classroom is always neat, organized, and visually attractive. In addition, teachers should ideally provide teaching aids and always update the necessary teaching materials (Wong & Wong, 2009).

Second, a teacher must apply rational and consistent classroom rules in implementing good classroom management. However, this requires an intense communication effort with students so that the various rules applied can be understood by students in a clear, rational, and fair manner (Marzano et al., 2005). Third, a teacher should ideally possess strong time management skills and use time effectively. Since time is crucial in the teaching and learning process, teachers must ensure that all activities adhere to the established schedule. This includes organizing time for lessons, group activities, and individual tasks (Emmer et al., 2006). *Fourth*, in ensuring a safe and effective learning process, a teacher needs to have a strategy for managing student behavior, both positive and negative. This includes teachers' mastery of technical abilities in providing positive reinforcement, understanding the consequences of appropriate caporal punishment, and restorative approaches that are believed to be effective in dealing with student behavior problems (Jones & Jones, 2016). *Fifth*, classroom management also requires clear and open communication between teachers and students, as well as between students and students, which is very important. In this case, teachers should ideally be willing to listen to students and provide constructive feedback (Charles, 2014). *Sixth*, one of the strategies that can be implemented through classroom management is student-centered learning. In this case, this approach involves students effectively in the teaching and learning process. In this condition, the teacher is a facilitator who helps students find and understand concepts, rather than just conveying information (Lemov, 2010). *Seventh*, there needs to be adaptability and flexibility, where teachers must adapt to various situations and student needs. This includes adapting teaching methods and classroom management strategies according to classroom dynamics (Emmer et al., 2006). Finally, teachers must develop positive relationships with students to help create a supportive and inclusive learning environment. In this situation, teachers must show empathy, understand students' individual needs, and appreciate diversity in the classroom (Jones & Jones, 2016). These eight aspects are at least the fundamental foundation for understanding the concept of classroom management. In addition, various narratives and explanations of this dimension show that the concept of classroom management contains systematic methods to ensure that student behavior is in line with the ideal goals of education so as to be able to achieve good academic achievement.

In addition, there are other aspects of management, such as 'the vision of suitable management', which is also believed to affect the learning process. In this case, 'appropriate management' in education is defined as a creative and strategic effort to integrate pedagogical goals, cognitive development, and contextual relevance. This effort is carried out to 'optimize the use of resources' (Biggs & Tang, 2011; Reigeluth, 1999), 'increase student engagement in achieving learning outcomes' (Hattie, 2009), 'promote the importance of lifelong learning' (Kolb, 2023). This means that in general, this kind of management

vision can provide a framework for managing the complexity of education by handling various factors such as variability, constraints of educational institutions, and various demands of society (Freire, 1970). In more detail, there are at least several dimensions of 'suitable management' that are suspected to be able to strongly affect the teaching and learning process, namely: *First*, pedagogical structure, where this pedagogical dimension is centered on the application of teaching strategies that are in line with the desired learning outcomes. These dimensions include: (1) 'constructive alignment', which ensures that learning and assessment must be aligned with educational objectives (Biggs & Tang, 2011); (2) active learning approach, where this method combines two important approaches, namely problem-based learning and collaborative-exercises to improve critical thinking. In addition, Ledezma (2024), elaborates on mathematical modeling in this context, where using real-world examples to teach abstract concepts, and gradually increases complexity to build competence and confidence.

Second, cognitive development, in this case, suitable management emphasizes two main issues, namely: 'scaffolding', which provides structured support gradually; 'metacognitive', where this concept encourages students to think about their thoughts and improves the ability to solve problems (Vygotsky et al., 1980). In mathematical modeling, *scaffolding* includes: (1) guiding students through the initial identification of various problems, and selecting variables; (2) encouraging self-assessment and reflection on the modeling process that is built. In addition, related to another dimension, or other concepts, that can also explain the factors affecting the teaching-learning process is the concept of Ledezma et al. (2024), where there are at least 4 (four) things that should be believed to affect the teaching and learning process, namely: 'pedagogy', 'cognition', 'context', 'assessment' (Ledezma et al., 2024). These dimensions can be identified and applied through the assignment of tasks to analyze climate change data or optimize resources in Industry. This process seems to be able to improve learning to be practical and more meaningful.

2.2. Student achievement: concepts and determinants

Academic achievement is a student's achievement level in the educational process. Generally, this achievement is measured through general instruments such as grades, tests, and specific exams. Conceptually, student achievement includes various dimensions such as academic understanding, skills, and competencies acquired during the learning process (Darling-Hammond, 2000). This kind of meaning then provokes the interest of scholars to study the factors that affect student achievement. This interest is useful because it can provide information related to structural factors that convincingly determine student achievement so that it can be used as a guideline for stakeholders to formulate policies that can be applied to educational institutions. Scholars have successfully identified many factors that are believed to affect student achievement at different levels of education. Schools can influence student achievement without being too tied to the social background and context in which a student was born and raised. Likewise, 'class size', 'qualifications of teaching staff', and 'school size' (Bardach & Klassen, 2020; Darling-Hammond, 2000). In response to this, various schools formulated varying learning standards. Some schools emphasize the quality of lecturers to encourage student achievement (Wan Yusoff & Mansor, 2016). Some schools pay considerable attention to the quality and competence of teachers. This kind of attention is built on the assumption that good teacher qualifications will be the main capital of educators, allowing them to create varied teaching and learning for different levels and characteristics of students (Darling-Hammond, 2000). Of course, the teacher qualification factor is not the only variable that contributes to student achievement. Scholars have successfully identified at least three factors that are convincingly believed to affect student achievement.

The first is the internal factors inherent in a student. This factor includes two forms: (1) intrinsic motivation, where this factor refers to a tendency to achieve higher achievement because they learn for personal satisfaction and curiosity; (2) extrinsic motivation, such as appreciation or recognition, which in its most common form can encourage students to work hard to achieve a single achievement (Ryan & Deci, 2000). Also included are the main components of internal factors: intelligence and cognitive ability. The relationship between intelligence, memory ability, and cognitive ability can be seen in the learning process results, where students with good intelligence and cognitive abilities, in general, can achieve much better than students who lack cognitive abilities (Mayer et al., 2011). It also needs to be

emphasized that this internal factor certainly does not just grow but needs to be accompanied by adequate learning techniques. In this context, effective learning strategies can improve students' academic achievement, including time management, note-taking, and good reading techniques. Because this effective learning technique not only determines the level of knowledge absorption by students but can also be a determinant for students to get better grades (Wittrock, 1986). The second is external factors, which include parental support, the quality of schools and teachers, and peer influence. Parental support includes parental involvement, using socioeconomic capital, and conditioning the home environment that can significantly support the child's academic achievement (Sujarwo & Herwin, 2023). In addition, the quality of schools and teachers is a crucial factor influencing student achievement. High-quality education shapes a teacher's methods and innovations, essential for motivating students to excel (Darling-Hammond, 2000). Also included in the scope of external factors is the influence of peers. In this case, peers can significantly affect student achievement as long as the peer supports and becomes a supporting partner in achieving academic achievement (Ryan, 2001). The last are psychological factors, which can manifest in the form of stress, anxiety, and self-efficacy. Stress and anxiety are determinant factors that can affect student achievement. If the student has a low level of stress and anxiety, they are more likely to enjoy all the learning processes. Thus, of course, the learning process with low stress and anxiety levels can encourage achievement. Meanwhile, self-efficacy refers to high self-confidence and a positive perception of their academic ability (Schunk & DiBenedetto, 2021; Suldo & Shaffer, 2008). When this is positive and adequate, this kind of confidence can drive students to excel.

3. Method

3.1. Data collection

The data sources in this study are the Scopus and Google Scholar databases. Search engines, through search engine features, are used effectively using specific keywords. The query is TITLE-ABS-KEY ('Classroom management' AND 'Student Achievement'). Not only that, but this study also filters articles that are detected to be relevant to the topic of study, using several criteria (Figure 1), which include: (1) the article provides statistical data needed to conduct a meta-analysis, such as the number of samples, publication quality, education level, coefficient correlation value, and the presence or absence of control

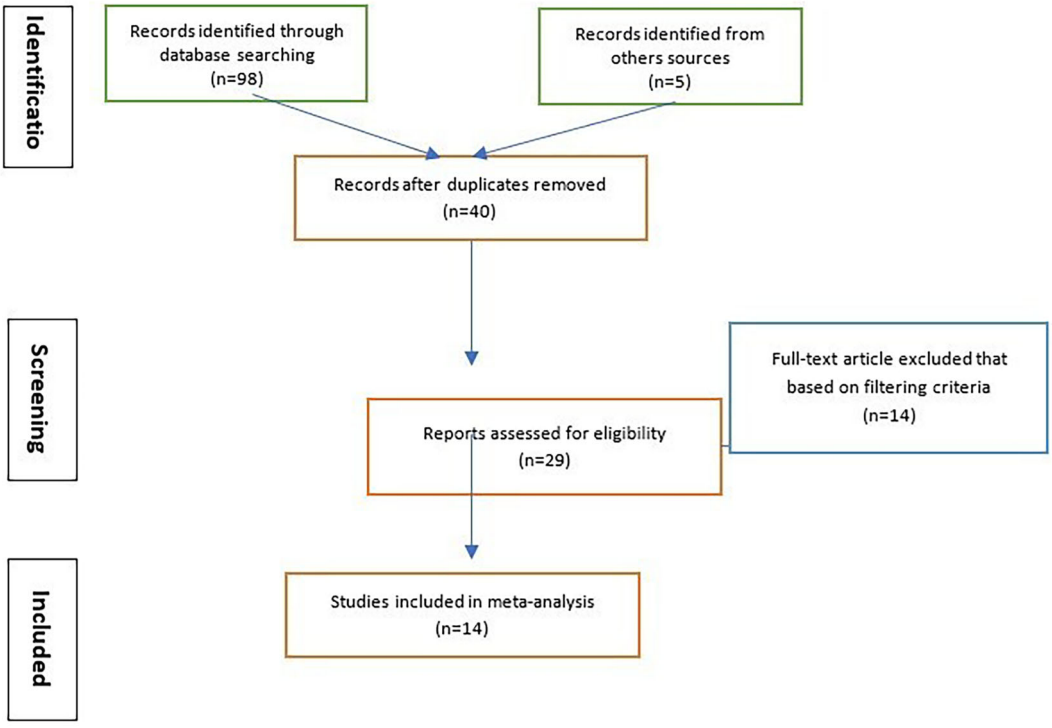

Figure 1. PRISMA flow diagram.

variables; and (2) articles in the form of *full text*, which can be studied qualitatively. These two criteria then narrow down the articles worthy of review with a meta-analysis approach of 14 articles.

3.2. Data analysis

The study used meta-analysis to analyze 15 datasets. In this case, the value of the correlation coefficient and sample size were used to estimate the effect size of classroom management on student achievement at various levels of education. These 15 datasets produced 14 effect sizes from studies published from 1984 to 2023. With the effect size produced, at least meta-analysis as the method of choice, it can estimate how consistently classroom management affects student achievement at various levels of education (Leong et al., 2021). In addition, the robustness test applied in the meta-analysis method and used in this study involved two moderator variables: 'publication quality' and 'education level'. There are at least several reasons why the robustness test in this meta-analysis involves moderator variables, and these reasons include: (1) moderator variables can help explain sources of heterogeneity; (2) moderator variables can help in evaluating the external validity of the findings of the meta-analysis; (3) moderator variables can help reveal how contextual variations affect the results of meta-analysis estimates; (4) moderator variables can be used to identify whether existing biases affect the results of meta-analysis estimates; and (5) moderator variables can help in identifying significant important factors affecting the effectiveness of the intervention and the phenomenon studied (Borenstein et al., 2022; Cooper et al., 2017; Hedges, 1985). This reason is an argument for the importance of robustness tests in meta-analysis so that studies can meet the generalizability criteria. In conducting the analysis, this study used RStudio.

4. Results

The data analysis in this study used Fisher's *r-to-z transformation* of the correlation coefficient value and then into the effect size, which was used to predict the influence of classroom management on student achievement at various levels of education. The value of this transformation is then used to model the relationship of independent variables to dependents, which is based on *the maximum-likelihood* estimator with the 'metaphor' package on RStudio.

4.1. Descriptive statistics

This study involved 14 articles undergoing the screening process. This article was published from 1984 to 2023 (Table 1). Regarding sample size, the article with the least sample is the article by Iswan et al. (2020), which only uses 34 samples, and the largest sample is the McGarity and Butts study (1984), reaching 2476 samples.

The education level of the respondents includes: 'elementary school', 'primary school', 'secondary school', 'high school', and 'university'. In addition, the quality of the publication is calculated through the criteria of COSMOS-E or *checklist for a one-step Meta-Analysis of Survey Evidence*, with due regard to

Table 1. Datasets for meta-analysis.

Author & year	Publication quality	Sample size	Education level	Coefficient correlation	Control variable
Djigic et al. (2011)	6	273	Primary school	0.56	Yes
Hassan Talebi (2014)	6	410	University	0.51	No
Yildiz (2017)	6	140	University	0.33	Yes
Hong 2023)	6	203	University	0.41	Yes
Thi and Nguyen (2021)	6	398	High school	0.17	Yes
Saifi et al. (2018)	6	1800	University	0.67	Yes
Aliakbari and Abdollahi (2014)	6	123	High school	0.18	No
Freiberg et al. (2009)	6	700	Elementary schools	0.5	Yes
Nisar et al. (2019)	6	550	Secondary school	0.37	No
Herman et al. (2022)	6	1450	University	0.17	Yes
Saifullah et al. (2023)	6	240	Secondary school	0.14	Yes
McGarity and Butts (1984)	6	2476	High school	0.51	Yes
Ebimiere et al. (2020)	6	140	Secondary school	0.74	Yes
Iswan et al. (2020)	6	34	Elementary schools	0.34	No

Source: Author's.

quality on 'survey design', 'measurement quality', 'data analysis', 'response rate', and 'potential bias' (Wang et al., 2020). So, the average value of publication quality is 6. This value is calculated because it meets the six criteria on the COSMOS-E scale.

4.2. Effects of classroom management on student achievement

The study involved 14 datasets from 15 articles, with a total of 8957 samples. Although the selected articles used as the source of datasets in this study are relatively few (only 14 articles), these datasets are sufficient to be analyzed using the meta-analysis method. The results of meta-analysis-based estimation can be classified into several forms. The first is weight estimation, which refers to the relative contribution of each study to the combined results or effects in the analysis (Figure 2). In this case, there are 14 weight values at the level of the published study: (1) Djigic et al. (2011), with an estimated effect of 0.5600, a 95% confidence interval: [0.4615; 0.6585], and weight: 7.4%, presumably it can be interpreted that this study shows a moderate effect with a significant contribution to the combined effect, and a relatively narrow confidence interval indicates that the results of this study are quite precise.

As for study (2) Talebi et al. (2015), estimated effect: 0.5100, confidence interval 95%: [0.4266; 0.5934], weight: 7.5%, from the resulting estimation value, it can be understood that the effect of this study is also classified as moderate with a contribution similar to Djigic et al. (2011), with a narrow internal confidence value, so it shows relatively precise results; (3) Yildiz's study (2017) has an estimated effect: 0.3300, a 95% confidence interval: [0.1784; 0.4816], and a weight value: 6.7%, where this estimate shows that this study has a lower effect with a wider confidence interval. This can be interpreted that this study has higher result variability and lower precision than the previous two studies; (4) Hong (2023), with an estimated effect value of 0.4100, a 95% confidence interval: [0.2842; 0.5358], and a weight value: 7.1%. The value of this estimate can be interpreted that the Hong (2023) study is moderate with a considerable contribution and adequate precision (5), while the study of Thi and Nguyen (2021) showed a lower effect with a relatively narrow confidence interval, as well as showing fairly precise results. This interpretation is reflected in the effect estimate value 0.1700, 95% confidence interval: [0.0731; 0.2669] and a weight value of 7.4%; (6) Saifi et al. (2018) as a study that has an estimated effect of 0.6700, a confidence interval of 95%: [0.6357; 0.7043], and a weight value: 7.8%, it can be interpreted that this study shows a fairly high effect with a very narrow confidence interval, so this study shows very precise results and makes a great contribution to the combined effect.

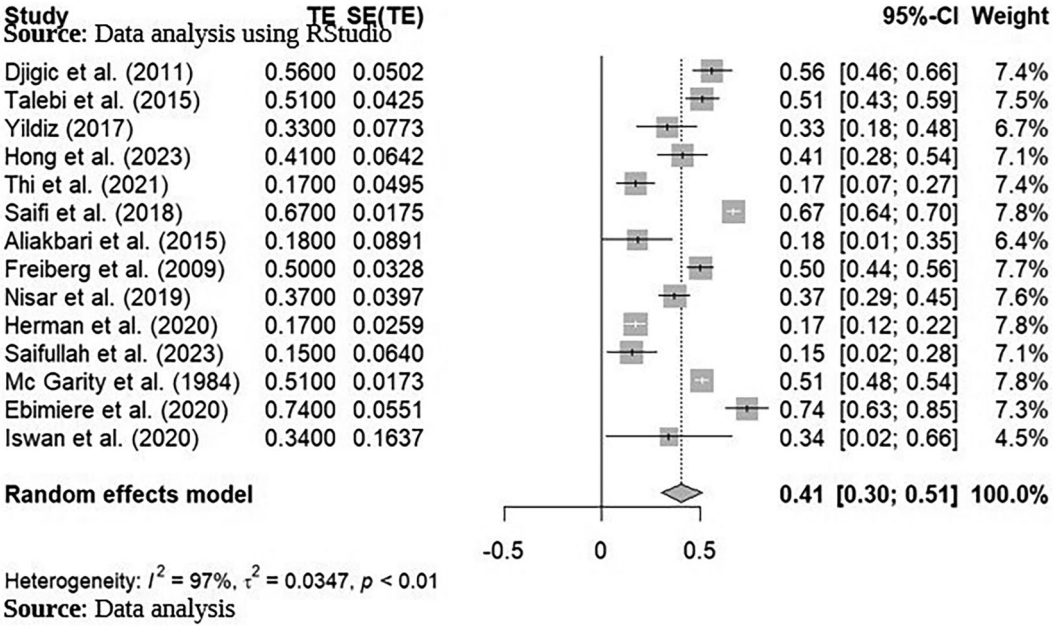

Figure 2. Forest plot 14 studi.

The (7) study of Aliakbari and Bozorgmanesh (2015) had an effect of 0.1800, a confidence interval value of 95%: [0.0055; 0.3545], and a weight value of 6.4%. This estimation value shows that the study of Aliakbari and Bozorgmanesh (2015) has a low effect with a wide confidence interval, thus showing a fairly high variability of results and low precision; (8) the study of Freiberg et al. (2009) has an estimated effect: 0.50000, confidence interval of 95%: [0.4358; 0.5642], weight: 7.7%, where this estimate shows that the study of Freiberg et al. (2009) has a moderate effect with a narrow confidence interval, so the results are quite precise and contribute greatly; (9) the study of Nisar et al. (2019) has an estimated effect of 0.3700, a confidence interval of 95%: [0.2923; 0.4477], a weight value: 7.6%, so it can be interpreted that this study has a moderate effect with a narrow confidence interval, and shows precise results and contributes greatly; (10) the Herman et al. (2022) study had an estimated effect: 0.1700, a 95% confidence interval: [0.0247; 0.2753], and a weight value: 7.1%, which can be interpreted that this study showed a low effect with a very narrow confidence interval, thus showing very precise results; (11) the study of Saifullah et al. (2023) has an estimated effect: 0.1500, 95% confidence interval: [0.0247; 0.2753], weight value: 7.1%, which can be interpreted that this study shows a low effect with a larger confidence interval, shows higher result variability and lower precision; (12) the study of McGarity and Butts (1984) had an estimated effect: 0.5100, 95% confidence interval: [0.4761; 0.5439], weight value: 7.3%, which can be interpreted that this study showed a moderate effect with a very narrow confidence interval, thus showing very precise results and contributing greatly; (13) Ebimiere et al. (2020) with their study had an estimated effect: 0.7400, 95% confidence interval: [0.6320; 0.8480], weight value: 7.3%, which shows that the study has a fairly high effect with a wider confidence interval value, and shows high variability of results but still makes a significant contribution. The last is the study of Iswan et al. (2020), with an estimated effect of 0.3400, 95% confidence interval: [0.0191: 0.6609], with a weight of 4.5%, where this study showed a moderate effect with a very wide confidence interval, as well as showing very high and low precision result variability, and a smaller contribution. These values at least provide information on how much each study affects the estimate of the combined effect in the meta-analysis.

In addition to the 14 effects produced from the study and previously described, the results of the random effect model also need to be elaborated, where the combined effect value is 0.4066 [0.3039; 0.5093], with z: 7.76 and $p < 0.000$. This value indicates that the combined average effect is statistically significant (Cooper et al., 2017). In addition, from the aspect of heterogeneity, the value of t^2 of 0.0347 indicates variability between studies. Value T of 0.1863 shows the standard variation. The I^2 of 96.6% showed high heterogeneity, which means that most of the variation in the effects observed between the studies was due to differences in the characteristics of the studies rather than random errors, and the value of H 5.41 indicates a high level of heterogeneity. In the case of the heterogeneity test, Q value of 380.37 with d.f.: 13 and $p < 0.0001$, there is a significant heterogeneity among these studies. Referring to these estimates, overall, the meta-analysis showed a significant combined effect among the studies analyzed. In addition, it also shows a fairly high heterogeneity, which can then be interpreted to mean that the study's results are quite varied from one study to another.

Another estimate is to detect if there is a bias from existing studies. For this, a funnel plot (Figure 3) is used, where the plot shows variation among the studies analyzed overall. However, by using the Egger test, several estimates can be produced, namely: (1) the p-value of the Egger test: 0.1742407, where with a value greater than 0.05 (Egger et al., 1997), this estimate suggests that there is no significant evidence to conclude that there is a bias in publications. In addition, the standard error value of the intercept is 0.09055137, which can be interpreted as a relatively small value, indicating that the intercept estimate is quite accurate. Thus, it can be affirmed once again that through the Egger test, there is not enough evidence to conclude that this meta-analysis has a publication bias.

This meta-analysis-based estimate convincingly shows that the influence of classroom management at various levels of education on student achievement is positive. This is in line with various existing studies, especially the 14 selected studies that have been analyzed in the study, that classroom management has a positive effect and can encourage student achievement at various levels of education (Aliakbari & Bozorgmanesh, 2015; Djigic & Stojiljkovic, 2011; Ebimiere et al., 2020; Freiberg et al., 2009; McGarity & Butts study, 1984; Güner Yildiz, 2017; Herman et al., 2022; Hong & Phuong Anh, 2023; Iswan et al., 2020; Nisar et al., 2019; Safiullah et al., 2023; Saifi et al., 2018; Talebi et al., 2015; Thi & Nguyen, 2021). The consistency of these results was then confirmed by including many moderator variables—education level, publication quality, sample size, and the existence of control variables, but the p-value showed no significance (sample size:

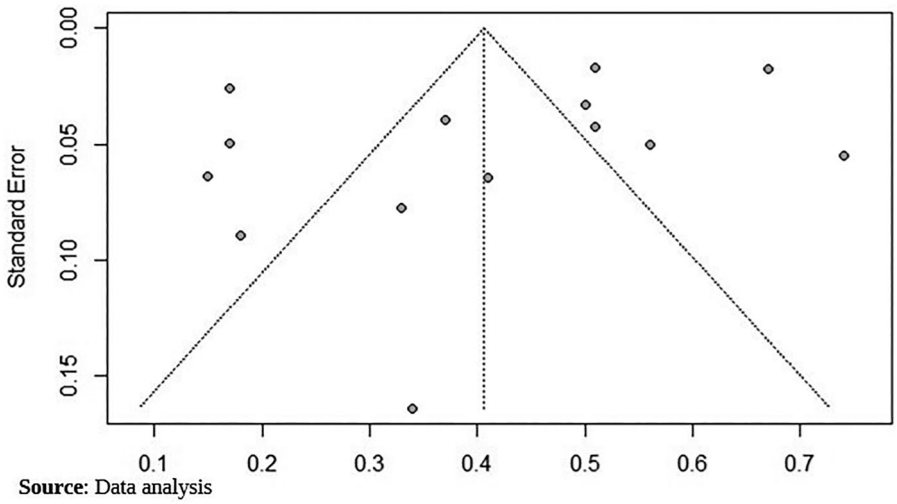

Figure 3. Funnel plot Bias Deteksi.

0.4380, control variable: 0.5932, education level: 0.9267). That is, whether or not there is a moderator variable, an estimate where the influence of classroom management on student achievement at various levels of education is consistent with a combined effect value of 0.4066.

5. Discussion

Classroom management is a concept that is not only complex but also important. Because of this concept's complexity and importance, few scholars have tried to identify how influential this concept and its implementation have been in various aspects of education. One of the important aspects influenced by this classroom management is student achievement. Various existing studies have shown that complete classroom management with various implementations significantly affects student achievement (Aliakbari & Bozorgmanesh, 2015; Djigic & Stojiljkovic, 2011; Ebimiere et al., 2020). In this context, the meta-analysis study also confirmed the consistency of the influence of classroom management on student achievement at various levels of education. The combined effect value resulting from meta-analysis-based estimation reached 0.4066, equivalent to 40.6% of classroom management variables significantly affecting student achievement at various levels of education.

Why does classroom management have a consistent effect on student achievement? The consistency of the influence of classroom management as a concept on student achievement lies in the dimension inherent in this concept, and when applied to the learning process, actually encourages various levels of effectiveness and success of the teaching and learning process and includes the achievement of student achievement expected by schools, parents, and teachers. Marzano et al. (2003), in this case, explained that classroom management can be a pillar of student achievement and is certainly inseparable from the main goal of classroom management to ensure a safe, comfortable, and orderly learning environment. This is also the foundation behind the assumption that well-managed classes are helpful and can foster student participation in achieving much better (Marzano et al., 2003). Emmer and Stough (2001) then also explained that classroom management effectively reduces distractions in the classroom (Emmer & Stough, 2001). By understanding the concept of classroom management, teachers can reduce distractions and ensure that learning time is used to the fullest. The absence of distractions in the classroom and during the teaching and learning process is believed by Emmer and Stough (2001) to be a pre-condition for achievement among students.

Pianta et al. (2012) also explained that the positive interaction between teachers and students is another aspect of classroom management that can support students in achieving their goals. Empirically, this kind of interaction significantly impacts students' academic achievement (Pianta et al., 2012). Positive interactions built by teachers with students impact not only teachers' confidence but also students. They will feel valued and supported by their teachers. This certainly motivates them to be better and more accomplished. In addition to this dimension, it is possible to manage behavior and improve students' discipline by applying classroom management concepts. This is also an important

pillar that is useful for supporting student achievement. This means that positive behavior and consistent discipline allow students to be achievement-oriented. The study of Wang et al. (1993) identified that effectively applied classroom management is one of the most significant factors in fostering students' orientation to excel (Wang et al., 1993). Studies that elaborate on the dimensions of classroom management cannot be separated from the foundations believed to support student achievement. In addition to the studies that have been described, there seems to be a specific study used to review the relationship between classroom management and student achievement, as in this study.

Djigic and Stojiljkovic (2011) successfully identified that a comfortable, safe, and friendly classroom climate and atmosphere, as a product of effective and positive interaction between teachers and students, has consistently been shown to encourage student achievement (Djigic & Stojiljkovic, 2011). This is in line with at least six teacher roles, as introduced by Crosby and Harden (2000), namely: (1) the information provider, (2) the model, (3) the facilitator, (4) the assessor, (5) the planner, and (6) the resource material creator (Crosby & Harden, 2000). This role of teachers is then lived and implemented systematically through classroom management. When teachers succeed in playing a role in these 6 (six) fundamental roles, then teachers not only function as individuals who pour knowledge into students but also act as very important motivators in helping students to achieve consistently. In this context, teachers' motivation will be strengthened and positively accepted by the students when the teacher succeeds in building a positive, deep, and constructive relationship with their students. Talebi et al. (2015) also agreed and succeeded in reaffirming that a friendly school environment between teachers and students is an important factor behind student achievement (Talebi et al., 2015). Even Güner Yildiz (2017) convincingly proved that when teachers do not pay attention to the special needs of students, the ability of students to excel and succeed in passing various school exams shows a significant decline (Güner Yildiz, 2017). An important thing that can be underlined through the existing study, particularly this study, is that classroom management in any situation and at any level of education is significant as a driving factor for student achievement. This finding also strengthens the position of classroom management from year to year, even centuries, and cannot be marginalized by the emergence of new concepts and breakthroughs in the world of education.

5.1. Theoretical contribution

An important contribution of this study lies in the reaffirmation that classroom management consistently influences student achievement at various levels of education—primary school, elementary school, junior and senior high school, and university. In contrast to this study, various previous studies have tested the influence of classroom management in a partial, casuistic manner on student achievement. This is reflected in samples from specific populations. In contrast to this study, which uses meta-analysis, it allows this study to evaluate or reconfirm existing and previously published studies comprehensively. As a result, in this study, classroom management became a strong co-factor influencing student achievement in various situations and different levels of education. Even by including the moderator variables—publication quality, sample size, and use of control variables, the influence of classroom management on student achievement did not change. This means that this study corroborates existing studies, even confirming that classroom management has been a 'determinant factor' that consistently affects student achievement. Therefore, teachers can start by applying various concepts of good classroom management to encourage students to excel.

In addition, the study's conclusions have important ramifications for teacher education as well, especially for the design of programs for initial and ongoing professional development. Giving instructors the tools they need to use efficient classroom management techniques should be a top priority for teacher education programs. This emphasis guarantees that educators are adequately equipped to establish settings that support student success. For instance, including classroom management concepts in teacher preparation programs can improve instructors' capacity to create supportive learning environments, successfully control classroom conduct, and promote positive student-teacher interactions. Additionally, courses for ongoing professional development could concentrate on sophisticated classroom management strategies catered to various contexts and educational levels, allowing teachers to adjust to a variety of learning settings. These initiatives have the potential to close the gap between theory and practice, strengthening the crucial role of classroom management in achieving consistent student success.

6. Conclusion

Through meta-analysis methods, this study can reaffirm that classroom management consistently influences student achievement at different levels of education. Unlike previous studies that only partially examined the influence of classroom management, this study used meta-analysis to re-evaluate existing studies. The results show that classroom management is a powerful factor that affects student achievement, even by including moderator variables. Therefore, teachers can improve student achievement by implementing good classroom management.

6.1. Limitations and recommendations

The study had limitations in the number of studies analyzed, with only 14 studies used, which may not fully represent a wider variety. Other limitations include a less diverse population, variations in study quality, and a lack of moderator variables considered. For future research, it is recommended to expand the number of studies analyzed and include a more diverse population to improve the generalization of results. Additionally, it is important to consider more moderator variables and conduct longitudinal research to understand the influence of classroom management on student achievement in the long term. A stricter evaluation of the quality of the studies included in the meta-analysis is also needed to ensure the reliability of the results. Based on these findings, teachers and educators are encouraged to continue to develop and implement effective classroom management practices to improve student achievement.

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