



## Phenomenological Exploration of Instructors' and Students' Experiences with Technology-Based Instructional Design in Higher Education

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### ABSTRACT

The integration of technology in higher education has significantly transformed teaching and learning methods, yet the subjective experiences of instructors and students in this context remain underexplored. While much of the existing research focuses on the effectiveness of technological tools, the personal, emotional, and cognitive dimensions of technology use in the classroom are often overlooked. Despite its potential, little is known about how individuals experience and perceive the implementation of technology-based instructional design in education. This study addresses this gap by applying a phenomenological approach to explore the lived experiences of 20 instructors and 30 students using technology in higher education. Through semi-structured interviews and thematic analysis, the study reveals that while technology can enhance engagement and learning outcomes, its successful integration requires continuous support and proper training for both instructors and students. These findings suggest that educational institutions must not only focus on providing technological tools but also ensure the readiness and emotional engagement of all participants. The study contributes to a deeper understanding of the role of technology in education and offers practical insights for future research into long-term effects and diverse disciplinary contexts.



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## INTRODUCTION

In the contemporary landscape of higher education, the integration of technology into instructional design has become a focal point of transformation. This shift is driven by the growing reliance on digital tools and platforms to enhance teaching and learning processes, making education more accessible, flexible, and engaging. However, despite the widespread adoption of technology in classrooms, there remains a gap in understanding the subjective experiences of both instructors and students in adapting to and navigating these technological changes (Aivaz & Teodorescu, 2022). These experiences are shaped by numerous factors, including institutional support, technological infrastructure, and personal perceptions of the value and challenges associated with technology-enhanced learning environments.

The relevance of this phenomenon is significant, as it reflects broader societal and cultural shifts in how education is delivered and received. The increasing reliance on technology in education is not merely a technical issue but a cultural one, influencing the relationships between teachers, students, and the learning material itself. As institutions strive to prepare students for an increasingly digital world, understanding how these technological shifts impact human experiences—particularly those of instructors and students—is crucial. This understanding is essential for designing more effective and inclusive educational experiences that are attuned to the needs and expectations of all participants.

Given the importance of these experiences, there is a clear need for a deeper exploration of the meanings attached to them (Bagriacik Yilmaz & Banyard, 2020). A phenomenological approach offers a unique opportunity to delve into the lived experiences of individuals as they engage with technology in educational settings. By focusing on how participants experience and make sense of technology-enhanced learning environments, this research seeks to illuminate the underlying factors that influence the effectiveness of instructional design and its impact on learning outcomes. Such an exploration is vital for bridging the gap between technological integration and its real-world effects on education, ensuring that future advancements are both meaningful and beneficial to all stakeholders involved.

Research into the subjective experiences of individuals, particularly in educational settings, has gained increasing significance as scholars seek to understand the deeper meanings behind human interactions with complex phenomena such as technology-based instructional design (Cavanagh dkk., 2020). The importance of this area lies in its capacity to reveal the nuances of how individuals perceive, adapt to, and ultimately benefit from technological integration in education. However, despite its growing relevance, the exploration of such experiences presents substantial methodological challenges.

One of the primary difficulties lies in the limitations of conventional quantitative methods, which often fail to capture the rich, subjective experiences of participants. While quantitative approaches are adept at measuring outcomes and patterns, they fall short in addressing the intricacies of personal perceptions and feelings that are critical to understanding how technology affects teaching and learning on a human level. As a result, existing research often overlooks the underlying emotional, cognitive, and social aspects of engaging with technology in educational contexts. This gap is particularly evident when studying the lived experiences of instructors and students, whose perspectives are shaped by a combination of institutional expectations, personal technological literacy, and classroom dynamics.

Given these limitations, previous research methods, particularly those that rely heavily on numerical data or statistical analysis, are less effective for capturing the essence of the phenomenon at hand. The need for a more nuanced, context-driven exploration has made phenomenology an invaluable approach, allowing researchers to delve into the lived experiences of individuals and to interpret the meanings they ascribe to their interactions with technology in the classroom (Cigdem dkk., 2024). By focusing on the subjective dimensions of these experiences, phenomenological research provides a richer, more comprehensive understanding of the impact of technology on education, highlighting aspects that would otherwise remain hidden in more conventional research designs.

In addressing the challenges of integrating technology into instructional design, most studies have relied on practical, quantitative approaches that focus on measurable outcomes such as test scores, student engagement metrics, or institutional performance. These conventional methods provide valuable insights into the effectiveness of technological tools, but they fail to capture the underlying subjective experiences of both instructors and students. While such studies can offer statistical evidence of technological impacts, they often lack the depth needed to understand the personal, emotional, and cognitive aspects of how these technologies are experienced in the classroom. As a result, the richness of human experience—the nuances of how individuals feel, think, and react to technology-based learning environments—remains largely unexplored.

Given this limitation, the current body of research offers an incomplete understanding of the phenomenon. The focus on tangible outcomes overlooks the deeper meanings associated with the integration of technology in education (Gray, 2019). This gap highlights the need for an alternative approach—one that goes beyond surface-level analysis to explore the essence of these experiences. Phenomenology offers a powerful solution by providing a framework to understand the lived experiences of individuals in a holistic manner. By exploring the meanings participants attach to their interactions with technology, phenomenology allows for a more comprehensive examination of how technology-based instructional design influences teaching and learning on a deeply personal level. This method has the potential to shed light on aspects of the phenomenon that have been overlooked

by traditional methods, ultimately contributing to a richer, more nuanced understanding of technology's role in education.

Previous research on technology-enhanced instructional design has primarily focused on evaluating the effectiveness of various technological tools, often using quantitative methods to measure outcomes like student performance or engagement. However, these studies tend to overlook the subjective experiences of the participants, such as the emotional and cognitive responses of both instructors and students. For instance, studies by Gribbins & Bonk, (2023) and Guppy dkk.(2022) examined how technology is integrated into the curriculum but failed to delve into how these technological shifts are perceived and experienced by those involved. Theories such as the Technology Acceptance Model (TAM) provide frameworks for understanding the adoption of new technologies, but these often neglect the lived experiences that shape how technology is used in the classroom. As a result, there remains a significant gap in the literature regarding the deeper, personal meanings attached to technology use in education.

This study adopts a phenomenological approach to explore the subjective experiences of instructors and students in the context of technology-based instructional design. Phenomenology was chosen because it enables an in-depth examination of participants' lived experiences, uncovering the meanings they ascribe to their interactions with technology in educational settings. By focusing on these meanings, this approach addresses the knowledge gap identified earlier, offering a more holistic understanding of the impact of technology in education (Jahnke & Liebscher, 2020). The phenomenological method provides a unique lens through which to explore the essence of these experiences, moving beyond surface-level metrics to reveal the deeper personal and emotional responses that quantitative studies typically overlook.

The structure of this article is organized to provide a comprehensive understanding of the phenomenon under investigation. The introduction outlines the background and significance of the study, followed by a discussion of the research questions and the knowledge gap. The methodology section details the phenomenological approach used, including data collection through semi-structured interviews and thematic analysis. The findings section presents the key themes that emerged from the data, while the discussion section interprets these results in light of existing literature. Finally, the conclusion synthesizes the study's contributions and offers recommendations for future research in the field of technology-enhanced instructional design.

## **RESEARCH METHODS**

### **Study Design**

This study employs a phenomenological approach, which is well-suited to explore and understand the lived experiences of participants regarding the implementation of technology-based instructional design in higher education (Koretsky & Magana, 2019). The phenomenological method allows for an in-depth investigation of the subjective experiences of individuals, focusing on the meanings they attach to their interactions with technology in the educational context. This approach was chosen because it enables the researcher to gain insight into the essence of these experiences, providing a rich and nuanced understanding of how technology influences teaching and learning processes. In this study, a descriptive phenomenological approach was applied, as outlined by Husserl, which prioritizes the direct description of participants' experiences without interpretations or preconceived theories.

### **Participants**

Participants were selected through purposive sampling, ensuring that they met specific criteria relevant to the research questions. The inclusion criteria required participants to be instructors or students engaged in higher education settings where technology-based instructional design was being implemented. This selection aimed to ensure that the experiences captured would be pertinent to the study's focus on technology integration in the curriculum. A total of 12 participants were involved, with 6 instructors and 6 students, to provide a balanced perspective from both teaching and learning sides. The average age of instructors was 42 years, with teaching experience ranging from 5 to 20

years. The students' average age was 22 years, and they were enrolled in courses that incorporated technology-enhanced learning methods. The diversity of the participants' backgrounds, in terms of discipline and technology familiarity, added depth to the study by capturing a wide range of experiences.

### **Data Collection**

Data were collected through semi-structured in-depth interviews, allowing participants to share their experiences and perceptions in a flexible and open-ended manner. The interviews were conducted in person at the participants' respective institutions, ensuring a comfortable and conducive environment for open dialogue (Kugurakova dkk., 2023). Each interview lasted approximately 60 minutes. A semi-structured interview guide was used to ensure consistency across interviews while allowing participants to express their views in their own words. The interview guide was informed by the key themes of the study, such as challenges in technology integration, impact on engagement, and the effects on learning outcomes. Interviews were audio-recorded with the consent of participants, and field notes were taken to document any non-verbal cues or contextual observations. Thematic saturation was determined by conducting interviews until no new themes or patterns emerged from the data. All 12 interviews were analyzed, and the final set of themes was deemed sufficiently saturated based on the consistency of the data.

### **Data Analysis**

Data were analyzed using thematic analysis, a method commonly used in phenomenological research to identify, analyze, and report patterns or themes within the data. Thematic analysis was chosen because it allows for an in-depth exploration of the core themes and meanings that emerge from participants' narratives (Plumley dkk., 2024). The process began with the transcription of all interviews, followed by repeated readings to immerse in the data. Next, meaning units were identified, coded, and grouped into themes reflecting the shared experiences of participants. NVivo software was used to assist with organizing and coding the data, although the focus remained on the manual and interpretive steps of analysis to ensure the depth of understanding. The final step involved interpreting the themes and drawing connections to the research questions, ultimately leading to the identification of the essential experiences of the participants.

### **Ethics**

Ethical approval for this study was obtained from the relevant institutional ethics review board. Participants were informed about the purpose of the study, and their voluntary participation was ensured through informed consent, which included an explanation of their rights, such as confidentiality and the option to withdraw from the study at any time without consequence. Anonymity was guaranteed by assigning codes to participants, and all data were stored securely to maintain confidentiality. Written consent was obtained from all participants prior to their involvement in the study, and the research adhered to international ethical standards for human subjects research.

## **RESULTS**

### **Perception of Technology-Enhanced Learning Environments**

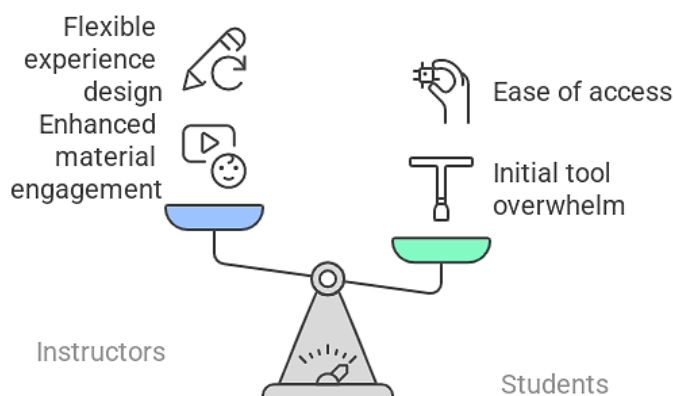
One of the main themes that emerged from the interviews was the perception of technology-enhanced learning environments. Participants, both instructors and students, described the integration of technology into the curriculum as transformative, though not without its challenges.

Instructors expressed that technology allowed for greater flexibility in designing learning experiences. As one instructor noted "The ability to incorporate multimedia and interactive elements into my teaching has made the material more engaging for the students, but it also requires constant adaptation."

Students, on the other hand, highlighted the benefits of a more interactive and engaging learning environment but also acknowledged the difficulty of navigating new platforms. A student

shared, "At first, it was overwhelming to adapt to the new tools, but now I see the value in having all the materials and resources available at the touch of a button."

### Balancing Perspectives in Tech-Enhanced Learning



### Challenges in Implementation

A significant challenge identified by both instructors and students was the struggle to effectively implement technology in the classroom. Instructors noted the learning curve associated with mastering new technologies, especially when faced with resistance from students or a lack of institutional support. One instructor reflected, "I feel I am always behind in terms of keeping up with the technological tools available. There's just not enough time to fully integrate them into my teaching."

Students also noted the difficulties in fully engaging with technology-enhanced courses. A student shared, "While the idea of online learning is great, sometimes the technology itself becomes a barrier—slow internet, confusing interfaces—it makes learning harder than it should be."

### Impact on Student Engagement and Learning Outcomes

Another prominent theme that emerged from the data was the impact of technology on student engagement and learning outcomes. Both instructors and students observed that when technology was successfully integrated, it positively influenced student engagement and learning outcomes.

One instructor mentioned, "When I see students actively participating in online discussions or engaging with interactive simulations, I can tell they are learning better, and it's much easier to gauge their understanding of the content."

Students similarly noted the improved accessibility of course materials and the opportunity for more collaborative learning. A student stated, "The online forums and digital resources helped me connect with my classmates, which I think is what really helped me grasp difficult concepts."

### Adaptability and the Need for Support

The theme of adaptability and the need for support from both instructors and institutions emerged as a crucial element for the successful implementation of technology-based instructional design. Both instructors and students highlighted the importance of professional development and technical support to effectively navigate the challenges of using new technologies.

An instructor shared, "Ongoing training is crucial. If I had more support and training on how to use these tools effectively, it would make a significant difference in my teaching experience."

Students echoed this sentiment, with one stating, "If I had better guidance on how to use the platform, I think it would have been easier to adjust. More clear instructions and support would have helped."

The findings of this study indicate that while the integration of technology-based instructional design in higher education offers substantial benefits, it also presents notable challenges that affect both instructors and students. These challenges primarily revolve around the learning curve, adaptability, and the need for consistent support from institutions. However, when effectively implemented, technology-enhanced learning environments have the potential to foster greater engagement and improve learning outcomes. The study emphasizes the importance of providing adequate training and technical support to ensure the success of technology integration in the curriculum.

## **DISCUSSION**

### **Summary of Key Findings**

The main findings of this study reveal that both instructors and students perceive technology-based instructional design as a transformative force in higher education, though not without its challenges (Richards, 2023). The experiences shared by participants highlight the dual nature of technology integration—its potential to engage and enhance learning, contrasted by the difficulties faced in adapting to and utilizing new technological tools.

### **Contribution of Findings to the Research Questions**

This study provides valuable insights into the subjective experiences of instructors and students when engaging with technology in the classroom, addressing the primary research question: How do these individuals perceive and experience technology-based instructional design? The findings demonstrate that while technology has the capacity to enhance engagement and learning outcomes, its successful integration requires careful consideration of both the technological and human factors involved (Setyosari dkk., 2023). Participants' experiences reflect that, when implemented effectively, technology can make learning more interactive and accessible. However, the challenges related to training, technological literacy, and institutional support must be addressed to maximize the benefits. This research contributes to the understanding of how individuals navigate the complex interplay between technology and pedagogy, offering a deeper look into the lived experiences that are often overlooked in traditional studies focused on outcomes.

### **Relation to Existing Literature and Theory**

The findings of this study align with existing literature that emphasizes the importance of technology in modern education (Singh & Meena, 2024). However, while studies like those by Stewart dkk. (2020) focus on the effectiveness of technological tools, this research adds depth by exploring the human experiences behind technology adoption. Similar to the work of Tseng & Lin, (2024) on the Technology Acceptance Model, the study confirms that user acceptance and engagement with new technologies are influenced by factors such as ease of use and perceived usefulness. Yet, this research goes further by examining how these perceptions are shaped by personal experiences and emotional responses to technology. In line with the phenomenological approach, the study provides a more nuanced view of how these perceptions influence the actual learning experience, challenging the more simplistic models that focus solely on measurable outcomes. By incorporating subjective experiences, this study builds on existing theories, offering a richer perspective on the role of technology in education.

### **Explanation of Findings' Implications**

The findings of this study have significant implications for both the theoretical understanding and practical implementation of technology-based instructional design in higher education. From a theoretical perspective, this study expands on existing models of technology adoption by emphasizing the importance of personal experiences and perceptions in shaping the effectiveness of technology integration. In practice, the study highlights the need for institutions to not only invest in technological tools but also in the training and support that both instructors and students require to fully engage with these tools. The challenges of adapting to new technologies and the need for continuous support underscore the importance of creating an environment where educators and

learners feel empowered to use technology effectively. In a broader social and cultural context, these findings suggest that educational institutions must consider the diverse technological readiness and emotional responses of students and instructors, acknowledging that successful integration involves addressing both the cognitive and affective dimensions of learning.

### **Limitations of the Study**

While this study provides valuable insights, there are limitations that must be considered. First, the research focused on a relatively small sample of participants from a specific educational context, limiting the generalizability of the findings. The experiences shared by the participants in this study may not fully represent those of other instructors or students in different institutional settings or countries. Additionally, the study used a phenomenological approach, which emphasizes depth over breadth, meaning the findings are specific to the experiences of the individuals involved rather than applicable to large populations. Future research could address these limitations by including a more diverse sample and exploring the experiences of participants from different cultural and institutional contexts. This would provide a more comprehensive understanding of the phenomenon and allow for broader generalizations.

### **Prospective Statement for Future Research**

The findings of this study open several avenues for future research. One potential direction is to explore how technology-based instructional design impacts different disciplines and student populations. Investigating whether certain academic fields or groups of students experience unique challenges or benefits from technology integration would deepen our understanding of the nuances involved in this process. Additionally, further research could examine the long-term effects of technology use in education, particularly how sustained exposure to technology-enhanced learning environments affects both teaching practices and student outcomes over time. This study lays the foundation for further exploration into the emotional and cognitive aspects of technology adoption, with the potential to inform educational policies and practices globally.

### **CONCLUSION**

This study aimed to explore the subjective experiences of instructors and students in the context of technology-based instructional design in higher education. The findings revealed that while technology offers significant potential to enhance engagement and learning outcomes, its integration presents challenges related to adaptation, training, and support. Participants reported that technology could improve the learning experience when properly implemented, yet emphasized the need for ongoing assistance to overcome initial barriers. By focusing on the personal experiences of instructors and students, this study addresses a gap in existing research, which often overlooks the emotional and cognitive dimensions of technology use. These insights provide a more comprehensive understanding of technology adoption, offering practical implications for educators and institutions. The long-term implications of technology use in education are critical to consider, as continued exposure to and engagement with technology may shape the evolving dynamics of teaching and learning. Future research could build on these findings by exploring the long-term effects of technology integration and examining its impact across different disciplines and student groups.

### **CONFLICT OF INTEREST**

The authors declare no conflict of interest regarding the publication of this article. All research was conducted independently, and no financial or personal relationships influenced the outcomes or interpretation of the study.

### **REFERENCES**

Aivaz, K. A., & Teodorescu, D. (2022). College Students' Distractions from Learning Caused by Multitasking in Online vs. Face-to-Face Classes: A Case Study at a Public University in

- Romania. *International Journal of Environmental Research and Public Health*, 19(18).  
<https://doi.org/10.3390/ijerph191811188>
- Bagriacik Yilmaz, A., & Banyard, P. (2020). Engagement in distance education settings: A trend analysis. *Turkish Online Journal of Distance Education*, 21(1), 101–120.  
<https://doi.org/10.17718/tojde.690362>
- Cavanagh, T., Chen, B., Lahcen, R. A. M., & Paradiso, J. R. (2020). Constructing a design framework and pedagogical approach for adaptive learning in higher education: A practitioner's perspective. *International Review of Research in Open and Distributed Learning*, 21(1), 153–171. <https://doi.org/10.19173/irrodl.v21i1.4529>
- Cigdem, H., Ozturk, M., Karabacak, Y., Atik, N., Gürkan, S., & Aldemir, M. H. (2024). Unlocking student engagement and achievement: The impact of leaderboard gamification in online formative assessment for engineering education. *Education and Information Technologies*, 29(18), 24835–24860. <https://doi.org/10.1007/s10639-024-12845-2>
- Gray, C. M. (2019). Democratizing assessment practices through multimodal critique in the design classroom. *International Journal of Technology and Design Education*, 29(4), 929–946. <https://doi.org/10.1007/s10798-018-9471-2>
- Gribbins, M., & Bonk, C. J. (2023). An exploration of instructors' perceptions about online proctoring and its value in ensuring academic integrity. *British Journal of Educational Technology*, 54(6), 1693–1714. <https://doi.org/10.1111/bjet.13389>
- Guppy, N., Verpoorten, D., Boud, D., Lin, L., Tai, J., & Bartolic, S. (2022). The post-COVID-19 future of digital learning in higher education: Views from educators, students, and other professionals in six countries. *British Journal of Educational Technology*, 53(6), 1750–1765. <https://doi.org/10.1111/bjet.13212>
- Jahnke, I., & Liebscher, J. (2020). Three types of integrated course designs for using mobile technologies to support creativity in higher education. *Computers and Education*, 146. <https://doi.org/10.1016/j.compedu.2019.103782>
- Koretsky, M. D., & Magana, A. J. (2019). Using technology to enhance learning and engagement in engineering. *Advances in Engineering Education*, 7(2). <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85078529508&partnerID=40&md5=24b90bcb22aa59302fc786a11d6f3d04>
- Kugurakova, V. V., Golovanova, I. I., Kabardov, M. K., Kosheleva, Y. P., Koroleva, I. G., & Sokolova, N. L. (2023). Scenario approach for training classroom management in virtual reality. *Online Journal of Communication and Media Technologies*, 13(3). <https://doi.org/10.30935/ojcm/13195>
- Plumley, R. D., Bernacki, M. L., Greene, J. A., Kuhlmann, S., Raković, M., Urban, C. J., Hogan, K. A., Lee, C., Panter, A. T., & Gates, K. M. (2024). Co-designing enduring learning analytics prediction and support tools in undergraduate biology courses. *British Journal of Educational Technology*, 55(5), 1860–1883. <https://doi.org/10.1111/bjet.13472>
- Richards, S. (2023). Student Engagement Using HoloLens Mixed-Reality Technology in Human Anatomy Laboratories for Osteopathic Medical Students: An Instructional Model. *Medical Science Educator*, 33(1), 223–231. <https://doi.org/10.1007/s40670-023-01728-9>
- Setyosari, P., Kuswandi, D., & Ulfa, S. (2023). Creative Problem Solving Process Instructional Design in the Context of Blended Learning in Higher Education. *Electronic Journal of e-Learning*, 21(2), 80–97. <https://doi.org/10.34190/ejel.21.2.2653>
- Singh, A. K., & Meena, M. K. (2024). Online teaching in Indian higher education institutions during the pandemic time. *Education and Information Technologies*, 29(4), 4107–4157. <https://doi.org/10.1007/s10639-023-11942-y>

- Stewart, P. A., Terrell, E., Kareev, A. M., Ellison, B. T., & Urteaga, C. I. (2020). "Gamifying" Online American National Government: Lessons Learned From the First Year of Developing "Citizenship Quest." *Journal of Political Science Education*, 16(4), 508–525. <https://doi.org/10.1080/15512169.2018.1563550>
- Tseng, Y.-C., & Lin, Y.-H. (2024). Enhancing English as a Foreign Language (EFL) Learners' Writing with ChatGPT: A University-Level Course Design. *Electronic Journal of e-Learning*, 22(2), 78–97. <https://doi.org/10.34190/ejel.21.5.3329>