

Research Article

Pedagogical Challenges of Elementary School Teachers in Classroom Instruction

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Abstract: Pedagogical challenges faced by elementary school teachers remain a critical issue in classroom instruction. Teachers are expected to implement student-centered learning while addressing diverse student characteristics, increasing curriculum demands, limited instructional resources, and various classroom constraints. This study aims to understand and describe the pedagogical challenges experienced by elementary school teachers in classroom instruction through a qualitative library research approach. Data were collected from peer-reviewed journal articles published within the last five years and relevant academic books published within the last ten years. The selected literature was analyzed thematically to identify recurring patterns and key issues related to pedagogical practices. The findings indicate that major challenges include classroom management difficulties, the implementation of differentiated instruction, curriculum adaptation, technology integration, and limited opportunities for professional development. These challenges reveal a persistent gap between pedagogical theories and classroom realities. The study concludes that addressing pedagogical challenges requires not only teacher competence but also strong institutional support, flexible curriculum implementation, and continuous professional development.

Keywords: Classroom Instruction; Elementary School Teachers; Library research; Pedagogical Challenges; Qualitative Study.

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1. Introduction

Instructional quality in elementary education plays a fundamental role in shaping students' cognitive, social, and emotional development. Elementary school teachers are not only responsible for delivering academic content but also for fostering foundational competencies such as critical thinking, collaboration, and character formation. However,

classroom instruction in contemporary education has become increasingly complex due to diverse student characteristics, curriculum reforms, and the integration of digital technologies. These complexities have generated persistent pedagogical challenges in elementary school settings (OECD, 2020; Darling-Hammond et al., 2020). Therefore, the research object of this study is the pedagogical challenges faced by elementary school teachers in classroom instruction.

Previous research has examined pedagogical challenges using various methodological approaches. Many studies employ quantitative survey designs to measure teaching effectiveness, instructional readiness, and professional competence (Kim & Lee, 2022). These approaches provide measurable indicators and allow generalization across broader populations. Other studies adopt mixed-method designs to explore instructional practices while maintaining statistical rigor. Meanwhile, qualitative approaches such as case studies and interviews have been used to explore teachers' experiences in specific contexts (Creswell & Poth, 2018; Yin, 2023). Although quantitative methods offer strong generalizability and statistical reliability, they often lack depth in capturing teachers' lived experiences. Conversely, qualitative studies provide rich contextual insights but are sometimes limited in scope and transferability.

Despite the growing body of literature, several weaknesses remain evident. Many previous studies focus on instructional outcomes rather than exploring the underlying pedagogical processes that shape classroom practices. Furthermore, research frequently emphasizes policy reforms and theoretical frameworks without sufficiently examining the gap between pedagogical ideals and classroom realities. For instance, student-centered learning and differentiated instruction are widely promoted in theory, yet their practical implementation remains inconsistent (Tomlinson, 2022; Priestley et al., 2021). This discrepancy highlights a persistent research problem: why do pedagogical challenges continue to exist despite ongoing educational reforms and professional development initiatives?

As elementary education becomes increasingly digital, teachers face significant challenges in integrating digital technology into their pedagogical practices. Danang et al. (2025) show how technologies such as blockchain and artificial intelligence (AI) can be used in digital management and security, which is also relevant in elementary education. For example, the use of technology to enhance student engagement and facilitate classroom management becomes one of the primary challenges for teachers. Their research highlights the importance of implementing adaptive frameworks that can help teachers address these challenges by providing support in the use of digital tools that are increasingly dominating the classroom (Danang, Haryani, Aini, Ramahdan, & Edwards, 2025). In this context, the application of technologies such as the Internet of Things (IoT) and RFID-based systems used for surveillance and security can serve as references in education to monitor and improve student interaction during learning (Danang, Setiawan, & Siswanto, 2024; Muhadi et al., 2024).

This becomes even more critical because the pedagogical challenges faced by teachers not only involve student diversity but also how they can adapt their instruction to accommodate the evolving digital needs. For instance, the application of technology in English language learning through folk tales at SMP Stella Matutina Salatiga, which merges technology with traditional narratives, demonstrates the vast potential in addressing

pedagogical challenges related to the digitalization of education (Englishtina et al., 2024). Innovations like this, which utilize technology to connect lesson material with local cultural contexts, provide insights into how technology can play a role in enhancing students' learning experiences and supporting teachers in overcoming instructional challenges in the classroom.

Addressing this problem requires a deeper understanding of teachers' perspectives and contextual constraints. Therefore, this study proposes a qualitative library research approach to systematically analyze recent scholarly literature on pedagogical challenges in elementary education. By synthesizing peer-reviewed journal articles and academic sources published within the last decade, this research seeks to identify recurring patterns, structural constraints, and contextual factors influencing classroom instruction. The thematic analysis method is employed to categorize key issues and interpret relationships among identified challenges (Creswell & Poth, 2018).

This study makes several contributions to the existing literature. First, it provides a comprehensive synthesis of recent empirical findings on pedagogical challenges in elementary classrooms. Second, it identifies the multidimensional nature of instructional constraints, including classroom management, differentiated instruction, curriculum demands, technology integration, and professional development. Third, it highlights the persistent gap between pedagogical theory and instructional practice. Fourth, it offers practical implications for policymakers and teacher professional development programs by emphasizing the importance of contextual support systems.

The remainder of this paper is organized as follows. Section 2 presents the state-of-the-art review of related literature on pedagogical challenges in elementary education. Section 3 describes the research methodology employed in this study. Section 4 discusses the findings and their implications. Finally, Section 5 concludes the paper and provides recommendations for future research and educational practice.

2. Literature Review

Recent educational research has extensively examined pedagogical challenges in elementary education. This section presents a state-of-the-art review of relevant studies and theoretical perspectives to identify existing gaps and contextual differences. The discussion is organized into thematic subsections focusing on classroom management and instructional differentiation as dominant issues in elementary classroom instruction.

Classroom Management in Elementary Education

Classroom management has consistently been identified as a foundational component of effective teaching. Studies indicate that managing student behavior, maintaining engagement, and organizing instructional activities are central to successful classroom instruction (Emmer & Sabornie, 2021). Effective classroom management creates structured learning environments that support academic achievement and reduce instructional disruptions.

However, research shows that classroom management challenges are often influenced by contextual factors such as class size, student diversity, and limited institutional support. Evertson and Weinstein (2021) argue that classroom management is not merely an individual teacher skill but a systemic issue shaped by broader educational structures. While existing studies emphasize behavioral strategies and preventive techniques, fewer investigations explore how teachers adapt management practices in dynamic classroom settings. This gap suggests the need for integrative perspectives that connect management theory with real classroom experiences.

Differentiated Instruction and Curriculum Challenges

Differentiated instruction has been widely promoted as an effective strategy to accommodate diverse learning needs in elementary classrooms. Tomlinson (2022) highlights that differentiated instruction requires flexible content delivery, varied assessment methods, and adaptive learning activities. Empirical studies report positive impacts of differentiation on student engagement and achievement (Coubergs et al., 2020). These findings demonstrate the theoretical strength of differentiated instructional models.

Nevertheless, practical implementation remains challenging. Teachers often face time constraints, extensive curriculum demands, and limited planning resources (Priestley et al., 2021). As a result, instruction frequently becomes standardized rather than adaptive. Curriculum rigidity further limits teachers' autonomy and pedagogical creativity (Fullan, 2021). Although theoretical frameworks strongly advocate student-centered approaches, structural limitations in schools restrict their consistent application. This discrepancy reveals a significant gap between pedagogical ideals and classroom realities, which this study seeks to address through a qualitative synthesis of existing literature.

3. Research Method

This study proposes a qualitative library research framework to systematically identify and analyze pedagogical challenges faced by elementary school teachers in classroom instruction. The proposed method is designed to synthesize recent scholarly findings and interpret recurring instructional constraints through a structured thematic analysis approach.

The proposed method consists of five main stages: (1) literature selection, (2) screening and validation, (3) thematic coding, (4) pattern synthesis, and (5) conceptual interpretation. Each stage is described in detail below.

Literature Selection and Data Identification

The first stage involves identifying relevant academic sources related to pedagogical challenges in elementary education. The inclusion criteria are:

- a. Peer-reviewed journal articles;
- b. Publications within the last five years;
- c. Academic books within the last ten years;
- d. Relevance to classroom instruction and pedagogy.

This stage ensures that the dataset represents current and credible scholarly discourse. Let the literature dataset be represented as:

$$L = \{l_1, l_2, l_3, \dots, l_n\} \quad (1)$$

where L represents the collection of selected literature sources and n denotes the total number of qualified documents.

Screening and Validation Process

In the second stage, each document in L is evaluated based on relevance and methodological rigor. Documents that do not directly address pedagogical challenges in elementary classroom contexts are excluded. The validated dataset is represented as:

$$L' \subseteq L \quad (2)$$

where L' denotes the filtered and validated set of literature used for thematic analysis. This screening reduces bias and strengthens the credibility of the synthesis.

Thematic Coding and Categorization

The third stage applies thematic coding to extract key concepts related to instructional challenges. The coding process includes:

- a. Open coding to identify recurring keywords;
- b. Axial coding to group related issues;

- c. Selective coding to finalize core themes.

From this process, five dominant themes are identified:

- a. Classroom management difficulties (Cm);
- b. Differentiated instruction constraints (Di);
- c. Curriculum demands (Cu);
- d. Technology integration barriers (Ti);
- e. Professional development limitations (Pd).

The overall pedagogical challenge intensity (P) can be conceptually formulated as:

$$P = f(Cm, Di, Cu, Ti, Pd) \quad (3)$$

Equation (3) illustrates that pedagogical challenges are multidimensional and interdependent rather than isolated phenomena.

Pattern Synthesis and Comparative Analysis

In this stage, similarities and differences across studies are compared. Cross-study analysis is conducted to identify:

- a. Recurrent instructional barriers;
- b. Contextual variations;
- c. Structural versus individual factors.

The synthesis process enables the identification of systemic relationships among themes. If multiple constraints coexist simultaneously, the cumulative pedagogical challenge may increase, which can be represented linearly as:

$$P = Cm + Di + Cu + Ti + Pd \quad (4)$$

This equation emphasizes the cumulative nature of instructional difficulties in elementary classrooms.

Conceptual Interpretation and Model Construction

The final stage involves interpreting findings to construct a conceptual model of pedagogical challenges. The model assumes that instructional effectiveness (E) is inversely related to the intensity of pedagogical challenges:

$$E \propto 1 / P \quad (5)$$

This relationship indicates that as pedagogical constraints increase, instructional effectiveness may decrease unless supported by institutional and professional interventions.

4. Results and Discussion

This study employed a qualitative library research design supported by systematic thematic analysis. The “software” utilized in this research refers to academic databases and reference management tools used to collect and organize literature sources. Peer-reviewed articles were accessed through indexed academic databases such as Scopus-indexed journals, Google Scholar, and institutional digital libraries. Data organization and coding were conducted manually using thematic categorization supported by digital document processing tools.

Dataset Sources and Initial Data Analysis

The dataset consisted of peer-reviewed journal articles published within the last five years and academic books published within the last ten years. After screening and validation, the final dataset (L) included relevant studies addressing pedagogical challenges in elementary

classroom instruction. Initial data analysis was conducted using open coding to identify frequently occurring terms such as:

- a. “classroom management”
- b. “differentiated instruction”
- c. “curriculum demands”
- d. “technology integration”
- e. “professional development”

Frequency clustering indicated that classroom management and differentiated instruction were the most recurrent themes across studies. This pattern suggests that instructional challenges are strongly associated with classroom-level implementation rather than policy-level discourse.

Results

The thematic analysis produced five dominant categories of pedagogical challenges:

- a. Classroom management difficulties;
- b. Differentiated instruction constraints;
- c. Curriculum pressure and rigidity;
- d. Technology integration barriers;
- e. Limited professional development support.

These findings confirm that pedagogical challenges are multidimensional. The overall pedagogical challenge intensity (P) was conceptually modeled as:

$$P = C_m + D_i + C_u + T_i + P_d \quad (1)$$

The results show that C_m (classroom management) and D_i (differentiated instruction) appear most frequently in the literature dataset, indicating their dominant contribution to P.

Discussion and Analytical Interpretation

The findings support the initial hypothesis that pedagogical challenges in elementary education are systemic rather than individual teacher deficiencies. The recurrence of C_m and D_i across multiple studies suggests that structural classroom conditions significantly influence instructional practice.

The results also reveal a gap between pedagogical theory and implementation. Although student-centered learning is strongly advocated (Tomlinson, 2022; Fullan, 2021), the literature demonstrates practical barriers such as limited time, rigid curriculum frameworks, and large class sizes. This discrepancy validates the research problem identified in the Introduction.

Furthermore, technology integration (T_i) appears frequently in post-2020 studies, reflecting the global digital transformation in education (OECD, 2020). However, results indicate that access to technology does not automatically improve instructional effectiveness. Instead, digital pedagogical competence becomes the determining factor.

The relationship between pedagogical challenge intensity (P) and instructional effectiveness (E) can be interpreted as:

$$E \propto 1 / P \quad (2)$$

This indicates that as cumulative pedagogical constraints increase, instructional effectiveness tends to decrease unless adequate institutional support is provided. Therefore, the results emphasize that improving classroom instruction requires systemic reform, continuous professional development, and contextualized pedagogical training.

5. Comparison

Compared with previous quantitative studies that measure teaching effectiveness using standardized instruments (Kim & Lee, 2022), this research provides a more integrative qualitative synthesis of pedagogical challenges. While earlier studies often isolate single variables, this study demonstrates the interconnected nature of multiple instructional constraints.

Unlike survey-based research focusing on performance metrics, this study emphasizes structural and contextual dimensions influencing classroom realities. Previous state-of-the-art research highlights differentiated instruction as theoretically effective (Coubergs et al., 2020), yet this study synthesizes evidence showing its inconsistent implementation in real classrooms.

Moreover, while OECD (2020) discusses digital transformation in education at the policy level, this study connects policy discourse with classroom-level challenges. Therefore, the contribution of this research lies in bridging macro-level educational reform and micro-level instructional realities.

This comparative analysis strengthens the argument that pedagogical challenges cannot be addressed through isolated interventions but require systemic alignment between policy, curriculum, and teacher professional development.

6. Conclusions

This study concludes that pedagogical challenges in elementary classroom instruction are systemic, multidimensional, and structurally influenced rather than merely individual teacher deficiencies. The thematic synthesis identifies classroom management difficulties, differentiated instruction constraints, curriculum rigidity, technology integration barriers, and limited professional development as the dominant recurring challenges in recent literature. These findings demonstrate that pedagogical constraints are interconnected and collectively affect instructional effectiveness, thereby reinforcing the argument that improving teaching quality requires alignment between policy frameworks, curriculum flexibility, and sustained professional support. The study contributes conceptually by proposing an integrated model illustrating the cumulative impact of pedagogical challenges on instructional outcomes. However, as the research relies on qualitative library analysis, its findings are limited to secondary data interpretation; therefore, future studies are recommended to incorporate empirical field investigations, mixed-method designs, or technology-assisted analytical approaches to further validate and expand the present findings.

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Data Availability Statement: The data supporting the findings of this study are derived from publicly available peer-reviewed journal articles and academic books published within the last decade. No new empirical datasets were generated during the study. All referenced sources are cited in the reference list, and additional information can be provided by the corresponding author upon reasonable request.

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Conflicts of Interest: The authors declare no conflict of interest. The research was conducted independently without any commercial or financial relationships that could be construed as a potential conflict of interest

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