

TEACHER COMPETENCE, LEARNING MEDIA, AND MOTIVATION IN RELATION TO ELEMENTARY SCHOOL EDUCATION: A SYSTEMATIC LITERATURE REVIEW

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Abstract

Improving learning outcomes in elementary education requires a comprehensive understanding of multiple educational factors that contribute to effective teaching and learning. This study aims to systematically synthesize empirical evidence regarding teacher competence, instructional media, and learning motivation in relation to elementary school students' learning outcomes through a Systematic Literature Review (SLR). The review followed the PRISMA 2020 guidelines, encompassing the stages of identification, screening, eligibility assessment, and inclusion. Literature was retrieved from Scopus, SINTA, and Google Scholar, yielding 145 records, of which 20 empirical studies published between 2020 and 2025 met the predefined inclusion criteria and were included in the qualitative synthesis. The findings were analyzed using thematic synthesis and organized into four recurring themes: teacher competence, instructional media, learning motivation, and competence-media integration. The synthesis indicates that teacher competence is consistently associated with instructional quality, while interactive instructional media support students' engagement and conceptual understanding when integrated appropriately into classroom practices. Learning motivation is frequently reported as an important learner-related factor associated with participation, persistence, and academic achievement. However, variations across studies suggest that these relationships are influenced by differences in educational contexts, instructional approaches, and methodological designs. This review contributes by integrating fragmented empirical evidence into an integrative conceptual framework that organizes recurring research patterns and contextual relationships among the reviewed variables. The findings provide theoretical guidance for future research and practical implications for teacher professional development, instructional innovation, and educational policy aimed at improving elementary school learning outcomes.

Keywords: teacher competence; learning media; motivation; systematic literature review

Abstrak

Peningkatan hasil belajar dalam pendidikan dasar tetap menjadi prioritas global yang memerlukan pemahaman komprehensif terhadap berbagai faktor pendidikan yang berkontribusi pada pembelajaran yang efektif. Penelitian ini bertujuan untuk mensintesis secara sistematis bukti empiris mengenai kompetensi guru, media pembelajaran, dan motivasi belajar dalam kaitannya dengan hasil belajar siswa sekolah dasar melalui pendekatan Tinjauan Literatur Sistematis (Systematic Literature Review/SLR). Tinjauan ini mengikuti pedoman PRISMA 2020, yang mencakup tahapan identifikasi, penyaringan, penilaian kelayakan, dan penyertaan. Literatur diperoleh dari Scopus, SINTA, dan Google Scholar, menghasilkan 145 rekaman, dan 20 di antaranya merupakan studi empiris yang diterbitkan antara tahun 2020 dan 2025 yang memenuhi kriteria inklusi yang telah ditetapkan sehingga disertakan dalam sintesis kualitatif. Temuan dianalisis menggunakan sintesis tematik dan diorganisasikan ke dalam empat tema yang berulang: kompetensi guru, media pembelajaran, motivasi belajar, dan integrasi kompetensi-media. Sintesis menunjukkan bahwa kompetensi guru secara konsisten berhubungan dengan kualitas pembelajaran, sementara media pembelajaran interaktif mendukung keterlibatan dan pemahaman konseptual siswa ketika diintegrasikan secara tepat ke dalam praktik kelas. Motivasi belajar sering dilaporkan sebagai faktor penting terkait pembelajaran yang berhubungan dengan partisipasi, ketekunan, dan pencapaian akademik. Namun, variasi antar studi menunjukkan bahwa hubungan-hubungan tersebut dipengaruhi oleh perbedaan konteks pendidikan, pendekatan instruksional, dan desain metodologis. Tinjauan ini berkontribusi dengan mengintegrasikan bukti empiris yang terfragmentasi ke dalam kerangka konseptual integratif yang mengorganisasikan pola penelitian yang berulang dan hubungan kontekstual di antara variabel-variabel yang ditinjau. Temuan ini memberikan panduan teoretis bagi penelitian mendatang dan implikasi praktis bagi pengembangan profesional guru, inovasi instruksional, dan kebijakan pendidikan yang bertujuan meningkatkan hasil belajar siswa sekolah dasar.

Kata Kunci: kompetensi guru; media pembelajaran; motivasi; tinjauan literatur sistematis

Received : 2026-05-31
Revised : 2026-07-10

Approved : 2026-07-18
Published : 2026-07-31



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Introduction

Improving learning outcomes at the basic education level remains a global priority, as this stage of education lays the foundation for students' literacy, numeracy, critical thinking skills, and lifelong learning competencies. Although various continuous reforms have been implemented in education systems, gaps in learning achievement still persist in many countries. The results of the 2022 Programme for International Student Assessment (PISA) report indicate that student performance in mathematics, reading, and science remains below the average of member countries of the Organisation for Economic Co-operation and Development (OECD) in several education systems, including Indonesia. This shows that challenges in delivering quality and equitable learning continue to exist (OECD, 2023). Similarly, UNESCO emphasizes that improving the quality of education requires strengthening teacher competence, creating inclusive learning environments, and ensuring equal access to high-quality educational resources (UNESCO, 2024). Furthermore, the World Bank emphasizes that foundational learning at the primary education level is critical for developing the quality of human capital, and improving teacher quality as well as implementing effective teaching methods remain among the most impactful strategies for enhancing student learning outcomes (Bank, 2024). These international findings indicate that improving student learning outcomes at the primary education level requires a comprehensive understanding of various educational factors, and should not focus on only one aspect.

Recent studies consistently show that teacher competence has a positive relationship with students' academic achievement. Across various educational contexts, pedagogical competence has been proven to support effective classroom management, the development of learning plans tailored to students' needs, and the implementation of meaningful assessment. Meanwhile, professional competence enables teachers to deliver subject matter accurately, and social competence plays a key role in fostering positive interactions within the classroom. Overall, these findings indicate that teacher competence is a multidimensional concept that supports the learning process at the primary education level.

Research published over the past five years shows that learning media is increasingly shifting from conventional tools toward interactive digital resources. While most studies report positive benefits of learning media for student engagement and learning outcomes, the extent of its impact can vary depending on instructional design, readiness to use technology, and individual student characteristics.

Motivation is also consistently recognized as one of the critical factors in education, linked to student participation, persistence, and academic achievement. Recent research indicates that students with higher learning motivation generally demonstrate better engagement and academic performance. However, there are differing perspectives among studies regarding how motivation is positioned within the conceptual framework, meaning a deeper theoretical explanation is still required.

Table 1. Summary of Reviewed Sources

No	Author	Focus	Findings	Limitation
1	(Subaeti et al., 2024)	Learning Media	Positive relationship	Only one school
2	(Muslim, 2025)	Teacher Competence	Related to learning outcomes	Small sample size
3	(Widiastuti et al., 2026)	Motivation	Related to the results	Data collection was conducted at a single point in time
4	(Badriyah et al., 2026)	Teacher Competence	Improving motivation	Limited to one area
5	(Idzni & Prasajo, 2025)	Teacher Competence	Positive contribution	No integrated model has yet been developed
6	(Ndruru et al., 2025)	Learning Media	Improving language skills and student engagement	Small sample size (50 students); the study was limited only to English vocabulary material and conducted in a single school setting
7	(Esengulova et al., 2025)	Teacher Competence	Training enhances teachers' competence in delivering inclusive instruction	Places greater emphasis on the development of inclusive competence rather than on student learning outcomes
8	(Shi et al., 2025)	Teacher Competence	TPACK-based training	Does not directly measure or examine student learning outcomes
9	(Mățã et al., 2026)	Motivation	Online learning	The research findings cannot be directly generalized to the primary school level
10	(Riono & Fauzi, 2022)	Learning Media	The use of Canva improves student motivation and learning outcomes	Some students were unable to access Canva due to limitations in the devices they used

No	Author	Focus	Findings	Limitation
11	(Ginting et al., 2022)	Motivation	Enhancing students' motivation to learn mathematics independently	Restricted sample
12	(Surahmi et al., 2022)	Teacher Competence	Most primary school teachers possess the competence to implement integrated learning	Does not analyze its impact on student learning outcomes
13	(Rahmadhani & Quro, 2022)	Learning Media	The use of Animaker improves the science learning outcomes of primary school students	Focuses only on science subject instruction
14	(Lenny et al., 2026)	Learning Media	The integration of Problem-Based Learning (PBL) and Canva enhances students' motivation and academic achievement	Restricted to only one school, one subject area, and a limited number of participants
15	(Badara et al., 2024)	Teacher competence	Classroom Action Research-Based Learning improves teachers' competence as well as student learning outcomes	The research context is limited to primary schools in coastal areas
16	(Budiharti et al., 2024)	Motivation	Higher learning motivation is associated with better learning outcomes in social studies	Small sample size and use of a descriptive-correlational research design
17	(Christanto et al., 2025)	Motivation	Interactive PowerPoint	Limited to the IPAS subject for Grade III and only one school
18	(Ifah Larasati & Astuti, 2025)	Learning Media	Problem-Based Learning (PBL) using 3D animation	Restricted exclusively to science instruction and

No	Author	Focus	Findings	Limitation
19	(Pangestu et al., 2024)	Motivation	Project-Based Learning (PjBL)	practical experiments Focuses only on science subject learning
20	(Maulana et al., 2025)	Motivation	Animated video	Findings that are context-specific

Overall, previous studies reveal several consistent patterns. First, teacher competence is widely associated with improved student learning outcomes. Second, learning media plays a supportive role in creating meaningful learning experiences. Third, motivation is frequently discussed as a key educational factor linked to student academic achievement. However, these studies generally examine these variables separately, employ cross-sectional quantitative research designs, and focus on specific subjects or local contexts. Consequently, current knowledge does not yet provide a comprehensive picture of how these variables are addressed simultaneously in educational research at the primary school level.

Existing studies have tended to focus on only one variable at a time, while there is no recent systematic literature review that integrates empirical evidence regarding teacher competence, learning media, and motivation within a single conceptual framework related to primary education.

The novelty of this study lies in its integrated synthesis of the latest empirical evidence concerning teacher competence, learning media, and motivation. Unlike previous research that examined these variables in isolation, this review organizes existing findings into a unified conceptual framework, identifies recurring research patterns, highlights unresolved discrepancies in results, and proposes directions for future inquiry. This study does not aim to test causal relationships; rather, it serves to consolidate separate findings into a coherent understanding of the factors associated with primary school students' learning outcomes.

Accordingly, this research aims to systematically review and summarize empirical evidence regarding teacher competence, learning media, and motivation, as well as their relevance to primary education. More specifically, this review identifies major research trends, synthesizes consistent findings as well as variations reported in recent studies, and develops an integrated conceptual framework to support future research and educational practice.

The innovation of this work consists in constructing a conceptual synthesis that integrates teacher competence, learning media, motivation, and primary school students' learning outcomes into a comprehensive relational model. Whereas earlier studies have tended to examine only partial relationships between variables, this research offers a more holistic perspective by identifying patterns of association, mechanisms of direct influence, and potential indirect effects among all four variables. Using a systematic literature review approach, this study not only summarizes existing findings but also builds new conceptual understanding relevant to the development of educational theory and practice in primary education. The focus specifically on the primary school context further strengthens its contribution, given the limited number of studies that have explicitly examined the integration of these four variables at the basic education level.

Research Methods

This study employs the Systematic Literature Review (SLR) method, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020)

guidelines. This ensures that the processes of identification, screening, eligibility assessment, and article selection are carried out in a systematic, transparent, and replicable manner. Literature searches were conducted across the Scopus, SINTA, and Google Scholar databases using a combination of keywords linked by Boolean operators: teacher competence, learning media, motivation, and Systematic Literature Review. All search results were exported to reference management software to identify and remove duplicate records. Inclusion criteria comprised empirical research articles published between 2020 and 2025, available in full text, written in either Indonesian or English, and focused on the primary school education level. Articles in the form of literature reviews, editorials, non-peer-reviewed conference proceedings, and studies conducted at educational levels other than primary school were excluded, as illustrated in the flowchart below.

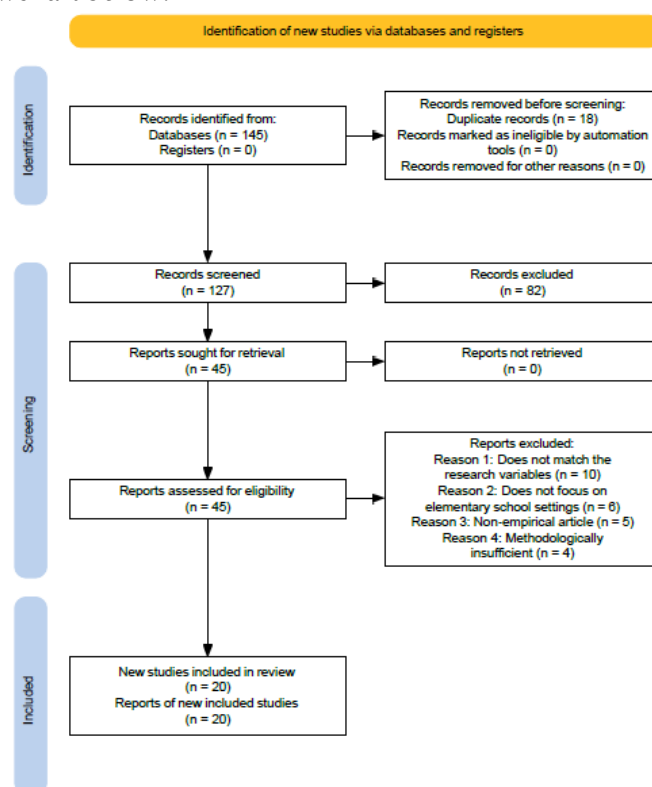


Figure 1. PRISMA 2020 Flow Diagram

The selection process consisted of four main stages: Identification, Screening, Eligibility, and Included Studies.

In the Identification stage, 145 articles were obtained from three academic databases: Scopus, SINTA, and Google Scholar (Databases = 145), while no records were retrieved from trial or research registers (Registers = 0). Following this, duplicates were identified and removed, resulting in the exclusion of 18 duplicate articles. No articles were eliminated using automated tools or for other reasons (n = 0). Accordingly, 127 articles proceeded to the screening stage.

During the Screening stage, these 127 articles were assessed based on their titles and abstracts to determine their relevance to the research objectives. The results showed that 82 articles did not meet the criteria and were therefore excluded. A total of 45 articles were then selected for full-text retrieval (reports sought for retrieval). All of these were successfully obtained in full text, so no articles were excluded due to unavailability (Reports not retrieved = 0).

The Eligibility stage involved a comprehensive review of the 45 full-text articles. At this stage, 25 articles were excluded according to the predefined exclusion criteria: 10 did not align with the research variables, 6 were not conducted at the primary school level, 5 were non-empirical works such as literature reviews or commentaries, and 4 did not adequately describe their research methods.

In the final Included Studies stage, 20 empirical studies were deemed to satisfy all inclusion criteria. These were subsequently included in the qualitative synthesis process for further analysis regarding the relationships between teacher competence, learning media, and learning motivation in the context of primary education.

Results and Discussion

Descriptive Characteristics of the Selected Studies

Following the PRISMA 2020 selection procedure, a total of twenty empirical studies published between 2020 and 2025 were included in the qualitative synthesis. The selected articles were sourced from the Scopus, SINTA, and Google Scholar databases, and examine the relationships between teacher competence, learning media, learning motivation, and primary school students' learning outcomes. Most of the studies employed a quantitative approach, primarily using correlational, quasi-experimental, and experimental designs, while only a few applied qualitative methods or focused on teacher professional development.

The reviewed studies were grouped into four main themes: teacher competence, learning media, learning motivation, and the integration of competence and media. Research on teacher competence generally investigates aspects of pedagogical, professional, personal, social, and technological competence. Meanwhile, studies on learning media focus largely on interactive and digital media, such as Canva, Augmented Reality, interactive PowerPoint, audiovisual media, Animaker, and three-dimensional animation. Research on learning motivation addresses both students' intrinsic and extrinsic motivation, and several studies also examine how teacher competence and learning media relate to improving the quality of instruction in primary education.

Thematic Synthesis of Findings

The results of the synthesis from this literature review identified four main themes that consistently emerged in previous empirical studies. Rather than presenting the findings of each study separately, this review organizes the available evidence into thematic patterns to reveal similarities, variations in results, and relevant implications for primary education.

Table 2. Thematic Synthesis of Findings

Main Topics	Number of Studies	Consistent Results	Differences in Findings Across Studies	Educational Implications
Teacher Competence	5	Pedagogical and professional competence are consistently associated with improvements in the quality of instruction and students' academic achievement	The magnitude of this influence varies depending on the teacher's teaching experience, support from the school, and participation in professional	Continuous professional development for teachers is highly necessary

			development programs	
Learning Media	6	Interactive and digital media can enhance student engagement, conceptual understanding of the subject matter, and active participation in classroom learning activities	Its effectiveness depends on the design of instruction, the quality of the media used, and the teacher's readiness to implement it	Learning media should be integrated with appropriate instructional approaches, rather than being used in isolation or as a standalone tool
Motivation	6	Learning motivation is consistently associated with higher levels of participation, perseverance in learning, and better academic outcomes	The concept of learning motivation is understood and defined differently across various studies and educational contexts	A student-centered learning environment should be developed to foster intrinsic learning motivation
Integration of Competence and Media	3	Teacher competence and learning media complement each other in improving the quality of the learning process	Strategies for integrating the two vary depending on the availability of technological infrastructure and the context of instruction	Comprehensive learning planning is required to achieve optimal learning outcomes

Teacher Competence

The studies reviewed consistently indicate that teacher competence is one of the most significant factors associated with the learning outcomes of elementary school students. Pedagogical competence enables teachers to design meaningful instruction, manage classrooms effectively, and implement appropriate assessments; while professional competence supports the accurate delivery of subject matter and informed decision-making throughout the learning process. Furthermore, teachers must possess practical classroom skills to adapt instructional materials, apply learning strategies suited to individual student needs, and use approaches such as scaffolding techniques that help identify each student's learning requirements and provide targeted instructional support (Esengulova et al., 2025). Nevertheless, the studies reviewed also reveal considerable variation in the strength of this relationship. These differences appear to be influenced by contextual factors such as the availability of school facilities, length of teaching experience, support from school leadership, and opportunities to participate in professional development activities. Accordingly, teacher competence should be understood as a

multidimensional concept, whose role and contribution depend heavily on the overall conditions of the educational environment.

Learning Media

Learning media emerged as the second major theme identified in the literature reviewed. Most studies conclude that interactive learning media — such as Canva, PowerPoint, Augmented Reality, animated videos, and three-dimensional animations — can increase student engagement and facilitate conceptual understanding of the subject matter. To sustain students' attention and minimize disruptions during the learning process, schools should use media that provides an interactive, engaging, and meaningful learning experience. By implementing such tools, schools can help students remain focused on the lesson content and avoid distractions (Ndruru et al., 2025). However, the synthesis of findings shows that learning media does not automatically improve learning outcomes. A number of studies report only weak or even non-significant effects when such media is poorly integrated into the learning process, or when teachers lack adequate technological competence. Consequently, learning media should be viewed as a supportive instructional tool, whose effectiveness depends more on the quality of its implementation than on the sophistication of the technology itself.

Motivation

Motivation emerged as one of the student-related factors most consistently reported across all studies reviewed. Students with higher motivation generally demonstrate greater engagement, perseverance in learning, active participation in class, and better academic achievement. The literature examined also indicates that higher learning motivation is associated with a stronger desire to complete challenging learning tasks, participate actively in classroom activities, and experience a more positive and comfortable learning environment. When motivation is high, students become more willing to take on difficult assignments, engage actively, and feel at ease throughout the learning process. Additional positive outcomes include increased creativity, the use of more comprehensive learning strategies, and improved academic performance (Măță et al., 2026). Even so, the conceptualization of motivation varies widely across previous studies. Some investigations describe motivation as a factor that independently influences learning outcomes, while others frame it as an important supporting element within the learning process. Given that this study employs a Systematic Literature Review rather than statistical modeling, these findings should be interpreted as reflecting differing conceptual perspectives across various empirical studies rather than as evidence supporting any single causal mechanism.

Integration of Competence and Media

The synthesis of the reviewed literature reveals that teacher competence and learning media are closely interrelated in supporting the learning outcomes of elementary school students. The two factors do not operate independently; instead, teachers with adequate competence are better able to select, develop, and integrate learning media that align with students' developmental stages and the intended learning objectives. According to the various studies examined, digital learning media such as Canva, Augmented Reality, interactive PowerPoint, animated videos, and three-dimensional animations have consistently proven effective in enhancing student engagement, conceptual understanding, and classroom participation when implemented by teachers with sufficient pedagogical skills. Existing evidence also indicates that learning media repeatedly contributes to improving the quality of

the learning process by encouraging students to become more active, focused, and involved in every learning activity. In addition to fostering greater student activeness and focus during lessons, the use of such media also helps raise their overall academic performance (Rahmadhani & Quro, 2022). These findings indicate that the benefits of learning media in education are determined not only by its technological advantages, but also by teachers' pedagogical ability to integrate it effectively into meaningful learning experiences.

Conclusion

This systematic literature review synthesizes evidence from 20 empirical studies published between 2020 and 2025 to examine the relationships among teacher competence, learning media, learning motivation, and the learning outcomes of elementary school students. The results of the synthesis indicate that these variables are consistently discussed in the literature as interrelated factors influencing educational success at the primary level. Nevertheless, the studies reviewed also reveal considerable variation in research contexts, instructional approaches, and conceptual frameworks, suggesting that learning outcomes cannot be explained by any single educational factor alone.

Theoretically, this study contributes by integrating separate findings into a comprehensive conceptual framework that summarizes recurring patterns in previous research, rather than testing causal relationships. Practically, the findings emphasize the importance of enhancing teachers' pedagogical, professional, social, and technological competencies; promoting the effective integration of learning media; and creating learning environments that foster student motivation and participation.

These results also carry important policy implications: relevant stakeholders in education should prioritize the continuous professional development of teachers, equitable access to learning technologies, and the implementation of integrated instructional strategies all aimed at improving teacher competence, the quality of instruction, and student motivation simultaneously.

On the other hand, this review has several limitations. Its scope is restricted to studies published between 2020 and 2025 and sourced from specific academic databases; furthermore, most of the analyzed studies employ quantitative cross-sectional designs, which limits the breadth of interpretation. Accordingly, future research is recommended to expand the evidence base by utilizing a wider range of international databases, adopting longitudinal and mixed-method designs, and covering more diverse educational settings. Subsequent empirical studies should also test and refine the integrated conceptual framework proposed in this review, thereby providing stronger evidence to support the development of educational theory, policy, and practice in efforts to improve the learning outcomes of elementary school students.

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