



The Role of Digital Capabilities in SME Business Strategy Based on the Dynamic Capabilities Perspective in the Fashion Sector

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ABSTRACT

This study aims to explore in depth students' experiences with technology- and artificial intelligence (AI)-based learning, as well as how they interpret these changes in the context of higher education. This study employs a qualitative, phenomenological design to comprehensively explore participants' lived experiences. Data were collected through semi-structured interviews, participant observation, and documentation of students selected using purposive and snowball sampling techniques. Data analysis was conducted thematically through the stages of reduction, categorization, and interpretation. The results revealed three main themes: the reconfiguration of learning practices, the ambiguity of technology use, and the construction of adaptive strategies. These findings indicate that the use of AI not only enhances learning autonomy but also raises ethical dilemmas and encourages students to develop reflective strategies in addressing the complexities of digital learning. This study contributes to enriching the field of educational phenomenology by positioning technology as an integral part of the learning experience. In practical terms, the findings underscore the importance of strengthening critical digital literacy and ethical use of technology, as well as the role of educators as reflective facilitators. Policy implications include the need for adaptive regulations regarding the integration of AI in education. Further research is recommended to examine this phenomenon within a broader context and employ a longitudinal approach to gain a more comprehensive understanding.



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1. Introduction

The global transformation of education in the Society 5.0 era is characterized by the integration of digital technology and artificial intelligence (AI) into various aspects of learning. These changes are not only shifting the pedagogical paradigm from teacher-centered to learner-centered but are also reshaping the learning experience, social relationships, and students' construction of meaning. Research indicates that AI can enhance the personalization of learning and the efficiency of educational processes (Opesemowo, 2024). However, the integration of technology also presents new challenges, particularly regarding ethical issues, academic control, and changes in patterns of learning interaction (Nezhad et al., 2025). Therefore, contemporary education must

be understood as a dynamic space characterized by complex interactions among humans, technology, and social values.

In the national context, Indonesia's education system is undergoing a transformation through the implementation of the Merdeka Curriculum, which emphasizes flexibility, differentiated instruction, and character development. Nevertheless, the implementation of this policy still faces various challenges on the ground. Research indicates that teachers struggle to adapt instructional innovations into contextual and meaningful practices (Pane et al., 2025). Furthermore, low literacy and disparities in students' learning abilities remain serious challenges to improving the quality of education (Zuhri, 2026). This situation indicates that policy changes have not yet been fully accompanied by the readiness of the education system and its stakeholders as a whole.

Empirically, students' learning experiences in the digital age reveal complex and multidimensional dynamics. Phenomenological studies reveal that students face ethical dilemmas in the use of AI, particularly regarding the boundary between using it as a learning aid and the potential for academic integrity violations (Rahman & Afandi, 2024). Additionally, technology-based learning experiences foster the emergence of self-directed learning patterns, yet they also pose challenges for managing motivation and learning direction (Rabundika, 2025). Other research also indicates that interactions with AI-based learning systems can influence how students construct meaning regarding their learning processes (Pulungan & Nora, 2025). This underscores that learning experiences are not merely technical but also psychological and reflective.

From a social and cultural perspective, education is a crucial space in the formation of an individual's identity, values, and social relationships. In Indonesia's diverse society, students' learning experiences are significantly influenced by their social and cultural backgrounds. Phenomena such as academic culture shock indicate that the adaptation process does not always proceed smoothly within educational settings (Rifqi & Selian, 2025). Furthermore, rapid changes in the learning system can also trigger psychological stress and negative experiences, such as learning trauma, among some students (Syazali et al., 2025). Thus, a qualitative approach is relevant for gaining a deeper understanding of this reality by exploring individuals' subjective experiences.

Although various studies have examined educational transformation and technology integration, most still rely on quantitative approaches that emphasize outcomes and effectiveness. Research that explores the meaning of learning experiences in depth remains relatively limited. Some studies have used a phenomenological approach to understand educators' experiences with technological change (Hamamra et al., 2025). On the other hand, other studies have begun to examine the experiences of teachers and students in addressing ethical issues related to the use of AI in the classroom (Rehmat et al., 2025). However, studies that comprehensively integrate students' subjective experiences with social contexts and educational policies remain rare.

Based on this background, this study aims to explore in depth students' experiences, perceptions, and constructions of meaning as they navigate the transformation of learning in the digital age. The focus of the study is on how students interpret the use of technology, address learning challenges, and develop adaptation strategies within specific socio-cultural contexts. This study is expected to contribute theoretically to the development of qualitative research, particularly within the phenomenological approach to education. Furthermore, practically, the findings are expected to serve as a foundation for formulating educational policies that are more contextual, adaptive, and grounded in students' real-world experiences.

2. Materials and Methods

This study employs a qualitative approach with a phenomenological design. The phenomenological approach was chosen because this study aims to deeply understand the subjective experiences of students in facing learning phenomena in the era of digital

transformation. This approach allows researchers to explore the meaning of lived experience, which cannot be measured quantitatively but must be understood through a deep interpretation of the participants' perspectives (Mishra & Batra, 2025). Furthermore, phenomenology is also relevant in the context of educational research because it can reveal the psychological, social, and cultural dimensions of individual learning experiences (Lestari et al., 2023).

This study was conducted at a state university in Indonesia from January to April 2025. The research location was selected using purposive sampling, with consideration of the implementation of technology-based learning and the use of AI in the learning process. The research subjects were active students directly involved in these learning experiences. Participants were selected using purposive sampling with the following criteria: (1) active students in at least their third semester, (2) having experience using technology or AI in learning, and (3) willing to serve as research informants. During data collection, snowball sampling was also used to identify additional informants deemed relevant and likely to enrich the research data.

Data collection was conducted in depth using several methods, namely semi-structured interviews, participant observation, and documentation. Semi-structured interviews were used to explore participants' experiences, perceptions, and meanings in a flexible yet focused manner. Participant observation was conducted to understand the context of learning interactions firsthand, including the dynamics of technology use in the classroom. Meanwhile, documentation, including learning notes, student assignments, and academic policies, was used as supporting data. The use of these techniques aimed to obtain comprehensive, in-depth data and to support the data triangulation process (Apoko & Yusnawati, 2025).

Data validity in this study was ensured through several techniques, namely triangulation, member checking, and audit trails. Triangulation was conducted by comparing data from various sources and methods to ensure the consistency of findings. This technique is essential in qualitative research to minimize bias and enhance the credibility of data (Soysal & Türkmen, 2024). Additionally, member checking was performed by asking participants to verify the interview results or the researcher's interpretations to ensure they align with the experiences the participants intended (McKim, 2023). An audit trail was also implemented by systematically documenting the entire research process to enable traceability and scientific accounting.

Data analysis in this study utilized the Miles, Huberman, and Saldaña interactive model, which comprises three main stages: data reduction, data presentation, and drawing conclusions/verification. During the data reduction stage, the researcher selected, focused, and simplified the raw data collected in the field. Next, the data is presented as narratives, matrices, or tables to facilitate understanding of patterns and relationships among categories. The final stage is drawing conclusions, which is done iteratively by continuously verifying the data until valid and consistent findings are obtained (Lauli & Septiadi, 2026). This analysis process is conducted simultaneously with data collection, allowing the researcher to continuously reflect on and delve deeper into the data.

With this systematic and comprehensive methodological design, the study is expected to yield credible, contextually relevant findings that provide a deep understanding of the phenomenon under investigation. Furthermore, transparency in research procedures enables limited replication by other researchers in similar contexts, thereby supporting the advancement of knowledge, particularly in the field of education using a qualitative approach.

3. Results and Discussions

The findings of this study were obtained through a phased qualitative data analysis process, encompassing data reduction, open coding, categorization, and the identification of key themes representing the participants' subjective experiences. The analyzed data were derived from in-depth interviews, participatory observation, and complementary documentation, resulting in a comprehensive picture of the phenomenon. From this analysis, three main themes were identified

that consistently emerged in the participants' narratives: (1) the reconfiguration of learning practices within a digital ecosystem, (2) the ambiguity of meaning and ethical dilemmas in technology use, and (3) the construction of adaptive strategies in addressing the dynamics of learning. These three themes do not stand alone but intersect, forming a complex structure of experience, as also found in phenomenological studies on AI-based learning that emphasize the emergence of multidimensional themes from learners' experiences (Aslan, 2025).

Avoid using personal pronouns, value judgments, elements of the methodology description, and direct repetition of data from tables and graphic material in the text. Numerical results should be rounded in accordance with accepted rules, considering the mean error in the experiment, the confidence interval, or the distribution of values. Research results must be sufficiently substantiated, methodologically sound, and demonstrate novelty and practical value. The "Discussion" exemplarily described by the author provokes discussion and invites other scientists interested in the subject to participate, bringing their well-grounded perspectives on the problem.

3.1. Rethinking Learning Practices in the Digital Ecosystem

The first theme highlights a fundamental shift in students' learning practices resulting from the integration of digital technology and artificial intelligence into the learning process. This shift is not limited to the tools or media used but also touches on epistemological aspects regarding how knowledge is constructed, accessed, and validated. Most participants reported that they now rely more on digital learning resources, including AI, than on conventional, instructor-centered methods. This indicates a shift from instructional learning toward more exploratory and self-directed learning.

One participant stated that:

"Now, when I study, I don't have to wait for the professor's explanation; I can look things up myself using AI or the internet, and sometimes I understand them even faster."

This statement indicates an increase in learning autonomy, but it also has implications for the depth of understanding. Some informants acknowledged that easy access to information often leads them to take shortcuts without engaging in a thorough analytical process. In this context, there is a shift in learning orientation from conceptual understanding toward pragmatic task completion. This finding reinforces the results of Wednesdayandika's (2025) research, which states that although AI supports self-directed learning, its uncritical use can reduce the cognitive elaboration and deep reflection essential to meaningful learning.

3.2. Ambiguity of Meaning and Ethical Dilemmas in the Use of Technology

The second theme reveals that the use of technology in learning not only offers convenience but also gives rise to subjective ambiguities experienced by students. This ambiguity is reflected in a dual experience, in which technology is perceived as both a highly helpful tool and a source of concern. Most participants acknowledged that AI enhances efficiency in accessing information, completing tasks, and understanding learning materials more quickly.

One informant stated:

"AI is really helpful, especially when I have a lot of assignments; it helps me finish them faster and find plenty of references."

However, behind this convenience lies a sense of unease regarding the authenticity of learning outcomes and the potential for dependence on technology. Some participants expressed doubts about the limits of AI use that are still considered ethical in an academic context.

"Sometimes I get confused, is this still learning, or am I just using AI? I'm also afraid of being seen as dishonest."

This statement indicates an internal conflict among students, reflecting a dilemma between efficiency and academic integrity. This finding aligns with the research by Nezhad et al. (2025), which shows that students experience confusion in determining the ethical boundaries of AI use. Additionally, Gao et al. (2026) emphasize that perceptions of AI risks are heavily influenced by the social context and practices surrounding its use, rather than solely by the technology itself.

3.3. The Development of Adaptive Strategies in Responding to the Dynamics of Learning

The third theme indicates that students are not passive in the face of changes in learning, but rather actively develop adaptation strategies to adjust to existing demands. These strategies emerge from reflecting on their learning experiences and from an effort to balance the use of technology with the need for meaningful understanding. Participants described various adaptation strategies, such as double-checking information obtained from AI, combining technology use with group discussions, and developing more flexible, structured learning patterns.

One informant stated:

"I still use AI, but I don't just take it at face value. I usually double-check with a book or discuss it with friends to be more certain."

This strategy demonstrates critical awareness of technology and an effort to maintain the quality of learning. Students actively negotiate between the efficiency of technology and the need for the validity of knowledge. This finding is consistent with the research by Pulungan and Nora (2025), which states that AI-based learning experiences involve a reflective meaning-making process in which students not only receive information but also interpret it in context.

The results of this study indicate that technology-based learning transformation is a complex and multidimensional phenomenon that affects not only the technical aspects of learning but also the cognitive, emotional, and social dimensions of learners. From a constructivist perspective, learners' learning experiences result from active interactions between individuals and their learning environment, in which technology serves as a mediator that shapes how individuals understand and construct knowledge. In this context, AI functions not only as a tool but also as an actor that significantly influences learning dynamics.

Findings on the reconfiguration of learning practices indicate that technology has shifted the authority of knowledge from formal institutions toward more open, flexible digital sources. This reinforces the concept of self-directed learning, in which learners have greater control over their learning processes. However, this research also indicates that such autonomy is not always accompanied by depth of understanding, thereby creating a paradox in digital learning. Hamilton's (2025) study also found that while AI enhances access to information, it does not automatically improve critical thinking skills. Thus, this research contributes by emphasizing the importance of the reflective dimension in technology-based learning.

Meanwhile, the ambiguity of meaning identified in this study indicates that the use of technology in learning is not neutral but rather laden with values, norms, and ethical dilemmas. Students experience a conflict between the need to make optimal use of technology and the desire to maintain academic integrity. These findings reinforce the results of Hamamra et al. (2025), who state that the integration of AI in education raises complex ethical challenges. However, this study expands on that understanding by showing that ethical dilemmas exist not only at the policy level but are also directly experienced by students in their daily practices.

Furthermore, the adaptation strategies developed by students demonstrate a strong capacity for agency in the face of change. Students are not merely passive recipients of technological transformation but active agents who construct strategies to optimize their learning experiences. This aligns with a phenomenological approach that emphasizes that individuals are subjects who give meaning to their life experiences. These findings offer a new perspective: adaptation to technology is not merely a technical process but a reflective process involving the negotiation of meaning, values, and learning identities.

In practical terms, the findings of this study have important implications for the development of educational policy, particularly regarding the integration of technology into learning. An approach is needed that focuses not only on the use of technology but also on strengthening critical digital literacy and the ethical use of AI. Furthermore, educators must act as facilitators who not only transfer knowledge but also guide students in developing reflective and evaluative skills regarding the use of technology.

However, this study has limitations, particularly its narrow research context (limited to a single institution) and the relatively small number of participants, which limits the ability to generalize the findings. Furthermore, this study has not explored changes in students' experiences over the long term. Therefore, future research is recommended to employ a longitudinal or multi-context approach to provide a more comprehensive understanding of the dynamics of technology-based learning.

4. Conclusions

This study demonstrates that students' experiences with technology and artificial intelligence-based learning are complex and multidimensional phenomena that not only transform learning practices but also influence how students interpret the learning process itself. Three main findings, namely, the reconfiguration of learning practices, the ambiguity of the meaning of technology use, and the construction of adaptive strategies, indicate that digital educational transformation involves an epistemological shift from instructional learning toward more reflective and experience-based learning. Learners are not merely users of technology but active agents who negotiate meaning, value, and strategies within their learning processes. Theoretically, this study enriches the field of educational phenomenology by affirming that learning experiences in the digital age are shaped by the interaction among the individual, the social context, and technology, which serves as the primary mediator of knowledge construction.

From a practical and policy perspective, the findings of this study underscore the importance of strengthening critical digital literacy and ethical technology use in education to ensure that technology not only enhances efficiency but also safeguards academic quality and integrity. The role of educators as reflective facilitators is crucial in guiding students to use technology wisely and responsibly. Furthermore, adaptive and contextual educational policies are needed to regulate the use of technology, particularly artificial intelligence, so that it aligns with humanistic educational goals. Although this study has limitations in its context and sample size, the results provide a strong conceptual foundation for future research to explore this phenomenon in a broader context, including through longitudinal or cross-perspective approaches to deepen understanding of the dynamics of learning in the digital age.

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