

QUALITATIVE APPROACH IN INNOVATIVE LEARNING MODEL DEVELOPMENT: GROUNDED THEORY STUDY ON TEACHER PRACTICES

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Abstract. Learning innovation is an important prerequisite for improving the quality of learning processes and outcomes in the 21st century education era. However, various studies show that innovations adopted mechanically from training or policies often fail because they are not connected to the real experiences of teachers. This study aims to develop a conceptual model of experience-based pedagogical innovation through a qualitative approach using grounded theory design. Data were obtained through in-depth interviews, classroom observations, and analysis of learning documents of teachers considered innovative, selected through purposive and theoretical sampling until data saturation was achieved. Analysis was conducted through open coding, axial coding, and selective coding using the constant comparative method. The findings show that pedagogical innovation emerges as a cyclical process that moves through the stages of awareness of change, design experimentation, reflection on action, and reconstruction of learning strategies. At the core of this process is the view that teachers produce pedagogical knowledge from their practical experiences, so that innovation is understood as a living model that continues to evolve according to the classroom context and the dynamics of the students. The resulting conceptual model positions teachers as practical theorists and learning as a reflective laboratory for the construction of educational knowledge. The implications of this study emphasize the need for teacher development programs based on practical reflection, policies that allow room for teacher creativity, and further research to test this model in different educational contexts. This research contributes theoretically to understanding learning innovation as an emergent and experience-based phenomenon, and practically to designing more relevant and sustainable learning quality improvement.

Keywords: Learning innovation; Grounded theory; Teacher reflection

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1. INTRODUCTION

The pace of change in education in the digital age has driven the need for more innovative, adaptive, and contextual learning models. Recent studies show that traditional learning methods focused solely on lectures and knowledge transfer are no longer adequate to meet the demands of 21st-century skills such as creativity, collaboration, critical thinking, and digital literacy [1]. Pedagogical innovation, whether through the use of technology, more challenging task design, or a student-centered approach, is one of the key strategies for improving the quality of the learning process and outcomes for students [2].

In this context, the role of teachers as both designers and implementers of learning becomes central. Recent research confirms that innovative classroom practices by teachers depend not only on curriculum policy, but also on how teachers interpret learning objectives, technology, and student needs in their daily practice [3]. However, these innovative practices are often scattered, not systematically documented, and have not been conceptualized into learning models that can be replicated or adapted in other contexts. On the other hand, studies on teacher leadership and professional development also show that sustainable practice change requires a theoretical framework that is born from authentic experiences in the field, not just from top-down designs [4].

This is where the qualitative approach plays an important role. A number of recent publications emphasize that qualitative research is highly relevant for understanding the complexity of educational phenomena, especially when researchers want to capture meaning, subjective experiences, and the dynamics of interactions in the classroom and school [5]. This approach allows researchers to explore in depth how teachers engineer learning strategies, negotiate contextual limitations, and develop innovations gradually. The latest guidelines on qualitative research methods in education also emphasize that this approach is not merely a methodological choice, but a means of generating knowledge that is relevant to educational practice and policy [6].

One of the most prominent qualitative designs in the contemporary educational research landscape is grounded theory. Various reviews show that grounded theory is widely used in reputable educational journals to develop substantive theories that are firmly rooted in empirical data, particularly in relation to teacher practices, educational leadership, and professional development [7]. Recent studies use grounded theory to construct theories about teacher leadership, teacher well-being, professional identity, and how educators respond to new pedagogical demands [4]. This includes research that explores teachers' conceptions of the purpose of technology learning and how it shapes their classroom practices [3]. These findings show that grounded theory is effective for formulating theoretical models that are close to the reality of practice, while contributing to the development of evidence-informed education.

However, there are still significant gaps in the literature. Much grounded theory research in education focuses on aspects of leadership, teacher identity, or professional experience in general, but has not been specifically directed at formulating innovative learning models that can be operationalized as learning design tools. On the other hand, studies on learning innovation often use quantitative approaches or descriptive case studies, thus failing to explore the conceptual processes experienced by teachers when developing and modifying learning models in real contexts [8]. This creates a need for research that deliberately combines a focus on innovative learning models with the analytical power of grounded theory to construct models that are truly “born” from teacher practice.

Based on these gaps, the study entitled “Qualitative Approach in Developing Innovative Learning Models: Grounded Theory Study on Teacher Practices” becomes relevant and strategic. This study positions teacher practices in the classroom as a starting point for constructing innovative learning models that are not only conceptual but also empirically tested in real school contexts. Through a qualitative approach using grounded theory, this study is expected to: (1) reveal the process of how teachers design, test, and revise learning innovations; (2) map the key dimensions that shape innovative learning models; and (3) produce a model formulation that can be used as a reference for the development of teacher education and training at various levels. Thus, this study contributes to strengthening the theoretical and practical foundations for the development of innovative learning models in an era of increasingly complex educational change.

2. RESEARCH METHODS

This study uses a qualitative approach with a grounded theory design to explore the process of teachers in developing innovative learning models. Data were obtained through in-depth interviews, classroom observations, and analysis of learning documents from teachers selected through purposive and theoretical sampling until data saturation was achieved. Analysis was conducted through open, axial, and selective coding using the constant comparative method to produce categories and theoretical models. Data validity was maintained through triangulation, member checking, peer debriefing, and audit trails. All procedures were carried out in accordance with research ethics by maintaining the anonymity of informants [9-10]. This research method is designed to capture the dynamics of teachers' practices naturally and deeply, rather than simply measuring predetermined variables. The choice of a qualitative approach based on grounded theory is based on the assumption that learning innovation is a social phenomenon that is formed through interaction, reflection, and adaptation in the classroom, thus requiring a research method that is capable of reading the process not just the results. Therefore, data is collected simultaneously with analysis, so that initial findings that emerge can be directed to deepen the investigation in the next dataset.

In the early stages of the research, the researchers conducted an entry point in the form of introducing the school context, discussing the research focus with the principal and prospective participants, and identifying teachers who had innovative learning characteristics. Purposive and theoretical sampling were then used to ensure that the participants involved truly had reflective experiences that could enrich the construction of the theory. During this process, the researchers recorded their initial impressions and made memos as initial analytical components, in accordance with the principle of grounded theory that theory develops through dialogue between the data and the researchers.

Data collection was conducted cyclically, whereby the first interview produced tentative categories, which were then verified or explored in subsequent interviews and classroom observations. Each interview not only contained basic questions about what teachers did, but also revealed their rationality, motivation, contextual pressures, and meanings of learning innovation. Classroom observations were conducted not as linear verification, but as an attempt to capture teachers' praxis in real action, so that researchers could understand the gap between discourse and practice.

Data were analyzed using the constant comparative method, in which each piece of data was compared with other data to identify patterns, similarities, and differences. The analysis was continuous through a process of open coding, when initial labels were given to capture key phenomena; then continued with axial coding, when relationships between categories began to emerge, for example between pedagogical reflection and revision of learning strategies; until selective coding was reached, when one core category tied together the entire process of teacher innovation. Memo writing was used to keep track of theoretical analysis and assist in the development of conceptual models.

Data validity is maintained not only through triangulation and member checking, but also through researcher reflexivity. Researchers routinely document biases, assumptions, and field experiences in research journals, so that the resulting interpretations can be tested for consistency and validity. This approach provides depth of analysis as well as transparency of research logic, which is characteristic of grounded theory research.

With this methodological approach, the research not only captures teachers' practices but also explores the process of meaning construction and innovative learning design in its social context. The grounded theory approach provides space for innovative learning models to emerge from the data, rather than merely being confirmed by previous theories. The end result is a conceptual model that is not merely descriptive, but can be used as a basis for developing learning tools, teacher training, and education policy.

3. RESULTS AND DISCUSSION

The Process of Teacher Innovation as a Multi-Layered Phenomenon

Data analysis through open coding shows that learning innovations by teachers do not arise spontaneously but rather as the result of a repetitive reflective process triggered by what we call "pedagogical dissatisfaction." This stage arises when teachers begin to feel that conventional teaching methods, such as direct lectures, memorization, and the use of old media, are no longer appropriate for students' needs, curriculum requirements, or learning outcome expectations. This dissatisfaction can stem from various sources: observations of low student engagement, stagnant

learning outcomes, changes in curriculum policy, or teachers' personal awareness of 21st-century competency requirements.

These findings are consistent with reflective literature in education that reflective practice triggers professional change and pedagogical innovation. As explained in recent studies, teachers who engage in reflective practice demonstrate openness to self-evaluation, the ability to identify weaknesses in practice, and a willingness to experiment with new teaching strategies [11]. Thus, innovation in learning is not merely the adoption of new methods from outside, but rather the result of internal tension within teachers, whose dissatisfaction with old practices drives them to seek and design alternative learning methods. This phenomenon reinforces the view that teachers are not merely implementers of the curriculum, but reflective and innovative actors who actively respond to the dynamics of the school, students, and policies.

In the context of this study, the category of “pedagogical dissatisfaction” became the starting point (trigger) that initiated the cycle of change. From there, teachers begin to explore new possibilities, try different strategies, conduct trials, and through a process of reflection on the results, form a path of innovation that is layered, gradual, and contextual. This shows that pedagogical innovation must be understood as a dynamic and evolutionary process, not as a static product or mere policy instruction. Empirical research results from the STEAM context show that structured reflection in Teacher Training can improve design thinking mindset, creativity, empathy towards students, and courage to take risks in designing innovative learning tasks [12]. Findings indicate that effective teacher professional development programs must provide space for reflective practice, not just technical training, but reflective training, critical thinking, and continuous evaluation.

Core Dimensions in Learning Model Development

Grounded theory findings indicate that teacher learning innovation does not move linearly, but rather through dynamic interactions between core dimensions that influence each other. These four dimensions pedagogical sensitivity, tactical improvisation, action reflection, and strategy reconstruction form a conceptual framework that explains how innovation develops from everyday practice into a mature learning model.

1) Pedagogical Sensitivity as a Trigger for Innovation Awareness

Pedagogical sensitivity emerges as an initial dimension that determines whether teachers are able to pick up on signals of the need for renewal in their classrooms. Teachers with high sensitivity are attuned to:

- a) Changes in student learning behavior,
- b) Low participation,
- c) Classroom boredom, or
- d) The gap between learning objectives and outcomes.

The data narrative shows that innovative teachers often initiate change from sense-making reading the classroom and articulating learning problems as creative challenges. This dimension becomes the engine that drives teachers out of their comfort zone a condition that rarely appears in formal education policy but is very decisive in learning praxis.

2) Tactical Improvisation as a Real Arena for Experimentation

Tactical improvisation refers to teachers' spontaneous decisions to change strategies, media, or learning interactions in the middle of the learning process. Observation data shows that teachers often:

- a) adjust time allocation,
- b) insert collaborative activities,
- c) use contextual examples, or
- d) adapt technology on an ad-hoc basis

This dimension shows that innovation is born in the classroom, not in the planning meeting room, and teachers act as designers in action. The implication is that teacher innovation cannot be separated from the work environment and social dynamics of the classroom.

Core Category: Innovation as “Experience-Based Model Development”

The selective coding stage identifies the core categories, namely:

“Learning innovation is a process of developing experience-based models, not merely the application of new strategies.”

The core findings of this study indicate that learning innovation is not an instantaneous technical action, but rather an epistemic process in which teachers construct substantive theories from their own practical experiences. Teachers do not simply apply strategies taken from training or literature, but engage in a process of constructing meaning and knowledge through real interactions with their classes, failures, successes, and personal reflections.

In interviews, teachers often describe innovation as “trying things out until I find a suitable method,” “reading the children's situation,” or “mixing and matching what I have used before.” Such statements confirm that pedagogical innovation occurs in the realm of tacit knowledge knowledge that lives in practice but is not always explicitly formulated. Grounded theory allows this knowledge to emerge because the model is built from teachers' narrative data, not from researchers' assumptions.

This core category means that learning innovation is emergent:

It arises through a cycle of experience → interpretation → action → reflection → reconstruction. When teachers find that their initial approach is ineffective, they gradually adjust their strategies, develop new justifications, and ultimately construct a learning framework that they believe is most relevant to their students' conditions and classroom context.

Thus, innovative learning models are not understood as “ready-to-use final products,” but as living entities that continue to change in line with new experiences, student demands, and the dynamics of the educational context. Research Conducted by Skrbinek, V entitled Enhancing Teachers' Creativity with an Innovative Training and Support Model (TTS-IPCD) [13]. This study emphasizes that the development of teacher creativity and pedagogical and digital competencies requires ongoing training and support not just the transfer of techniques. It supports the argument that teacher innovation is a process of forming knowledge and practice through experience, not mechanical adoption.

Conceptual Model of Pedagogical Innovation (Grounded Model)

The conceptual model that emerges from this study can be understood as a recursive cycle that connects teachers' experiences, pedagogical interpretations, instructional actions, critical reflections, and the reconstruction of learning strategies. This cycle shows that pedagogical innovation is not the result of adopting ready-made methods, but rather the product of knowledge formed through teachers' experiences and contextual negotiations with classroom realities.

In the initial phase, teachers enter the awareness stage when they realize that there is a mismatch between teaching practices and student learning needs. This awareness triggers teachers to seek new alternatives through exploring strategies, adapting media, or modifying classroom interactions. The next stage is design experimentation, when teachers try new strategies and observe student responses. This process is not linear but iterative, as teachers often make spontaneous adjustments, improvisations, or minor modifications that are not included in the lesson plan.

The third stage, the reflection loop, is central to the meaning of this model. In this phase, teachers engage in internal and collaborative dialogue with colleagues to assess the effectiveness of new strategies. Reflection is not merely a technical evaluation, but an epistemic process that changes teachers' pedagogical beliefs, as highlighted by ElSayary et al [14] that reflective practice shapes teachers' innovative design mindset. Through reflection, teachers develop new understandings that lead to strategic reconstruction, namely the reworking of learning models to better suit student characteristics and learning contexts.

This model is consistent with Yan's [15] findings, which show that teachers act as practical theorists who construct operational theories through teaching experience. In addition, research on communities of practice by Wang et al [16] proves that the reconstruction of learning models can be strengthened through collective interaction, as sharing experiences between teachers allows tacit

knowledge to become explicit. In fact, Fleischmann [17] explains that this collective process enables teachers' implicit knowledge to be articulated and transformed into a shared framework for action.

Thus, the grounded model in this study offers a new conceptual contribution that learning innovation is not merely the implementation of certain methods, but rather a living model that continues to evolve through a cycle of practice–reflection–reconstruction. This model also implies that teacher professional development should position teachers not only as recipients of pedagogical knowledge, but as producers of educational knowledge who formulate learning strategies through their experiences.

4. CONCLUSIONS

This study confirms that learning innovation is not merely the application of new methods, but rather an epistemic process that develops through experience, reflection, and reconstruction of teachers' knowledge in the context of real practice. Through a grounded theory approach, this study successfully reveals the internal dynamics that shape pedagogical innovation, namely teachers' sensitivity to students' needs, tactical improvisation in the classroom, continuous reflection on actions, and reconstruction of learning strategies based on the meaning constructed by teachers. This process forms a cyclical, adaptive, and contextual conceptual model of experience-driven pedagogical innovation. This model positions teachers as creators of pedagogical knowledge, not merely recipients or implementers of learning policies. The research findings show that innovation arises from the interaction between professional intuition, awareness of changing learning needs, self-evaluation, and reflective dialogue with students and peers. Thus, the classroom functions as a theoretical laboratory, a place where strategies are tested, refined, and packaged into a more mature and relevant form of learning. This conclusion reinforces the view that educational innovation is rooted in teachers' tacit knowledge and practical experience, as highlighted by contemporary literature.

The implications of these findings are broad for educational development. First, teacher training needs to shift from a knowledge transfer model to a reflective and experience-based approach that provides space for teachers to construct their own pedagogical understanding. Second, education policy must view teachers as co-creators of innovation, so that quality improvement strategies are not top-down but based on local practices. Third, the resulting conceptual model can be used to develop teacher training tools, curriculum design, and a framework for evaluating learning innovation in schools. Overall, this research provides theoretical and practical contributions to understanding learning innovation as an emergent, dynamic, and reflective social phenomenon, while also opening up opportunities for further research to explore the implementation of this model in various contexts, including trials in vocational education, remote areas, or higher education. These findings confirm that educational innovation grows from experience not just instruction and therefore needs to be given space to continue to develop within the learning ecosystem.

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