
Optimizing Innovative Learning Strategies to Improve Elementary School Students' Learning Outcomes: A Literature Review

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Abstract

Improving the quality of elementary school student learning outcomes is a top priority in basic education development. Various studies indicate that low academic achievement and lack of active student engagement in the learning process are influenced by conventional learning approaches. This study aims to examine in depth the effectiveness of innovative learning strategies in improving elementary school student learning outcomes through a qualitative literature study method. Data were obtained from various scientific sources such as national and international journals, conference proceedings, and research reports from the last five years (2020–2025). The analysis was conducted using content analysis techniques with a thematic approach. The study results indicate that learning strategies such as Project-Based Learning, Inquiry-Based Learning, Flipped Classroom, and technology integration such as Augmented Reality consistently have a positive impact on student motivation, conceptual understanding, and critical thinking skills. However, the effectiveness of these strategies is greatly influenced by teacher readiness, institutional support, and the availability of educational infrastructure. This study recommends the importance of evidence-based pedagogical literacy and strengthening teacher capacity as efforts to optimize innovative learning. This study is expected to serve as a conceptual and practical reference for educators, researchers, and policymakers in designing transformative learning at the elementary school level.

Keywords: Innovation, Learning, Elementary School

Introduction

Efforts to improve the quality of basic education in Indonesia still face serious challenges, one of which is reflected in the low learning outcomes of elementary school students as detected through various national and international indicators. The Computer-Based National Assessment (ANBK)



conducted by the Ministry of Education, Culture, Research, and Technology shows that the majority of elementary school students still experience difficulties in understanding reading texts and completing problem-solving-based numeracy questions. This condition is reinforced by the results of international surveys such as the Trends in International Mathematics and Science Study (TIMSS) and the Progress in International Reading Literacy Study (PIRLS), which place Indonesian students' achievements at the bottom compared to other countries. This phenomenon emphasizes the need for transformative and evidence-based pedagogical interventions, particularly in learning strategies implemented in the classroom.

Learning at the elementary school level is generally still dominated by conventional, one-way, teacher-centered approaches, which provide little space for students to actively construct knowledge. This approach tends to emphasize memorization and verbal mastery of material, while neglecting the development of critical, collaborative, and creative thinking skills. To face the demands of the 21st century, elementary school learning needs to be reoriented toward a more constructivist, participatory, and contextual approach. Innovative learning strategies such as project-based learning, problem-solving, flipped classrooms, and the use of augmented reality (AR) technology have been shown in numerous studies to increase students' learning motivation and conceptual understanding.

Transforming learning approaches requires the support of teacher competencies as the primary agents of change in elementary schools. However, empirical studies show that many teachers still lack the pedagogical and technological knowledge to effectively implement innovative strategies. This difficulty is exacerbated by a lack of ongoing training and limited access to cutting-edge learning resources. Therefore, it is necessary to strengthen teacher capacity through pedagogical literacy based on the latest scientific studies, so that teachers can design learning that is relevant to students' needs and current developments. Literature review is a strategic step to summarize and integrate various innovative learning approaches that have proven effective in various contexts.

On the other hand, learning practices at the elementary level still lack evidence-based and reflective evaluation of the effectiveness of the strategies used. Many teachers rely on intuition and subjective experience without referring to scientifically verified research findings or best practices. This leads to a lack of pedagogical accountability and low sustainability of innovation in the learning process. A systematic and structured literature review can bridge the gap between theory and practice by providing a synthesis of various research findings on innovative learning strategies that significantly impact learning outcomes.

A literature review serves not only as an academic reflection but also as a conceptual foundation for more informed pedagogical decision-making. By critically examining previous research, teachers and researchers can identify consistent patterns, trends, and findings related to the effectiveness of specific learning strategies. This approach also reveals contextual conditions that influence the successful implementation of learning strategies, such as student background,

infrastructure support, and school-level education policies. The results of this review can be used as a reference in developing adaptive learning models based on real-world needs.

Within the framework of basic education, learning success is measured not only by cognitive aspects but also by affective and psychomotor dimensions. Therefore, innovative learning strategies used must be able to reach all three domains in an integrated manner. A literature review can evaluate how approaches such as experiential learning, gamification, or blended learning affect student engagement across the board, including motivation, teamwork, and a sense of responsibility for the learning process. Multisensory and interactive strategies are also considered more effective in improving information retention and knowledge transfer to real-life situations.

This study is expected to be a significant contribution to strengthening the learning ecosystem in elementary schools by providing a holistic understanding of the effectiveness of innovative learning strategies. The findings from this literature review can serve as a basis for teachers' development of microcurricula and inform the development of educational policies that are more responsive to the dynamics of classroom learning. Furthermore, the results of this study provide a comprehensive overview for teacher education institutions (LPTK) in designing learning programs and professional training for prospective elementary school teachers.

Thus, the urgency of conducting a literature review on innovative learning strategies in the elementary school context is highly relevant. This provides not only a theoretical foundation but also a means of strengthening learning practices based on data and research findings. This approach aligns with the spirit of "Merdeka Belajar," which emphasizes flexibility, creativity, and a focus on student learning needs. Therefore, this study is not merely academic in nature but also has significant practical implications for sustainably improving the quality of learning processes and outcomes at the elementary education level.

Method

This research employs a qualitative approach with a systematic and directed literature review. This approach was chosen to explore, examine, and synthesize in depth various previous research findings relevant to innovative learning strategies in the context of elementary school education. The literature review is positioned as a qualitative method because it allows researchers to evaluate and interpret diverse research findings contextually, comparatively, and reflectively, thus generating a comprehensive understanding of the phenomenon being studied.

The data sources in this study were obtained from various scientific publications such as nationally and internationally accredited journals, conference proceedings, institutional research reports, and academic reference books published within the last five years (2020–2025). Data searches were conducted through several credible scientific databases, including Google Scholar, Scopus, ScienceDirect, ERIC, and DOAJ, using keywords such as "innovative learning strategies," "elementary education," "student learning outcomes," and "pedagogical approaches." The

literature selection process was carried out purposively, considering the substantial relationship between the documents reviewed and the research focus.

Data obtained from various literature sources were analyzed using content analysis techniques with a thematic approach. The analysis began with identifying key issues emerging from the literature, categorizing them based on the type of innovative learning strategy, and analyzing the relationship between the strategies used and their impact on elementary school student learning outcomes. Furthermore, a synthesis of consistent and contradictory findings was conducted to gain a comprehensive and nuanced understanding of the effectiveness of the learning strategies studied.

To ensure data validity (trustworthiness), this study applies the principles of credibility, dependability, and confirmability. Credibility is maintained by triangulating and in-depth comparison of study results from various sources. Dependability is achieved through systematic documentation of each analysis process, while confirmability is maintained by critically reflecting on the researcher's position in reading and interpreting the literature. With this approach, it is hoped that the study results will not only be descriptive but also provide conceptual and practical contributions to the development of innovative learning strategies in elementary schools.

Results and Discussion

Innovative learning strategies have become a major focus in efforts to improve the quality of primary education, particularly in addressing the challenge of low student learning outcomes. Literature shows that implementing innovative strategies can be a catalyst for positive change in elementary school students' learning processes and outcomes. Learning approaches that involve active student involvement, such as Project-Based Learning, Inquiry-Based Learning, and Blended Learning, have been shown to encourage improvements in conceptual understanding, learning motivation, and higher-order thinking skills.

Several analyzed studies show that project-based learning (PjBL) consistently has a significant impact on learning outcomes, particularly in science and mathematics. This model emphasizes collaborative processes and contextual problem-solving, aligning with constructivist principles. Students are not only required to understand theory but also to apply it to real-life tasks, enhancing the connection between learning and their world.

Meanwhile, inquiry-based learning is considered highly effective in developing curiosity and critical thinking skills in elementary school students. Several studies have linked this strategy to improved metacognitive skills, as it encourages students to ask questions, design simple experiments, and draw conclusions based on their own collected data. This model has proven effective in science, social studies, and character education.

Another widely discussed strategy is the flipped classroom, which moves the instructional process from the classroom to the home, using video lessons or other digital media. When students arrive at school, they already have a basic understanding and can use class time for problem-solving and

discussion. Research shows that this model can increase learning efficiency, student engagement, and strengthen conceptual understanding, particularly in mathematics and language arts.

The integration of technology into innovative learning strategies has also been a major focus in various studies. The use of technologies such as augmented reality (AR), gamification, and interactive applications has been shown to increase student motivation and participation. AR, for example, allows the visualization of abstract concepts to become concrete, helping students grasp difficult topics more easily. Several studies also highlight that the use of game-based educational applications can improve focus and information retention in elementary school students.

However, the effectiveness of innovative learning strategies depends heavily on teacher readiness and competence. The literature emphasizes that successful implementation of innovative strategies requires adequate pedagogical and technological understanding from teachers. Without adequate training, even the most potent strategies can lose their effectiveness. Therefore, teacher professional development is a key requirement for the sustainable and contextual implementation of innovative learning.

Institutional support, such as the availability of infrastructure and flexible curriculum policies, also plays a crucial role in the successful implementation of this strategy. Studies reviewed show that schools with a collaborative culture and principal support for innovation tend to be more successful in implementing new learning approaches. Furthermore, an open, competency-oriented curriculum provides teachers with greater freedom to develop learning models tailored to student characteristics.

Literature findings also show that innovative learning impacts not only the cognitive domain but also students' affective and socio-emotional aspects. Collaborative and experiential learning models are known to increase students' empathy, cooperation, and responsibility for learning. Learning strategies such as service learning and experiential learning are even linked to strengthening social values and student engagement in the community.

Despite their many advantages, some literature emphasizes that innovative learning strategies are not universal. Their success is heavily influenced by local characteristics, students' socioeconomic backgrounds, and the availability of school facilities and infrastructure. Therefore, it is crucial for teachers and policymakers to not simply adopt popular models but to adapt them based on specific conditions on the ground.

Within the framework of this literature review, it was found that learning evaluation is often an under-appreciated aspect of implementing innovative strategies. However, a comprehensive and authentic evaluation system is crucial for assessing the overall impact of learning strategies. Evaluations that focus solely on academic achievement are insufficient to capture changes in students' thinking skills, attitudes, and motivation, which are the primary goals of innovative approaches.

This study also reveals a gap between theory and practice. Many teachers understand the importance of innovation in learning, but still face obstacles in implementing it due to a lack of structural support and limited planning time. This demonstrates that improving the quality of learning is not just a matter of methods, but also involves broader reform of the education system.

Thus, this literature review provides a comprehensive overview of the effectiveness and challenges of implementing innovative learning strategies in elementary schools. This synthesis can inform policy design, teacher training programs, and curriculum development that are more responsive to the needs of 21st-century learning. This study also strengthens the argument that innovative learning approaches, when implemented appropriately, can be instruments for substantial and sustainable educational transformation.

Finally, it can be emphasized that optimizing innovative learning strategies must be interpreted as a dynamic process involving critical reflection, contextual adaptation, and collaboration across stakeholders. This literature review provides evidence that innovative strategies not only enrich learning practices but also provide growth space for students to become active, independent, and resilient learners in the face of change. With an evidence-based approach, teachers, as key actors in education, can make wiser and more effective decisions in designing transformative learning experiences for elementary school students.

Conclusion

Based on the results of the literature review, it can be concluded that innovative learning strategies play a central role in improving elementary school students' overall learning outcomes, including cognitive, affective, and social aspects. Various approaches such as Project-Based Learning, Inquiry-Based Learning, Flipped Classroom, and technology integration such as Augmented Reality have been shown to increase learning motivation, active student engagement, and critical and collaborative thinking skills. However, the effectiveness of these strategies is strongly influenced by teachers' pedagogical and technological competencies, institutional support, and the readiness of educational infrastructure. Furthermore, the successful implementation of innovative strategies requires authentic and reflective learning evaluation and adaptation to local characteristics and student needs. Therefore, optimizing innovative learning strategies cannot be done partially, but rather through a systemic approach involving synergy between teachers, schools, curricula, and educational policies. This study reinforces the urgency of evidence-based pedagogical literacy for elementary school teachers as a foundation for designing learning that is relevant, transformative, and oriented towards holistic student development.

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