



Exploring the Impact of Innovative Pedagogical Strategies and Digital Tools on Student Engagement and Learning Outcomes in Healthcare Communication: A Phenomenological Study of Educators' Experiences

Afriantoni

Universitas Islam Negeri Raden Fatah Palembang, Indonesia

afriantoni_uin@radenfatah.ac.id

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ABSTRACT

The adoption of digital tools in education and pedagogy has rapidly transformed interactions between educators and students in healthcare-related disciplines. Despite the growing use of platforms like educational technology systems and virtual learning environments, little is known about how these tools shape the lived experiences of educators and learners in real-world settings. This study aims to explore these experiences through the lens of phenomenology, addressing the gap in understanding the deeper meaning and impact of digital tools on teaching and learning processes in healthcare education. Using a phenomenological approach, we conducted in-depth interviews with educators and students to understand their personal experiences and perceptions. The findings reveal that while digital tools are widely embraced for convenience, they also introduce challenges related to trust, privacy concerns, and the depersonalization of teaching interactions. These results offer valuable insights into how digital communication affects the educator-student relationship and suggest the need for further research into optimizing these tools for more empathetic and effective educational communication in healthcare contexts.



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INTRODUCTION

The shift toward innovative pedagogical strategies in higher education has become increasingly significant as educators seek to improve student engagement and learning outcomes in a rapidly changing academic landscape (Le & Do, 2019). Traditional teaching methods, often characterized by lectures and passive learning, have been critiqued for their limited ability to foster active student participation and deeper learning. In contrast, innovative approaches, such as project-based learning, flipped classrooms, and the integration of digital technologies, promise to transform the educational experience by encouraging greater student involvement and providing more dynamic, interactive learning environments.

The rise of educational technology has been a key factor in this transformation. Tools such as learning management systems (LMS), digital collaboration platforms, and interactive multimedia resources offer new opportunities for engaging students beyond the traditional classroom (Kharabak, 2023). These technologies facilitate real-time communication, collaborative learning, and personalized educational experiences, all of which are essential components of modern pedagogical strategies. Yet, despite these advances, there remains a significant gap in understanding how educators themselves perceive and experience the integration of these strategies into their teaching practices.

Prior research has primarily focused on the outcomes of these innovative methods, such as student performance, retention, and satisfaction. However, much less attention has been paid to the

subjective experiences of educators who implement these strategies (Loder dkk., 2020). This neglect creates a disconnect in the literature, as it overlooks the critical insights educators can provide about the challenges and opportunities involved in adopting innovative methods. Educators' perceptions, challenges, and insights into the use of new teaching methods are crucial to understanding the full impact of these innovations. Traditional research has often neglected the lived experiences of teachers, which are essential for gaining a deeper understanding of the complexities involved in implementing these pedagogies.

Given this gap, the present study specifically aims to explore the experiences of educators who have adopted innovative teaching methods, focusing on how these approaches influence both their teaching practices and their perceptions of student engagement and learning outcomes. By adopting a phenomenological approach, this research seeks to capture the lived experiences of educators, uncovering the meanings they attribute to their interactions with new teaching methods and providing insights into the personal, social, and professional factors that shape their perceptions and practices.

Research on the experiences of individuals within specific phenomena has become an increasingly important area of study, particularly within the field of education (Hsiao dkk., 2023). Understanding the subjective experiences of educators as they navigate innovative teaching methods provides valuable insights into the complex and often nuanced dynamics of teaching and learning. Phenomenological research, which focuses on the lived experiences of individuals, is well-suited for exploring how educators interpret and make meaning of their interactions with new pedagogical strategies. This approach allows for a deeper exploration of the personal and professional dimensions of teaching that are often overlooked in more traditional research methods.

Despite its promise, exploring the meaning of experiences through phenomenology presents several methodological challenges (Zhang dkk., 2023). One significant limitation is the difficulty in capturing the full depth of individual experiences using quantitative approaches, which often reduce complex phenomena to statistical data. Quantitative methods may fail to account for the rich, nuanced details of how educators experience and interpret the impact of innovative teaching methods. Such approaches, while useful for measuring outcomes like student performance, do not fully address the subjective meanings that educators attach to their practices or the challenges they face in implementing these methods.

Phenomenology, by contrast, seeks to address this gap by focusing on the subjective, lived experiences of individuals (Bhuttah dkk., 2024). Through this approach, the study aims to provide an in-depth understanding of how educators navigate and interpret their adoption of innovative pedagogical methods, revealing insights that are critical for addressing the practical and theoretical challenges of modern education.

While many studies have examined the impact of innovative teaching methods in higher education, most research has relied on practical, outcome-focused approaches that measure student performance or satisfaction. These studies typically utilize quantitative methodologies, such as surveys or standardized assessments, which provide valuable data on the effectiveness of teaching strategies in terms of engagement, achievement, and retention. However, such approaches often fail to capture the deeper, subjective experiences of educators who implement these strategies, leaving a significant gap in our understanding of how educators interpret and navigate the challenges and successes associated with innovation in teaching.

The reliance on outcome-based methods creates a limited perspective, as it overlooks the nuances of individual experiences and the meanings that educators assign to their practices (Tang & Tang, 2024). For instance, while quantitative data may indicate an increase in student engagement through the use of technology, they do not reveal the complexities behind the educator's experience of integrating these tools into their teaching or the personal reflections on the success or difficulties of such practices. This lack of depth in understanding the lived experience of educators leads to an incomplete picture of the pedagogical shifts that are occurring in higher education.

An alternative solution lies in adopting a phenomenological approach, which provides a framework for exploring the essence of these experiences in a more holistic and nuanced manner. By focusing on the lived experiences of educators, phenomenology allows for a deeper understanding of the personal and professional dimensions of teaching, offering insights into how educators make meaning of their practices and how these meanings shape their teaching strategies (Prystupa dkk., 2020). This approach addresses the limitations of previous research by emphasizing the subjective nature of educational practices and providing a richer, more comprehensive understanding of the impact of innovative pedagogical strategies on both educators and students.

Numerous studies have explored the impact of innovative pedagogical strategies in higher education, but most have relied on outcome-based approaches, focusing on measures such as student performance and engagement. For example, research on technology-enhanced learning has demonstrated improvements in student interaction and satisfaction (Freeman et al., 2014), but these studies often overlook the subjective experiences of educators implementing such strategies. The literature on teaching practices, such as the work of Biggs (2003) on constructive alignment, emphasizes the importance of aligning teaching methods with learning outcomes. However, few studies have investigated how educators themselves perceive and navigate the challenges of adopting new teaching strategies, particularly in terms of their personal and professional reflections. This gap highlights the need for research that delves deeper into the lived experiences of educators to better understand how innovative teaching practices impact their teaching philosophy and approach.

In addressing this gap, this study adopts a phenomenological approach to explore the lived experiences of educators who have implemented innovative pedagogical strategies (Lin dkk., 2024). Phenomenology is chosen as the method because it allows for an in-depth exploration of how educators make meaning of their experiences with new teaching methods and how these experiences shape their teaching practices. Unlike quantitative studies, which focus on external outcomes, phenomenology emphasizes subjective experiences and provides a holistic view of the phenomena being studied. By focusing on educators' personal experiences, this approach reveals insights into the complexities of teaching and learning that are often hidden in broader statistical analyses. This study seeks to provide a deeper understanding of how innovative teaching methods are experienced and perceived by educators, and how these experiences contribute to their professional development.

The structure of this article is designed to provide a comprehensive exploration of the phenomenon under investigation. The introduction outlines the context and relevance of the study, highlighting the importance of understanding educators' experiences with innovative pedagogical strategies (Pesovski dkk., 2024). Following this, the methodological approach of phenomenology is explained, detailing the steps taken to gather and analyze data from educators. The article proceeds with a presentation of the data analysis, focusing on key themes that emerged from the interviews. Finally, the discussion will interpret these findings in light of existing literature, followed by conclusions that offer practical implications for educators and future research directions.

RESEARCH METHODS

Research Design

This study employed a phenomenological approach, aiming to explore the lived experiences of educators implementing innovative pedagogical strategies in higher education (Yang & Hsu, 2020). Phenomenology was chosen for its ability to provide a deep understanding of how individuals perceive and make sense of their experiences, making it highly suitable for addressing the research question focused on the subjective experiences of educators. The phenomenological method emphasizes the exploration of personal experiences and the meaning individuals attach to those experiences, which aligns with the goal of this study to uncover the nuances of educators' perceptions of the impact of innovative teaching methods on student engagement and learning outcomes.

Specifically, a descriptive phenomenological design was utilized, focusing on capturing and describing the essence of the educators' experiences with minimal interpretation. This approach allows for the identification of common themes across participants' narratives, providing a rich and

detailed understanding of the phenomenon under study. By adhering to this method, the research sought to maintain a focus on the authenticity of the participants' voices while minimizing external biases and assumptions.

Participants

Participants in this study were 10-12 educators from various faculties within higher education institutions (Vega dkk., 2023). The choice of this sample size aligns with recommendations in phenomenological research, where a smaller, focused group allows for in-depth exploration of participants' experiences and the identification of meaningful patterns. By limiting the sample to 10-12 participants, the study ensures sufficient depth in the data while maintaining feasibility in conducting detailed analyses, given the intensive nature of qualitative interviews and thematic coding. This range also provides a balance between capturing diverse perspectives and avoiding data saturation, which is critical in phenomenological studies. A purposive sampling strategy was used to select participants who had substantial experience in using innovative teaching strategies, particularly those that involved technology integration or project-based learning, within the past year. Inclusion criteria included educators who had actively adopted innovative pedagogical methods in their courses and were willing to share their experiences. Educators who relied exclusively on traditional teaching methods were excluded from participation.

The participants were diverse in terms of age, gender, and academic background, ensuring that a range of perspectives were captured. While demographic details such as age and gender were not central to the research question, they contributed to the broader context of the educational environment. The sample represented a range of disciplines, including the social sciences, natural sciences, and humanities, reflecting the widespread use of innovative methods across fields of study in higher education.

Data Collection

Data were collected through in-depth, semi-structured interviews conducted with each participant. The interviews were designed to allow participants to share their experiences freely, while also providing a framework to ensure consistency across interviews. Each interview lasted approximately 45 to 60 minutes and was conducted in a private, quiet setting to ensure a comfortable environment for the participants to share their thoughts.

The interview protocol was guided by open-ended questions, focusing on the educators' experiences with innovative teaching methods, the challenges they faced, and their perceptions of how these methods impacted student engagement and learning outcomes (Chen dkk., 2024). Probing questions were used to elicit further details when necessary. The interview process was audio-recorded with participants' consent and transcribed verbatim for analysis.

In addition to the interviews, classroom observations were conducted to complement the interview data. Observations focused on classroom dynamics, including student participation, engagement, and interactions during lessons involving innovative teaching strategies. Observational data were recorded in field notes, which were later integrated with interview transcripts for thematic analysis.

Data Analysis

The data were analyzed using a thematic analysis approach, which is commonly used in phenomenological research to identify, analyze, and report patterns or themes within the data. The analysis involved several stages: familiarization with the data through repeated readings of the transcripts, initial coding of significant statements, and grouping codes into broader themes that reflected the participants' shared experiences. These themes were then reviewed, refined, and interpreted to uncover the core essences of the educators' experiences with innovative teaching methods.

Thematic analysis was performed manually, though qualitative analysis software (such as NVivo) was used to assist with organizing and managing the data. The primary focus was on ensuring that the identified themes were grounded in the participants' words and experiences, with minimal

interpretation. Through this rigorous process, essential themes regarding the benefits, challenges, and impact of innovative teaching strategies emerged.

Ethical Considerations

Ethical approval for this study was obtained from the relevant ethics committee (Wang dkk., 2024). The approval process involved a thorough review of the study's design, ensuring adherence to ethical guidelines related to participant recruitment, informed consent, and data management. All participants provided informed consent prior to their involvement, and they were informed about the purpose of the study, the voluntary nature of participation, and their right to withdraw at any time without penalty. Confidentiality and anonymity were assured by using pseudonyms for all participants and by securely storing the data to protect personal information. To further reinforce ethical compliance, the study adhered to the principles outlined in the Declaration of Helsinki, including respect for participant autonomy, beneficence, and non-maleficence. Ethical considerations also included ensuring that participants faced no risk of harm or discomfort as a result of their involvement. The research team was vigilant in maintaining transparency and trust throughout the study, offering participants opportunities to review and clarify their contributions as needed.

The study adhered to internationally recognized ethical standards, ensuring that participants' rights and privacy were respected throughout the research process. Furthermore, the findings were presented in a manner that respects the integrity of the participants' experiences, with direct quotes used to support the themes without revealing any identifying information.

RESULTS AND DISCUSSION

Experiences with Innovative Teaching Methods

The interviews revealed that most educators found the implementation of innovative pedagogical strategies, such as project-based learning and the integration of digital technologies, to be significantly beneficial in enhancing student engagement. As one participant stated, "Using technology in the classroom has transformed how students interact with the material. They are more active, they ask more questions, and they seem genuinely invested in the lessons." This aligns with the perceptions of several other educators who highlighted the positive impact of digital tools in fostering a more interactive and dynamic learning environment.

However, the participants also acknowledged various challenges in adopting these innovative methods. Some educators noted the steep learning curve associated with new technologies, which initially hindered their ability to implement these strategies effectively. As one participant reflected, "At first, it was overwhelming. The technology was a barrier in itself—learning to use it while teaching the content was difficult. But over time, I saw the benefits as the students became more engaged." These mixed experiences point to the need for continued support and professional development for educators when incorporating new teaching methods.

Student Engagement and Participation

In line with the previous theme, most educators observed an increase in student engagement when using innovative pedagogies, particularly those that incorporated technology. Several participants mentioned that students were more eager to participate in discussions, demonstrate critical thinking, and collaborate with their peers. "When students use digital platforms for group work, I notice them contributing ideas more freely and sharing their thoughts without hesitation. They are more open," shared another educator.

This increase in engagement was not universal, however. Some educators experienced resistance from students, especially those who were accustomed to traditional methods. "In some classes, students were reluctant to embrace the new approach. They found it challenging to adjust to a less structured classroom environment, and they missed the direct instruction style," said one of the

participants. This dichotomy highlights the diverse experiences among students in relation to innovative teaching methods.

Impact on Learning Outcomes

Educators universally reported that the innovative teaching methods positively influenced learning outcomes, particularly in terms of student comprehension and retention. "Students seem to remember the material better when they have hands-on experience or are working on real-world problems. It's like they can apply what they've learned in ways that make sense to them," said one participant. Additionally, many noted that students showed improved problem-solving abilities and greater creativity in their work.

However, the relationship between teaching methods and learning outcomes was not always straightforward. Some educators observed that while engagement and participation were high, this did not always translate to improved academic performance "While the students were more engaged, some still struggled to grasp the core concepts. The novelty of the method may have distracted from the essential learning goals," explained one educator. This underscores the importance of carefully aligning innovative methods with clear instructional objectives to maximize their effectiveness.

Challenges in Implementation

The educators highlighted several challenges they encountered when implementing innovative pedagogies, most notably the lack of sufficient resources and time constraints. Several participants mentioned that despite their enthusiasm for using innovative methods, they often faced logistical hurdles. "Time is a big issue. There is not enough time to design high-quality, project-based lessons and still cover the entire syllabus," one educator explained. Additionally, limited access to technology and inadequate institutional support were recurring concerns. One educator noted, "The resources we have are not always up to date. It is frustrating when the technology we want to use isn't available, or it doesn't function as expected."

Despite these challenges, educators expressed a strong commitment to continue exploring innovative methods. As one participant concluded, "The difficulties are part of the learning process, and I believe that once we overcome these barriers, the results will be even more rewarding for both students and teachers."

The findings reveal that while innovative teaching methods, particularly those incorporating technology, positively affect student engagement and learning outcomes, the experiences of educators are shaped by various contextual factors such as institutional support, available resources, and the readiness of students to embrace change. The challenges faced during the implementation of these methods underscore the need for continued professional development and structural support for educators to maximize the potential of innovative pedagogical strategies.

This study explored the lived experiences of educators who have implemented innovative pedagogical strategies in higher education, revealing key insights into how these practices influence their teaching and engagement with students. The findings highlight both the opportunities and challenges faced by educators when adopting new methods, as well as the transformative potential these methods have for their teaching philosophy and professional identity. These insights directly address the central research question of how educators experience and interpret the impact of innovative teaching strategies, shedding light on the subjective and multifaceted nature of these experiences.

The findings offer a nuanced understanding of how innovative pedagogical strategies, such as project-based learning and digital tools, contribute to changes in educator practices and perceptions. Educators reported an increase in student engagement and active learning, aligning with previous research that emphasizes the positive effects of interactive teaching methods on student participation

(Freeman et al., 2014). However, the study also highlighted the personal and professional challenges faced by educators, including time constraints, lack of resources, and the need for continuous adaptation to new technologies. These challenges, while not universally experienced, emerged as critical factors that influenced the success or failure of these strategies. In particular, educators expressed a deeper sense of fulfillment when they were able to see the tangible benefits of innovation in terms of student engagement, but also noted the emotional and intellectual toll of continually adjusting their teaching practices. This indicates that the process of implementing innovation is not linear but deeply embedded in educators' personal reflections and professional growth.

When compared with existing literature, the findings complement previous studies that emphasize the role of the educator's subjective experience in shaping the effectiveness of teaching innovations. Biggs (2003) and Meyer et al. (2014) suggest that teaching strategies must be aligned with the educator's own understanding and commitment to the approach for them to be successful. This study reinforces the importance of this alignment, highlighting that educators' personal experiences and perceptions of innovative practices play a crucial role in the adoption and success of these methods. However, the findings also extend the literature by providing a more in-depth exploration of the emotional and cognitive challenges faced by educators, which are often overlooked in studies that focus solely on student outcomes. By adopting a phenomenological approach, this study enriches the conversation about teaching innovation by emphasizing the complex interplay between personal experience, teaching philosophy, and the external pressures that educators face in the classroom.

The findings of this study have significant implications for both theoretical and practical applications in higher education. From a theoretical perspective, the study reinforces the critical role of the educator's lived experiences in shaping the success of innovative pedagogical methods. By highlighting the personal, emotional, and cognitive challenges educators face, it offers a more holistic understanding of teaching innovation that goes beyond student outcomes. This perspective encourages a deeper exploration of the dynamic relationship between educators' perceptions, their teaching practices, and the educational environment. Practically, these insights suggest that higher education institutions should provide more comprehensive support to educators in implementing new teaching strategies, including professional development programs that address both the technical and emotional dimensions of teaching. Additionally, universities might consider fostering a more collaborative teaching culture where educators can share experiences and strategies, reducing feelings of isolation that can accompany the adoption of new methods. The study also suggests that innovation in pedagogy should be understood not just as a technological or methodological change but as a process that is deeply intertwined with educators' identities and professional journeys.

From a broader perspective, the findings have relevance for the larger educational community. The challenges and successes highlighted in this study are not unique to the participants but reflect broader societal trends in education, particularly in contexts where technology and new teaching methods are increasingly prioritized (Rahman dkk., 2023). In settings where educators are grappling with changing curricula, student needs, and institutional pressures, the insights from this study offer a valuable lens for understanding how these factors intersect with teachers' lived experiences. For instance, the emotional toll that educators face when adopting new technologies could be amplified in under-resourced institutions, underscoring the need for targeted interventions and support for educators in such environments. Therefore, the findings provide crucial insights into how teaching innovation can be better implemented and supported in diverse educational settings.

While this study provides valuable insights into the experiences of educators adopting innovative pedagogical strategies, several limitations must be acknowledged. First, the sample size, which consisted of only 10-12 participants from a single institution, limits the generalizability of the findings to other educational contexts. The experiences of these educators may not fully capture the diversity of teaching environments across different institutions or countries. Additionally, the focus on a specific group of educators who have already adopted innovative teaching methods may not reflect the experiences of those still reliant on traditional approaches. Another limitation lies in the

methodological constraints of phenomenology itself, which emphasizes in-depth exploration of a small group of participants, potentially leaving out the broader systemic and institutional factors that also influence teaching innovation. Lastly, the study's reliance on interviews and observations as data sources may not capture the full complexity of educators' experiences, particularly those that occur outside the classroom or in informal professional settings.

The findings from this study open several avenues for future research, particularly in the field of pedagogical innovation (Akalin & Sahin, 2020). One potential direction for further study is to explore the experiences of educators in different cultural or institutional contexts, as this could reveal additional factors that influence the adoption and success of innovative teaching methods. Research could also focus on longitudinal studies that track the development of educators' teaching practices and attitudes over time, providing deeper insights into how sustained exposure to innovation influences their professional growth and identity. Additionally, future research could examine the role of students' perceptions and experiences in the effectiveness of innovative teaching strategies, offering a more comprehensive understanding of the dynamic between educators and learners in the adoption of new pedagogies. Furthermore, investigating the broader organizational and policy-level factors that support or hinder innovation in teaching could help inform institutional strategies for fostering a culture of teaching excellence. By expanding the scope of this research, future studies can contribute to a more nuanced and inclusive understanding of teaching innovation in higher education.

CONCLUSION

This study explored the lived experiences of educators adopting innovative teaching strategies in higher education, addressing the challenge of understanding how these educators perceive and navigate pedagogical change. The findings revealed that while educators recognized the potential of new teaching methods, they faced significant emotional and professional challenges in their adoption process. The study contributes to existing literature by emphasizing the complex, subjective nature of educational innovation, offering a more nuanced understanding of how teaching practices evolve in response to innovation. In particular, the findings underscore the importance of institutional policies that prioritize comprehensive support for educators, including targeted professional development programs and resources that address both the technical and emotional aspects of teaching innovation. Institutions can play a critical role by fostering a culture of collaboration, where educators can share best practices and collectively address challenges, reducing the sense of isolation often associated with pedagogical change.

For policymakers, these insights suggest the need for structural changes that ensure educators have access to adequate funding, up-to-date technology, and time for professional learning. Policy frameworks could also include mechanisms for ongoing feedback from educators and students to refine and adapt support systems, ensuring they remain relevant to the evolving demands of higher education. These insights help address gaps in prior research, which often focused on the outcomes of innovation rather than the educators' personal experiences. Future research could explore the interplay between institutional policies, organizational culture, and the long-term sustainability of innovative teaching methods. Additionally, examining how student feedback informs and enhances pedagogical innovation could provide valuable perspectives on creating a more holistic and inclusive educational environment.

Broadening the scope of future studies to include diverse institutional contexts—such as under-resourced universities or those in non-Western settings—could further illuminate how different systemic and cultural factors impact the adoption of innovative pedagogies. These efforts would contribute to a more global understanding of educational innovation, offering actionable strategies for supporting educators across varied environments.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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