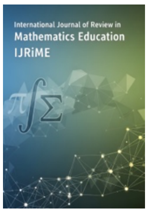

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Pedagogical Anchors Amid Pedagogical Dilemmas: The Myth of Innovation and Unsustainable Expectations within Mathematics Education Research

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Abstract

Frequent curriculum changes disrupt instructional rhythms and stigmatize lecture methods, creating "unrealistic" situations within mathematics education research. Current trends demand total innovation, such as PBL or PjBL across all chapters, which is logistically impossible without sacrificing curriculum completion. This study aims to conceptualize the "pedagogical anchor" as a rational and professional response to maintain instructional stability. Employing a critical literature review of previous theses and dissertations, the research compares preparation-to-coverage ratios between experimental settings and real-classroom demands. Findings reveal a significant scale anomaly where "successful" innovations are often limited to single chapters and lack long-term sustainability due to workload mismatches. The study concludes that strategic lecturing serves as a necessary anchor for cognitive stability rather than an anti-innovation stance. It recommends a shift toward an integrated longitudinal research model that supports teachers throughout the academic year. This approach is essential to prevent collective fatigue and ensure meaningful, sustainable educational innovation.

Keywords: Pedagogical Anchor, Pedagogical Dilemma, Innovation Myth, Cognitive Stability, Inhuman Expectations.

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1. Introduction

Curriculum reforms in contemporary mathematics education are frequently introduced through policy shifts that require substantial pedagogical adjustment from teachers. For instance, recent reforms such as the implementation of *Kurikulum Merdeka* in Indonesia and the adoption of the *Common Core State Standards* in the United States have encouraged significant changes in instructional planning, assessment practices, and classroom learning approaches. Although these reforms aim to improve educational quality, they often require teachers to redesign existing lesson structures and instructional strategies that have been developed through years of classroom experience. Consequently, the transition is not merely administrative but may also affect the continuity of established instructional rhythms. In practice, teachers are positioned as policy implementers who must adapt immediately, often without sufficient space for pedagogical reflection. Research indicates that top-down curriculum reforms frequently neglect teachers' practical knowledge and the established rhythms of classroom learning (Tohari & Rahman, 2024; Trianto, 2010). Other studies affirm that overly rapid curriculum transitions lead to increased teacher workload and the fragmentation of mathematics instruction (Sanjaya, 2016). Furthermore, pressure to "quickly align" with new curricula tends to shift instructional focus from conceptual understanding toward procedural compliance (Suryadi, 2019). Therefore, a pedagogical framework capable of preserving instructional continuity amid structural change is urgently needed.

Within policy discourse and teacher training programs, lecturing methods are frequently stigmatized as symbols of traditional pedagogical failure. This labeling has intensified alongside innovation-driven narratives that promote active learning models as primary indicators of quality in mathematics education. As a result, expository instructional practices are sometimes dismissed as pedagogically outdated, regardless of classroom context or learning objectives. However, cognitive psychology research suggests that structured exposition can contribute to the development of students' conceptual schemas by providing organized conceptual frameworks that support subsequent learning(Ausubel, 1968; Kastaun et al., 2021). Importantly, such conceptual structuring is not exclusive to lecturing; similar cognitive stability may also emerge from well-designed forms of structured inquiry or guided exploration. Studies on mathematical cognition indicate that instructional effectiveness depends less on methodological labels and more on the alignment between pedagogical design, content characteristics and learners' cognitive readiness (Tall, 2002). In fact, international standards in mathematics education emphasize the importance of balancing exploratory learning with forms of explicit instruction and conceptual clarification(NCTM, 2000; Oktavia, Ayu Nur, 2023). Consequently, the stigmatization of particular instructional approaches risks oversimplifying pedagogical practice and may ultimately constrain teachers' professional autonomy.

The mathematics education literature also reveals a growing tendency toward demands for total and uniform pedagogical innovation. Models such as Problem-Based Learning and Project-Based Learning are frequently positioned as ideal practices that are implicitly expected to be applied across all instructional topics. This approach is grounded in the assumption that methodological innovation is inherently synonymous with improved learning quality. However, several studies suggest that excessive innovation may instead generate cognitive overload and academic stress for both teachers and students (A. M Surur et al., 2023). Other research highlights that the effectiveness of innovative models is highly dependent on the availability of resources and instructional time (Tibane et al., 2024). Moreover, the repeated imposition of innovation risks undermining the mastery of hierarchical mathematical content (Fan, 2018; Zan & Di Martino, 2007). This body of literature indicates a persistent gap between pedagogical ideals and classroom realities.

In response to the tension between innovation demands and pedagogical realities, this article aims to conceptualize the term *Pedagogical Anchor* as a theoretical framework that explains the stabilizing role of structured instruction within mathematics learning. Rather than introducing a completely new instructional method, the concept refers to a pedagogical function: a stable instructional core that organizes and supports various forms of learning activities throughout the curriculum. In practice, this anchor is often realized through forms of direct and structured explanation that provide conceptual orientation for students before, during, or after exploratory learning phases. While established models such as Direct Instruction, Scaffolding, and the Gradual Release of Responsibility describe specific instructional strategies, the concept of *Pedagogical Anchor* focuses on the structural necessity of maintaining a stable instructional reference within the learning process. In many contemporary policy and training discourses, direct instruction is frequently framed as a pedagogical problem that should be replaced by innovative models. By contrast, the Pedagogical Anchor perspective interprets structured instruction as an indispensable component of classroom practice that cannot be entirely abandoned, even when innovative learning models are employed. This perspective aligns with studies showing that effective teachers tend to develop instructional patterns that combine stability and flexibility in response to classroom demands (Komara, 2012). Other research confirms that pedagogical stability plays a significant role in fostering teacher confidence and supporting orderly student learning (Miles & Huberman, 1994; Agus Miftakus Surur, 2022). Accordingly, *Pedagogical Anchor* is proposed not as resistance to innovation, but as a professional strategy that positions instructional stability as the foundation upon which innovation can meaningfully occur.

This article argues that the strong emphasis on innovation in contemporary mathematics education discourse has sometimes generated unrealistic pedagogical expectations for teachers. In many contexts, teachers are encouraged to design learning experiences that are simultaneously creative, contextual, and collaborative, often without sufficient consideration of time constraints, administrative responsibilities, and classroom realities. This situation may widen the gap between research ideals and actual school practice. Studies on teacher workload demonstrate that continuous pressure to innovate contributes to professional burnout and a decline in the quality of pedagogical reflection (Fraenkel et al., 2012). Other research also suggests that externally imposed innovation may gradually become administrative ritual rather than substantive instructional improvement (Hosnan, 2014). Therefore, a more realistic paradigm oriented toward the sustainability of teaching practice is needed .

The central hypothesis of this article is that *Pedagogical Anchor* functions as a mechanism of pedagogical rationalization that enables teachers to sustain the quality of mathematics instruction over time. Rather than rejecting innovation, this concept positions innovation as an adaptive element that revolves around a stable pedagogical anchor. With such an anchor, teachers are better able to determine when innovation is necessary and when stable instruction is more effective. Research on pedagogical decision-making suggests that experienced teachers tend to use consistency as a foundation for instructional adaptation (Barton, 2009; Nallaperuma et al., 2019). Other studies confirm that pedagogical stability supports students in developing deep conceptual understanding in mathematics (Faizin & Djayusman, 2023). Thus, *Pedagogical Anchor* is proposed as a key concept for bridging the dilemma between the myth of innovation and the real needs of mathematics learning.

2. Method/Approach

The unit of analysis in this study consists of academic documents produced at different levels of higher education, including undergraduate theses, master's theses, and doctoral dissertations that discuss innovative learning in mathematics education. These documents are not treated as equivalent forms of research rigor; rather, they represent a spectrum of pedagogical discourse within academic training and research practice. Such works are relevant because they often function as references for instructional approaches in teacher education and classroom experimentation. Previous studies indicate that many undergraduate and master's theses in education promote innovative models such as Problem-Based Learning (PBL) and Project-Based Learning (PjBL) as primary pedagogical solutions (Prasetyo & Abduh, 2021). Other research reveals that the majority of these studies concentrate on a single topic or a single chapter of mathematics instruction (Mawaddah & Maryanti, 2016). Similar patterns are also evident in the development of instructional modules or learning media that are tested within narrowly defined content scopes (Helda et al., 2025). Therefore, these documents are relevant material for examining recurring pedagogical patterns and structural dilemmas in mathematics education research .

This study employs a comparative content analysis of academic literature to examine patterns in research on innovative mathematics learning. The purpose of this design is not to test the effectiveness of a particular instructional model, but to analyze how research studies structure learning activities and allocate pedagogical workload. Through systematic comparison of research documents, the study identifies recurring patterns in the proportion between instructional preparation and classroom implementation. Methodological literature notes that content analysis is useful for examining conceptual consistency and implicit assumptions within educational research reports (Creswell & Poth, 2021). Similar approaches have also been used to assess the consistency between research designs and the practical implications claimed by researchers (Fraenkel et al., 2012). In the context of mathematics education, critical reviews are particularly relevant for evaluating the pedagogical sustainability of innovative models (Suyitno & Habibi, 2020). Therefore, this methodological design is aligned with the analytical objectives of the study .

The data sources for this research consist of written documents derived from academic studies that are published or archived in university repositories. The temporal scope of analysis spans approximately the last ten years in order to capture recent trends in mathematics education research. The selection of these sources is based on the assumption that academic documents reflect research practices considered "ideal" within the educational community. Previous research indicates that theses and dissertations frequently serve as conceptual references for curriculum development and the design of instructional media (Sugiyono, 2019). Other studies reveal that many module development studies report pedagogical success within limited contexts (Nofa, 2022). In addition, research on the integration of learning models tends to emphasize short-term effectiveness (Rahmi et al., 2023). Therefore, these sources are adequate for critical analysis.

Data collection was conducted through systematic document searches based on specific inclusion criteria. These criteria included studies that implemented innovative learning models in mathematics education and reported empirical classroom applications within clearly defined instructional units. Particular attention was given to studies conducted within limited content scopes, such as a single chapter or basic competency, because this design pattern frequently appears in experimental research in mathematics education. The purpose of this selection was not to privilege short-term successful outcomes, but to examine how such research designs structure instructional activities and report effectiveness claims. Documentation methods are widely recognized as effective in text-based qualitative research, as they enable in-depth analysis without field intervention (Moleong, 2017). Other studies affirm that academic documentation can be analyzed as artifacts of idealized pedagogical practice (Himmah et al., 2021). Furthermore, document analysis allows researchers to compare research claims with their realistic implications for teachers (Komara, 2012). Thus, this technique is consistent with the non-empirical design of the study.

Data analysis was conducted through conceptual comparison across two primary dimensions: pedagogical preparation and actual curriculum coverage. Pedagogical preparation refers to the extent of instructional planning activities reported in the analyzed documents, including stages such as lesson design, development of learning media, preparation of assessment instruments, and classroom implementation procedures. These elements were identified through a coding protocol applied to the methodological sections of the documents. In contrast, curriculum coverage refers to the scope of mathematical content addressed in the reported instructional intervention, typically limited to a single topic, chapter, or basic competency. Previous research indicates that the development of innovative instructional modules often demands intensive planning time (Surur et al., 2021). Other studies confirm that the mathematics curriculum is dense and hierarchical, making it difficult to fully accommodate project-based models (Sanjaya, 2011). This analysis also takes into account the implications of academic and professional stress experienced by teachers (Surur et al., 2023). Through procedure, conclusions are derived through systematic document analysis without the need for new field data.

3. Result

3.1. Research Scale Anomalies

The following reference table presents empirical studies based on undergraduate theses, master's theses, or online-published articles that explore innovative learning models, such as Realistic Mathematics Education (RME), Problem-Based Learning (PBL), Project-Based Learning (PjBL), Inquiry-Based Learning (IBL), and Game-Based Learning (GBL), within specific mathematics content contexts and reported outcomes. These data are relevant for analyzing how methodological innovations are often implemented in a limited manner, confined to a single topic or chapter in mathematics instruction.

Empirical studies in mathematics education employing innovative learning models frequently demonstrate success at the level of individual chapters or specific content areas, yet they simultaneously limit teachers' ability to implement these approaches holistically across the annual curriculum. The findings summarized in the table indicate that PBL, PjBL, IBL, RME, and GBL are often reported to enhance mathematical competencies, such as problem-solving skills, mathematical understanding, and learning motivation, within narrowly defined topics, including integers, fractions, or arithmetic operations. However, these studies are generally restricted to a single instructional unit or a small segment of the curriculum.

Table 1. References of Empirical Studies

No.	Learning Model	Reported Outcomes
1	PBL & RME (combined) (Istiqomah, 2021)	Positive effects on students' mathematical literacy
2	PBL (Ningsih et al., 2025)	Improvement in problem-solving ability
3	PBL (Febiyanti, 2024)	PBL influences problem-solving skills
4	PjBL (Oktavia, Ayu Nur, 2023)	Enhances students' mathematical understanding
5	PBL + IBL (Supriatna, Irfan, 2024)	Improved mathematical understanding outcomes with motivation considerations
6	RME + PjBL (Afifah et al., 2025)	Improvement in mathematical thinking and empathy
7	GBL (Saputra, 2025)	Enhancement of creative thinking and problem-solving ability
8	GBL (Rusadhi, 2020)	Significant improvement in numeracy skills
9	IBL (Helda, 2025)	IBL improves students' critical thinking
10	IBL (Mutahri, 2025)	IBL influences learning interest and achievement
11	Interactive Game-Based Learning (Qotrunada, 2024)	GBL effectively improves mathematical problem-solving
12	Game-Based Learning (Rusadhi, 2020)	GBL design supports learning of number operations

The time and intensity required to implement such innovations for even one chapter can constitute a substantial temporal burden for teachers. For example, undergraduate research on PBL conducted with Grade IV and V elementary students (Febiyanti, 2024) reports improvements in mathematical problem-solving through focused use of number boards within a particular semester. Similar IBL-based studies demonstrate gains in critical thinking related to integer concepts among Islamic junior secondary students (Helda, 2025). GBL research likewise reports improvements in numeracy and problem-solving abilities at the elementary level. Studies combining RME and PjBL show enhancements in mathematical thinking and empathy among Grade VIII students through integrated model approaches. These findings consistently reveal a pattern in which pedagogical innovations are locally effective but remain untested across the full scope of the curriculum. Accordingly, this empirical evidence reinforces the limited coverage of innovation in contextual mathematics education research and further strengthens the urgency of the *Pedagogical Anchor* concept as a framework capable of accommodating innovative practices within the overall rhythm of mathematics learning without curricular fragmentation.

3.2. The Phenomenon of Temporary Effectiveness in Innovative Mathematics Education Research

Findings from studies on innovative mathematics learning reveal a pattern of effectiveness that is temporary and closely bound to the limited contexts of the research interventions. Reported successes generally cease once the research intervention concludes and are not accompanied by sustainability mechanisms for subsequent instructional content. Moreover, the recommendations offered tend to be normative in nature and fail to provide realistic implementation roadmaps for teachers. In most of the studies presented in the table, innovation is deemed successful only within a single, specific content area, such as integers, social arithmetic, or particular problem-solving tasks. Once the study ends, no follow-up reports document the application of the same model to subsequent chapters within the same academic year. The recommendations typically suggest that teachers "reuse the model" without offering concrete guidance on how it might be adapted to more advanced or conceptually different

Table 2. Comparison of Researchers' Workload and Teachers' Workload

Aspect	Researchers' Workload (Single-Topic Focus)	Teachers' Workload (Multi-Chapter & Multi-Class)	Links/References
Work Focus	One specific topic or content area; research-based context	Multiple topics, classes, and administrative duties simultaneously	Innovation effectiveness studies are generally concentrated on a single topic without evidence of continued implementation
Pedagogical Preparation Time	Intensive preparation for a single topic, completed prior to the study	Preparation of lesson plans, materials, assessments, and adaptations for multiple chapters and classes on a weekly basis	On average, teachers experience high weekly working hours and heavy academic workloads (Herlita & Fauzi, 2022).
Additional Tasks	Research-related tasks (data analysis, instrument development, reporting)	Teaching, administration, assessment, consultation, school reporting	Teachers' workloads include numerous non-teaching responsibilities (RSIS International) (Manegdeg & Paglinawan, 2024).
Weekly Time Load	Time concentrated on research and publication (relatively flexible)	Teaching hours combined with additional duties often exceed standard instructional hours, including overtime	
Output Targets	Research reports, publications, topic-specific findings	Sustained instruction across different content areas throughout the academic year	Teachers are required to complete all curriculum competencies within the school year (Manegdeg & Paglinawan, 2024).
Scope of Impact	One chapter or topic only	Entire annual curriculum and multiple classes	Innovation studies are rarely extended to subsequent instructional content

material. This pattern indicates that the effectiveness of innovation in mathematics education research is more demonstrative than sustainable.

The absence of evidence regarding innovation sustainability points to a gap between research design and the realities of teachers' pedagogical planning. Implementing innovative models requires lengthy and intensive preparation, making rapid replication for subsequent chapters difficult. When follow-up content demands different conceptual complexities, teachers cannot immediately apply the same model without undergoing a redesign process. In the studies listed in the table, innovations are implemented over limited instructional sessions that are carefully designed by researchers. There is no evidence that teachers continued using the same models for other content areas within the same semester. Even when innovation is intended to be reused for subsequent material, the preparation time required can realistically extend to an entire semester. This fact underscores that claims of innovation success are often disproportionate to the demands of pedagogical sustainability in real classroom contexts.

3.3.Data on Pedagogical Misalignment

The following table 2 presents a comparison between researchers' workloads and teachers' workloads, which is relevant for understanding why methodological innovations are often only temporarily effective and difficult to sustain in classroom practice. Empirical data on teachers' workloads indicate that many teachers report long working hours and a wide range of responsibilities beyond classroom teaching, including administrative duties, assessment, and school organizational activities. For example, analyses of teacher workload reveal excess working hours of approximately 2.5–7.5 hours per week beyond standard teaching hours

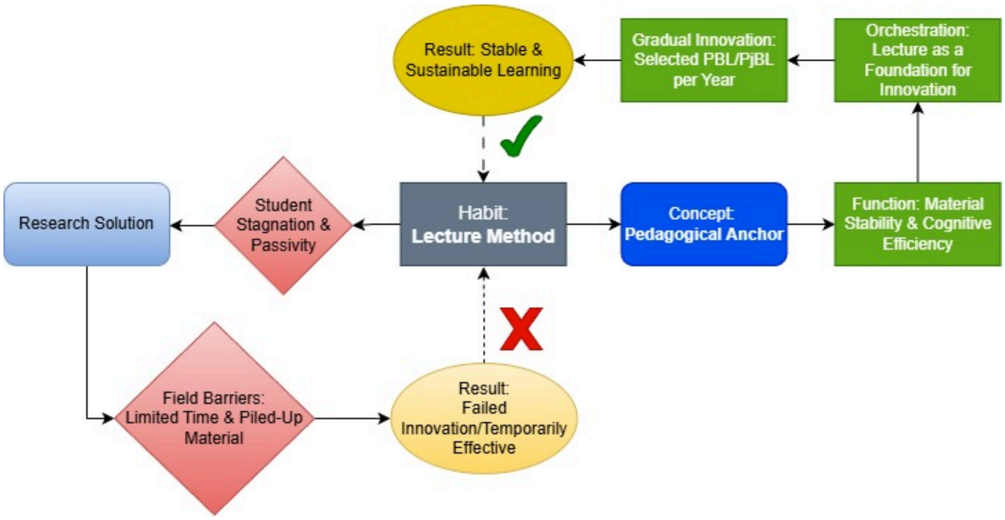

Figure 1. Comparison between Radical Innovation Trajectory and the Pedagogical Anchor Strategy

(Herlita & Fauzi, 2022). International reports similarly indicate that teachers' workloads involve time allocation across diverse tasks that extend professional responsibilities beyond direct instructional activities (Manegdeg & Paglinawan, 2024).

Teachers' workloads in schools are substantially more diverse and complex than those of researchers who focus on a single study or specific instructional content. Researchers conducting innovation-based studies typically allocate their time intensively to one case or one learning topic in order to test the effectiveness of a particular model, allowing sufficient space for in-depth preparation and analysis. In contrast, school teachers are required to manage multiple instructional topics across an academic year while simultaneously handling administrative duties, reporting requirements, assessment, and various school-related activities. These demands significantly expand teachers' workloads beyond the preparation of a single instructional unit. Studies on teacher workload demonstrate that teachers experience weekly overtime in addition to scheduled teaching hours, compounded by complex administrative and pedagogical responsibilities. This results in a higher and more multifaceted workload, with teachers frequently reporting limited time available for preparing and implementing innovative instructional models on a sustained basis. Conversely, researchers in innovation studies are able to concentrate their time and resources on a single instructional topic for a defined period, with their primary workload oriented toward a single research deliverable. This condition highlights that teachers' workloads far exceed the time allocation typically assumed in research-based pedagogical preparation. This fundamental difference in the scope and complexity of workload helps explain why instructional innovations that are effective at the level of a specific chapter often prove unsustainable when confronted with the everyday realities of classroom teaching, which require teachers to address multiple content areas and responsibilities simultaneously.

4. Discussion

Figure 1 illustrates the fundamental difference between a fully imposed innovation approach and the Pedagogical Anchor approach. Along the lower-left trajectory, innovations that disregard field constraints, such as limited instructional time and cumulative content demands, tend to culminate in outcomes that are merely *temporarily effective*. In contrast, the upper-right trajectory presents the Pedagogical Anchor model, in which lecturing functions as an instrument for maintaining stability and cognitive efficiency. Within this model, teachers act as *Leaders of Learning* who orchestrate innovation gradually through *incremental innovation*, ensuring that each innovated chapter is grounded in a solid conceptual anchor.

The findings of this study indicate that the effectiveness of innovative mathematics instruction is local, temporary, and highly dependent on specific content contexts. Methodological innovations such as Problem-Based Learning (PBL), Project-Based Learning (PjBL), and Game-Based Learning (GBL) have been shown to enhance student engagement and performance within a single instructional unit, yet without evidence of sustainability across the annual curriculum structure. These findings reveal a gap between research success and long-term pedagogical realities. Studies on the development of instructional media and innovative models report significant learning gains on particular topics, but only within the limited duration of experimental interventions (Susiana, 2010s). Other research likewise documents improvements in critical thinking and problem-solving skills restricted to the tested material (Pramestika et al., 2020). Similar patterns emerge in analyses of students' cognitive abilities following short-term innovative interventions (Surmiyati et al., 2014). Thus, the results of this study reinforce the pattern of temporary effectiveness and underscore the need for a stabilizing conceptual framework.

The interpretation of "single chapter" in figure 1 studies in this article does not imply that the instructional model is ineffective or unsustainable in other parts of the curriculum. Rather, it reflects a common design pattern in educational research where interventions originate from specific classroom conditions rather than from cumulative findings of previous studies. As a result, many studies delimit their scope to a single chapter or basic competency that corresponds to the immediate instructional needs observed in the classroom. Similarly, the term "temporary effectiveness" used in this study does not refer to a decline in student performance over time, which would require longitudinal data. Instead, it describes the limited temporal scope of most intervention studies, where the research process concludes once the experimental cycle and reporting stage are completed. Although many studies recommend further implementation in their concluding sections, follow-up investigations rarely occur, leaving the long-term sustainability of the intervention unexamined. Therefore, the argument presented in this article concerns the structural limitations of research design and continuity, rather than claims about the intrinsic effectiveness of the instructional models themselves.

A key implication of these findings is the need to reposition the meaning of innovation in mathematics education so that it aligns with instructional sustainability. When innovation continues to be framed as a total and permanent demand, teachers face pedagogical pressures that are disproportionate to their actual work capacity. Instead, innovation should be situated within a stable instructional rhythm. Studies on meaningful learning emphasize that consistent pedagogical structures play a crucial role in building students' conceptual understanding (Effendi, 2017). Other research suggests that methodological variation without a clear framework may reduce the coherence of mathematics learning (Sanjaya, 2011). Moreover, foundational mathematics learning requires structured repetition to ensure conceptual retention across educational levels (Susiana, 2010). Accordingly, the implications of these findings point to the necessity of a pedagogical anchor that preserves instructional continuity.

Teachers' pedagogical dilemmas emerge as a direct consequence of the imbalance between research-driven innovation demands and the structure of the mathematics curriculum. Educational research frequently promotes innovation as the primary indicator of instructional quality, while curricula simultaneously demand the completion of hierarchical and cumulative content. This misalignment places teachers in a constrained position between academic compliance and pedagogical responsibility. Analyses of educational challenges show that teachers are often forced to choose between conceptual depth and methodological variation (Santini, 2020). Other studies reveal that teachers' pedagogical burdens increase when innovation is not accompanied by a reduction in curriculum demands (Komara, 2012). In mathematics instruction, this pressure contributes to the fragmentation of students' understanding (Surmiyati et al., 2014). Therefore, teachers' pedagogical dilemmas should be understood as structural consequences rather than individual professional failures.

Pedagogical Anchor can be interpreted as a mechanism of pedagogical stabilization amid innovation turbulence and curriculum pressure. Within this framework, lecturing is not construed as an outdated method, but as a conceptual anchor that maintains instructional direction. An anchor does not halt innovation; rather, it ensures that the pedagogical vessel does not lose its orientation. Studies on foundational mathematics learning demonstrate that structured exposition helps students develop strong conceptual foundations (Susiana, 2010). Other research confirms that concept consolidation through systematic explanation is essential prior to further exploration (Effendi, 2017). Furthermore, innovative learning without an initial structure tends to produce superficial understanding (Pramestika et al., 2020). Accordingly, Pedagogical Anchor functions as a balancing mechanism between pedagogical stability and creativity.

The findings of this study extend previous research by highlighting the often-overlooked dimension of pedagogical sustainability. Prior studies have generally focused on short-term effectiveness and immediate learning gains. This study complements that body of work by offering a structural analysis of instructional rhythm in mathematics learning. Research on media development and innovative models reports positive outcomes in students' cognitive and affective domains (Helda et al., 2025), while other studies document increased learning motivation through methodological variation (Rahmi et al., 2023). However, relatively few studies examine the implications of innovation for instructional continuity across chapters and educational levels. In this regard, the concept of Pedagogical Anchor offers a novel theoretical contribution to the discourse on mathematics education.

The primary recommendation of this study is to adopt Pedagogical Anchor as a realistic and sustainable design principle for mathematics instruction. Teachers should be granted pedagogical legitimacy to employ lecturing as a conceptual anchor, while innovation is positioned as a means of meaning enhancement rather than replacement. This approach may be analogized to a *verse–chorus* pattern, in which lecturing establishes the foundation and innovation provides emphasis. Research on repetitive learning cycles indicates that sequences of explanation–exploration–consolidation enhance the durability of mathematical concepts (Susiana, 2010). Other studies support the importance of initial structure prior to creative activity (Effendi, 2017). In practice, a natural rotation between lecturing and innovation enables students to integrate concepts more holistically (Assyakurrohim et al., 2023). With this action plan, Pedagogical Anchor holds the potential to become an operational framework for humane and resilient mathematics instruction.

5. Conclusion

The most significant finding of this study confirms that the success of innovative approaches in mathematics education research is often partial and temporary. Innovation has been shown to enhance student engagement and learning outcomes within specific content areas, yet it does not automatically ensure long-term conceptual understanding. When innovation is detached from a stable instructional structure, learning tends to lose both direction and continuity. An analysis of multiple studies reveals that the effectiveness of innovative models commonly remains confined to a single chapter or a specific experimental context. No strong evidence was found to indicate that such innovations are consistently sustained in subsequent topics within the same academic year. In practice, teachers ultimately return to foundational instructional practices to secure mastery of core mathematical concepts. The central lesson of this study is that pedagogical stability constitutes a prerequisite for meaningful innovation.

The primary contribution of this research lies in the proposal of the *Pedagogical Anchor* concept as a rational and humane framework for mathematics education. This concept reinterprets lecturing not as an outdated method, but as a professional anchor that preserves instructional rhythm and direction. Accordingly, teacher professionalism is redefined as the capacity to consciously balance stability and innovation. *Pedagogical Anchor* explains why teachers reflexively return to structured explanation following innovative phases of instruction. It also addresses the dilemma faced by teachers who must manage multiple classes and content areas without compromising instructional quality. Furthermore, this study offers operational pedagogical analogies, such as the *verse–chorus* pattern and cycles of conceptual consolidation. Through these contributions, the study enriches the discourse on mathematics education by foregrounding pedagogical sustainability.

The limitation of this study lies in its reliance on literature-based analysis without long-term classroom accompaniment. The research does not yet incorporate direct observation of teaching practices across a full academic year. However, this limitation opens avenues for future research that are more closely aligned with teachers' working realities. The analysis indicates that chapter-based, partial research designs are insufficient to represent the complexity of annual mathematics instruction. Teachers require research support that acknowledges real constraints of time and workload. Therefore, long-term collaborative research holds greater potential for generating sustainable innovation. This study recommends a shift toward an *Integrated Longitudinal Research Model*, as innovation without a *Pedagogical Anchor* is likely to result only in collective fatigue within the education system.

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AI Declaration Statement	:	The authors used AI-assisted tools (ChatGPT) only for language refinement and formatting. All ideas, data interpretation, and scholarly arguments were developed independently by the authors.

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