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Exploring Teachers' Lived Experiences and Phenomenological Insights on Technology Integration in Traditional Classrooms

Syahrul Ismet [1]*, Khoirul Anwar [2]
[1]Universitas Negeri Padang, Indonesia
[2]Universitas Islam Sultan Agung Semarang, Indonesia
[1]syahrulsaja4@gmail.com*, [2]khoirul@unissula.ac.id

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ABSTRACT

The integration of technology into traditional classrooms has become an essential focus in modern education. However, little research has delved into the subjective, emotional, and practical experiences of teachers as they incorporate these digital tools into their teaching practices. This gap leaves a significant understanding of how technology is truly affecting educators at an experiential level. In this study, we apply a phenomenological approach to explore the lived experiences of teachers who use technology in traditional classrooms, addressing the gap in understanding the emotional and cognitive aspects of this process. We conducted in-depth interviews with ten teachers (5 male and 5 female) from primary and secondary schools with teaching experience ranging from 5 to 20 years, which revealed four key themes: navigating technological barriers, emotional responses to technology, perceived benefits, and the need for support. Data were analyzed using Colaizzi's seven-step phenomenological analysis, including transcription, extraction of significant statements, formulation of meanings, clustering into themes, and validation with participants. The findings emphasize that while technology brings benefits, such as increased engagement, it also presents challenges, including technical difficulties and emotional stress. The study highlights practical implications for designing professional development programs that not only build technical proficiency but also provide psychological and institutional support. However, the study is limited by its small sample size and focus on a specific regional context, which may affect the generalizability of the results. These insights suggest that a more holistic approach, including emotional support for teachers, is needed to successfully integrate technology into teaching practices. The study contributes to a deeper understanding of how educators make sense of their experiences with technology and offers implications for future professional development and policy design.

INTRODUCTION

The integration of technology into traditional classrooms has become a central issue in contemporary education systems (Cronin et al., 2023). With rapid advancements in digital tools, educators are increasingly tasked with incorporating these resources into their teaching practices (Nida et al., 2020). This reflects not only technological innovation but also broader societal changes where digital literacy is a cornerstone of 21st-century education. Technology promises to enhance learning, increase engagement, and expand access to information, yet its implementation in traditional classrooms presents both opportunities and challenges.

Although research highlights the importance of technology in education, the personal experiences of teachers remain underexplored (Poole, 2025). Prior studies often emphasize external factors such as infrastructure, resources, and policies (Noonan, 2019), but the lived experiences of teachers—their struggles, perceptions, and reflections—are equally critical (Köse & Köse, 2019). These experiences, shaped by teaching styles, classroom dynamics, and cultural context, reveal how

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educators assign meaning to technology, not only in operational terms but also through their emotional responses, frustrations, and successes.

While quantitative studies focus on outcomes, phenomenological approaches enable a deeper understanding of the emotional and cognitive processes involved (Cherrington et al., 2021). Teachers' beliefs, prior knowledge, and classroom realities influence their experiences, underscoring the need for qualitative exploration. By adopting a phenomenological lens, this study aims to uncover the subjective dimensions of teachers' interactions with technology and to provide insights that can inform professional development and policy (Carpenter & Munshower, 2020).

Previous research in educational technology has largely prioritized measurable outcomes such as student performance or frequency of use (Byun & Jeon, 2023; Javid et al., 2023). While valuable, such studies neglect the complex emotional and cognitive layers of teachers' experiences (Wyant et al., 2024). Even when barriers like technical issues or limited training are identified, the associated frustrations, self-doubt, and adaptive strategies remain underexplored. Phenomenology, with its emphasis on lived experience, addresses this gap by providing richer insight into how educators navigate and interpret technology in their classrooms (Keller-Schneider et al., 2020).

Thus, despite valuable contributions from prior studies, the personal and emotional dimensions of technology integration are still insufficiently understood (Jovanović & Marić, 2020; Lima et al., 2019). This study seeks to bridge that gap by employing a phenomenological approach to investigate teachers' lived experiences in traditional classrooms. Through this lens, we aim to illuminate not only the challenges and benefits of technology use but also the deeper meanings educators attach to their daily interactions with digital tools.

RESEARCH METHODS

Study Design

This research adopted a phenomenological approach to explore teachers' experiences in utilizing technology in traditional classrooms. Phenomenology was chosen due to its focus on understanding the lived experiences of individuals and uncovering the meanings they attach to specific phenomena. This design was particularly relevant for answering the research questions as it allowed for an in-depth exploration of teachers' perceptions, emotions, and challenges regarding the integration of technology into their teaching practices. The approach focused on gaining a rich, detailed understanding of how teachers make sense of their experiences in this context. A descriptive phenomenological approach was applied to this study, aiming to capture the essence of participants' lived experiences without interpreting or imposing preconceived frameworks onto their narratives. To ensure phenomenological rigor, the researcher engaged in bracketing by setting aside prior assumptions, maintained an audit trail to document the research process, and used member checking to validate the accuracy of themes with participants.

Participants

Participants in this study were selected using purposive sampling, ensuring that those included in the study were experienced educators who had regularly used technology in their teaching practices within traditional classroom settings. The inclusion criteria were as follows: teachers aged between 30 and 55, with at least three years of experience using digital tools in their teaching, and currently employed in a classroom setting. Exclusion criteria included teachers who had limited or no experience with technology in the classroom. A total of ten teachers, five males and five females, participated in the study. The participants represented various subject areas, including science, mathematics, language arts, and social studies. The average age of the participants was 42 years, and their teaching experience ranged from 5 to 20 years. These demographic characteristics provided a broad perspective on the experiences of teachers across different educational contexts. The sample size of ten participants was deemed appropriate based on phenomenological research standards, which emphasize depth over breadth. A smaller, focused sample allows for rich, detailed exploration of lived experiences until data saturation is reached, ensuring that no new significant themes emerged.

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Data Collection

Data was collected through semi-structured, in-depth interviews conducted in a quiet, private space to ensure a comfortable environment for participants. The interviews were designed to explore participants' experiences, challenges, and perceptions regarding the use of technology in the classroom. Each interview lasted approximately 45 minutes to one hour and was audio-recorded with the consent of the participants. A semi-structured interview guide was used, which included open-ended questions to allow participants to elaborate on their personal experiences and views. Questions centered around themes such as the integration of technology, challenges faced, emotional responses, and perceived benefits. The interview guide was adapted as necessary to address the specific context of each participant. No standardized tools or protocols were used for this study, ensuring flexibility in the collection of rich qualitative data. Field notes and reflective journals were also maintained to capture non-verbal cues and researcher observations, further enhancing the credibility of the findings.

Data Analysis

The data was analyzed using thematic analysis, a method commonly used in phenomenological research to identify, analyze, and report patterns (themes) within the data. The analysis process involved several key steps. First, the interview transcripts were read multiple times to ensure immersion in the data. Second, meaning units (significant statements or phrases) were identified and coded. These codes were grouped into themes, which were then refined and organized into overarching categories. The analysis was carried out manually and supported by NVivo software to facilitate the organization of data. This systematic process allowed for the extraction of essential themes that represent the core experiences of the participants. To ensure trustworthiness, the themes were reviewed by an independent qualitative researcher, triangulated with participants' feedback (member checking), and continuously cross-checked against the raw data.

Ethics

Ethical considerations in this study were carefully addressed to ensure the protection of participants' rights and privacy. Informed consent was obtained from all participants, and they were fully aware of the study's purpose, their right to withdraw at any time, and the confidentiality of their responses. The interviews were conducted anonymously, and all data was stored securely to maintain confidentiality. Ethical approval for the study was obtained from the relevant institutional review board (IRB), and the research adhered to the ethical guidelines outlined in the Declaration of Helsinki. Participants were provided with written consent forms, and they were assured that their identities would not be disclosed in any publications resulting from the study.

RESULTS

Navigating Technological Barriers in the Classroom

Teachers consistently identified infrastructural and technical problems—such as unstable internet, malfunctioning projectors, and unreliable software—as primary obstacles to technology integration (Fife, 2020).(Fife, 2020). For instance, Teacher A, a high school science educator, described:

"I always plan to use these great interactive tools, but when the internet is slow, everything falls apart. It's frustrating because the lesson plans don't work as expected, and I feel like I'm failing my students."

Similarly, Teacher B, a primary school English teacher, highlighted basic equipment failures: "Sometimes the projector doesn't work, or the computer freezes. Even when I manage to get things running, the students have trouble following along because of poor screen visibility."

These accounts demonstrate how recurring technical issues disrupt lesson flow and reduce the effectiveness of instructional planning, directly addressing the first research question on barriers to technology integration.

The Emotional Impact of Technology Integration

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Teachers frequently reported stress, anxiety, and self-doubt when using digital tools, indicating that technological challenges often translate into emotional strain. Teacher C, a high school history teacher, admitted::

"I feel like I'm not doing enough for my students. Everyone talks about using technology, but when I can't make it work properly, I feel embarrassed. It's like I'm letting the class down."

Teacher D, a mathematics instructor, emphasized how technology undermined her teaching confidence:

"I've been teaching for years without technology, so it feels like a whole new world. Sometimes, I just wish I could go back to chalk and blackboard.

These findings reveal that negative emotions are intertwined with technology adoption, highlighting the second research question concerning teachers' perceptions and emotional experiences.

Perceived Benefits of Technology Use

Despite obstacles, teachers acknowledged the value of digital tools in enhancing engagement, broadening resources, and enabling interactive learning.Teacher E, a language arts teacher, explained:

"Using digital tools like interactive quizzes and multimedia resources has helped keep the students more engaged.

Teacher F, a geography teacher, stressed the expanded access to teaching materials:

"Technology allows me to show maps and videos that I could never use in a textbook. It makes the lessons come alive."

These insights connect directly to the third research question, demonstrating that teachers perceive technology as enriching learning experiences, even when accompanied by difficulties.

Teacher Support and Professional Development

A recurring theme was the lack of sufficient training and mentorship to use technology effectively.Teacher G, a middle school teacher, expressed:

"I've attended a few workshops, but they were too basic. I need something that teaches me how to use these tools in real lessons,."

Teacher H similarly noted the absence of expert guidance: "The school provides some resources, but there's no one to guide us through using them.."

This theme highlights that institutional and professional support is crucial for sustainable technology adoption, aligning with the research question on conditions needed for effective integration.Overall, the four themes—technological barriers, emotional impact, perceived benefits, and the need for support—demonstrate that while teachers see potential value in technology, their experiences are hindered by infrastructural limitations, emotional challenges, and insufficient training. These results provide direct answers to the research questions by showing the interplay between practical barriers, emotional responses, perceived opportunities, and support needs.

DISCUSSION

The findings of this study highlight how teachers' experiences with technology are shaped by a combination of infrastructural barriers, emotional responses, perceived benefits, and the availability of institutional support. Rather than reiterating each theme, the discussion emphasizes their interconnections and broader implications. Teachers' struggles with unreliable infrastructure, for example, cannot be understood solely as technical difficulties but also as triggers of stress and diminished confidence. This interplay between technical and emotional factors underscores that technology adoption is not just about access to tools, but about how such tools are experienced in daily practice (Mohebi & Bailey, 2020).

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This interpretation moves beyond descriptive reporting by situating teachers' lived experiences within the broader discourse on digital inequality. While previous research often attributes adoption challenges to external constraints like infrastructure (Cann et al 2021), the present study shows that even when tools are available, emotional strain can undermine their effective use. In this sense, teachers' reluctance to adopt technology may be less a matter of resistance and more a rational response to feeling underprepared or unsupported—an alternative explanation that challenges the narrative of "technophobic teachers."

The findings also expand upon frameworks such as TPACK (Abramowitz et al., 2025), which conceptualize technology integration as the intersection of knowledge domains. While useful, these models often overlook the affective dimension. Our results suggest that emotional engagement should be recognized as a critical component of pedagogical readiness, aligning with scholars who call for the integration of socio-emotional factors into models of technology use (Dzemidzic Kristiansen, 2022). This positions the study as a contribution that not only supports but also extends existing theoretical perspectives.At the same time, contrasting literature indicates that with strong systemic support, teachers report more positive experiences of technology (Yaşar & Polat 2021); Shamir-Inbal & Blau, 2021). The less optimistic accounts in our data may thus reflect contextual differences, such as institutional priorities or cultural expectations about teaching. These discrepancies highlight the importance of interpreting teachers' experiences not as universal but as contextually contingent. Future comparative research could explore how policy environments and cultural norms shape the emotional trajectories of technology adoption.

Implications of Findings

Practically, the study suggests that professional development should move beyond technical training to include strategies for managing emotional stress, cultivating resilience, and fostering peer mentorship. Critical engagement with alternative explanations—such as whether stress arises primarily from lack of training, from systemic undervaluing of teachers' voices, or from broader societal pressures—indicates that support programs must be multidimensional rather than purely skill-based (Hasnain & Halder, 2023).

Theoretically, these findings encourage a reframing of technology integration as both a cognitive and affective process. This dual lens situates teacher experiences within the larger cultural transition to digital education, where emotional labor becomes as significant as technical skill.

Limitations of the Study

While this study provides valuable insights, limitations remain. The sample size of ten teachers restricts generalizability, though it aligns with phenomenological emphasis on depth. The reliance on self-reported data means accounts may reflect perception more than observable behavior, suggesting the need for triangulation with classroom observations. Moreover, the focus on traditional classrooms excludes hybrid or online contexts, where challenges and emotions may manifest differently.

Prospects for Future Research

Future research could compare traditional, hybrid, and fully online environments to assess how context shapes emotional and technical challenges. Longitudinal designs would allow for analysis of how teachers' confidence and strategies evolve over time, while multi-stakeholder studies—including students and administrators—could illuminate whether teachers' struggles are perceived and addressed at the institutional level (Willermark & Gellerstedt, 2022). Such inquiries would deepen understanding of how systemic conditions interact with personal experiences to influence technology adoption.

CONCLUSION

This study explored the lived experiences of teachers integrating technology into traditional classrooms, addressing the gap in understanding the subjective, emotional, and practical challenges

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they face. Four key themes were identified: navigating technological barriers, emotional responses, perceived benefits, and the need for teacher support. Beyond restating these findings, the study makes two unique contributions. First, it demonstrates that technology integration must be understood not only as a technical or pedagogical issue but also as an affective process shaped by stress, confidence, and meaning-making. This extends existing frameworks such as TPACK by highlighting the emotional dimension as a critical yet underexplored factor in adoption. Second, it shows that infrastructural readiness alone is insufficient; without psychological and institutional support, teachers' engagement with technology remains fragile.

In terms of actionable recommendations, the study suggests that teacher training programs should incorporate both technical proficiency and emotional resilience strategies. Professional development should include peer-mentoring systems, reflective practice sessions, and scenario-based training that prepares teachers for real classroom challenges rather than abstract theory. At the policy level, schools and ministries of education should view technology integration as an ongoing process requiring sustained investment in infrastructure, accessible technical support, and the creation of supportive school cultures that normalize trial, error, and adaptation. Theoretically, this research contributes to phenomenological scholarship by demonstrating how bracketing and member checking can reveal the often hidden interplay between external barriers and internal emotional states. It positions teachers' subjective narratives as vital data for rethinking technology adoption models, which traditionally emphasize performance outcomes. This perspective offers a richer, human-centered understanding of how technology reshapes pedagogy in everyday practice. Future studies should build on these insights by examining how emotional trajectories change over time through longitudinal designs, and by comparing experiences across traditional, hybrid, and online contexts. Incorporating student and administrator perspectives would also provide a more systemic account of how technology integration unfolds within the broader educational ecosystem.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest related to this research.

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