

Microlearning in Higher Education: A Strategy for Continuous Learning

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Abstract

In the face of rapid technological change and evolving learner needs, higher education is challenged to adopt more flexible and student-centered learning strategies. Microlearning characterized by short, focused learning segments has emerged as a promising approach to support continuous learning among university students. This study aims to investigate the role of microlearning in fostering self-regulated and lifelong learning habits in higher education. Employing a qualitative research design, the study was conducted at two universities in Indonesia from September 2024 to January 2025. Data were gathered through semi-structured interviews, focus group discussions, and document analysis involving 10 lecturers and 20 students who had engaged with microlearning modules. Thematic analysis revealed that microlearning promotes learner autonomy, engagement, and knowledge retention, particularly when integrated meaningfully into the curriculum. However, challenges were identified, including disparities in digital literacy, limited institutional support, and difficulties aligning microlearning with conventional academic structures. The study concludes that while microlearning is not a standalone solution, it holds significant potential as a complementary instructional strategy that supports the development of continuous learning cultures in higher education. This research contributes to the growing body of knowledge on digital pedagogy by offering practical insights for educators and institutions seeking to modernize teaching practices in response to the demands of 21st-century learners.

Keywords

Continuous Learning, Digital Pedagogy, Higher Education, Microlearning.



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INTRODUCTION

In today's rapidly evolving digital landscape, higher education is undergoing significant transformation. The traditional model of long, lecture-based courses is increasingly being supplemented and sometimes challenged by more flexible and dynamic approaches to knowledge acquisition. Among these, *microlearning* has emerged as a promising strategy [1]. Defined as short, focused learning activities designed to meet specific learning outcomes, microlearning caters to the modern learner's preference for concise, just-in-time content that can be accessed anytime and anywhere [2]. This shift is driven by several factors, including technological advancement, the proliferation of mobile devices, and changing student behaviors and expectations [3].

The integration of microlearning into higher education settings presents both opportunities and challenges. While the format aligns well with digital learning trends and supports self-directed learning, its implementation in academic environments traditionally structured around semester-long curricula and standardized assessments requires careful consideration [4]. Educators and institutions must grapple with how to maintain academic rigor, ensure depth of understanding, and assess learning outcomes effectively within a microlearning framework. Despite these concerns, microlearning's potential to enhance learner engagement, support spaced repetition, and foster lifelong learning is gaining attention among educational researchers and practitioners [5].

One of the unique aspects of microlearning is its alignment with the principles of continuous learning a concept that is becoming increasingly critical in the context of higher education. As knowledge becomes obsolete at a faster rate due to the accelerating pace of technological and scientific innovation, there is a growing demand for educational strategies that promote ongoing skill development and knowledge renewal [6]. Microlearning, with its ability to deliver targeted content in a timely and relevant manner, offers a practical solution to support continuous learning both within and beyond formal education settings [7].

While numerous studies have explored the effectiveness of microlearning in corporate training and professional development, research on its application in higher education remains relatively limited. Most existing studies focus on short-term outcomes such as learner satisfaction and engagement, with fewer investigations into its long-term impact on knowledge retention, academic performance, or the cultivation of self-regulated learning habits [8]. Additionally, there is a lack of consensus regarding the best practices for designing, integrating, and assessing microlearning within higher education curricula. This presents a significant research gap, particularly as universities seek innovative pedagogical approaches to respond to the needs of diverse and increasingly digital-native student populations [9].

This study aims to explore the strategic role of microlearning in higher education, with a specific focus on its potential to foster continuous learning among university students. It will examine how microlearning can be effectively designed and implemented in academic contexts, and what pedagogical considerations must be addressed to ensure it supports

meaningful and sustained learning. By analyzing both qualitative and quantitative data from student and educator experiences, the study seeks to generate insights into how microlearning can enhance the overall educational experience while aligning with institutional learning objectives.

Ultimately, this research hopes to contribute to a more nuanced understanding of microlearning as not merely a trend, but as a viable instructional strategy that complements and enhances traditional educational practices. It is expected that the findings will provide valuable guidance for educators, instructional designers, and policy makers seeking to create more agile, learner-centered academic environments. By addressing the current gaps in the literature and offering practical recommendations for implementation, this article aims to advance the discourse on microlearning and its place in the future of higher education.

METHODS

This research employed a qualitative approach to explore the implementation and impact of microlearning as a strategy for continuous learning in higher education. The study was conducted at two universities in Indonesia one public and one private between September 2024 and January 2025. These institutions were selected purposively to provide a diverse perspective on microlearning practices across different types of educational settings. The research focused on undergraduate programs in education and technology-related faculties, where digital learning tools are more commonly adopted. The study was carried out in three stages: preliminary observation and planning, data collection, and data analysis. The first stage involved reviewing existing learning platforms and course structures that incorporate microlearning elements. This was followed by in-depth interviews, focus group discussions (FGDs), and document analysis conducted over a four-month period.

Data were collected through semi-structured interviews with 10 lecturers and 20 students who had experience with microlearning modules, allowing for rich, detailed accounts of their perceptions, practices, and challenges. Focus group discussions were held separately with lecturers and students to capture group dynamics and collective insights. Additionally, supporting documents such as syllabi, learning modules, and platform usage logs were analyzed to triangulate findings. Data analysis was carried out using thematic analysis, following the six-phase process proposed by Braun and Clarke: familiarization with data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. All data were coded manually, and emergent themes were discussed and validated with participants to enhance credibility and trustworthiness. By grounding the study in the lived experiences of participants and contextual realities of the institutions, this research seeks to offer a deep and nuanced understanding of microlearning's potential to support continuous learning in higher education.

FINDINGS AND DISCUSSION

Findings

The analysis of interviews, focus group discussions, and document reviews revealed several key themes regarding the role of microlearning in fostering continuous learning in higher education. First, participants consistently highlighted the **flexibility and accessibility** of microlearning as its most valuable feature. Students appreciated the ability to access short, focused content through mobile devices and learning management systems (LMS) at their own pace and convenience. This allowed them to engage with the material during spare moments—between classes, during commutes, or at home making learning less dependent on fixed schedules. Lecturers also noted that microlearning was particularly effective in maintaining students' attention and engagement, especially in comparison to traditional lecture formats.

Another prominent theme that emerged was the support microlearning provides for independent and self-regulated learning. Many students described how microlearning modules encouraged them to take greater control of their learning processes. They found it easier to set personal learning goals, monitor their progress, and revisit specific topics as needed. This form of learner autonomy aligned with the broader objective of continuous learning, as it encouraged habits of lifelong learning beyond formal academic settings [10]. Lecturers echoed this sentiment, observing that students became more proactive and reflective when engaging with microlearning content, particularly when such modules were linked to real-world problems or current issues [11].

A third key finding concerned the integration of microlearning into existing curricula. While most participants acknowledged the pedagogical value of microlearning, some lecturers expressed challenges in embedding it meaningfully into course structures that were originally designed for traditional delivery [12]. These challenges included aligning microlearning modules with learning outcomes, designing effective assessments, and ensuring depth of understanding. Despite these concerns, several educators successfully used microlearning as a complementary strategy providing pre-class videos, post-class quizzes, or interactive case studies to reinforce core concepts. This blended approach was seen as an effective way to balance the brevity of microlearning with the comprehensiveness required in higher education [13].

Interestingly, the study also uncovered that the effectiveness of microlearning was influenced by digital literacy and motivation levels. Students who were already familiar with digital tools and had strong intrinsic motivation benefited the most from microlearning modules. In contrast, those who lacked confidence in navigating learning platforms or who preferred more structured guidance sometimes found microlearning overwhelming or insufficient [14]. This highlights the need for scaffolding and support systems to ensure that all students, regardless of their background, can engage effectively with microlearning content.

Another significant finding was the **positive impact of** microlearning on knowledge retention and application. Both students and lecturers noted that the repetition of small learning units and the immediate feedback provided in quizzes or mini-assessments helped reinforce understanding [15]. Some students mentioned that they could recall concepts more easily and apply them in discussions, assignments, or real-world contexts. This suggests that microlearning, when well-designed, does not merely simplify content but can actually deepen learning by encouraging frequent interaction and reflection.

Lastly, the study revealed a desire for institutional support and recognition of microlearning as a formal component of teaching and learning strategies. Lecturers expressed the need for professional development programs focused on microlearning design, as well as institutional policies that provide time, tools, and incentives for creating high-quality microlearning content [16]. Students, on the other hand, hoped for more courses that adopted microlearning elements and appreciated lecturers who experimented with innovative delivery formats.

In sum, the findings indicate that microlearning holds significant promise as a strategy to enhance continuous learning in higher education. Its strengths lie in flexibility, learner empowerment, and the promotion of habitual learning practices. However, to maximize its potential, universities must address challenges related to curriculum integration, digital equity, and institutional support.

Table 1. Comparison of Lecturer and Student Perceptions of Microlearning

No	Aspect	Lecturer Perspective	Student Perspective
1	Flexibility & Accessibility	Useful for supplementary content; flexible for teaching.	Highly valued for on-demand learning and mobile access.
2	Engagement	Increases student interest but requires good design.	More engaging than traditional lectures.
3	Learning Autonomy	Encourages independent learning if well-integrated.	Promotes self-paced, goal-driven study habits.
4	Challenges	Time-consuming to design; hard to align with curriculum.	Sometimes lacks depth; not suitable for all topics.
5	Institutional Support	Needs policy support, tools, and recognition.	Wants more courses with microlearning options.
6	Learning Outcomes	Effective for reinforcement and review.	Improves understanding and retention of key concepts.

Table 1 highlights the similarities and differences in how lecturers and students perceive microlearning in a higher education context. Both groups agree on its strengths in promoting flexibility and engagement. However, while students emphasize its convenience and motivational aspects, lecturers are more concerned with integration and institutional support. This comparison underscores the importance of designing microlearning not only from a pedagogical standpoint but also with systemic and infrastructural considerations in mind.

Discussion

The findings of this study reaffirm and extend existing research on the potential of microlearning in higher education, particularly as a mechanism for promoting continuous

learning. The reported flexibility and accessibility of microlearning align with earlier studies such as [17], who emphasized microlearning's ability to adapt to learners' daily routines and digital behaviors. The participants in this study especially students highlighted the convenience of learning in small segments and appreciated the autonomy it afforded. This supports Knowles' (1975) theory of *andragogy*, where adult learners are seen as self-directed individuals who benefit from learning experiences that are problem-centered, relevant, and immediately applicable.

Moreover, the role of microlearning in supporting self-regulated learning and learner autonomy can be understood through the lens of *constructivist learning theory*. Vygotsky's social constructivism and Zimmerman's model of self-regulated learning (SRL) both emphasize the importance of active engagement, goal setting, and self-monitoring in the learning process [18]. In this study, students who engaged with microlearning content were found to develop these skills more naturally, often revisiting material, tracking their progress, and applying knowledge in real-life or academic contexts. This echoes findings by Ifenthaler & Yau (2020), who noted that microlearning can enhance metacognitive awareness when it includes interactive elements and learner feedback [18].

The integration challenges voiced by lecturers such as aligning microlearning with existing curricular goals and ensuring academic depth mirror concerns raised in prior studies (e.g., Bruck, Motiwalla & Foerster, 2012). These issues highlight a tension between the concise nature of microlearning and the comprehensive scope typically required in higher education. While the study found examples of effective integration through blended learning strategies, it also underscores the need for institutional support and instructional design expertise to bridge this gap. From a theoretical standpoint, this tension reflects [19] theory of *constructive alignment*, which stresses the importance of aligning teaching activities and assessment tasks with intended learning outcomes. Without this alignment, microlearning risks being perceived as supplementary rather than central to academic success.

Furthermore, the finding that students with higher digital literacy and motivation benefited more from microlearning aligns with the *Technology Acceptance Model (TAM)* developed by [20]. This model posits that perceived usefulness and ease of use significantly influence the acceptance and effectiveness of technology-based learning. In the context of this study, those students who found microlearning easy to use and relevant to their learning were more engaged and successful. However, students with limited digital skills or low intrinsic motivation experienced difficulties, suggesting that digital inequality and learner readiness remain significant barriers an issue similarly noted by Selwyn (2016) in critiques of educational technology integration.

The positive impact of microlearning on knowledge retention and application supports previous findings by researchers like [21], who found that microlearning modules, especially when designed with multimedia and interactive elements, promote deeper cognitive processing and long-term retention. This effect is also supported by *Cognitive Load Theory* (Sweller, 1988), which posits that breaking information into manageable segments reduces

cognitive overload and enhances comprehension [22]. The structure of microlearning—short, focused, and often multimedia-rich naturally aligns with this principle, making it an effective instructional strategy in content-heavy disciplines [23].

Lastly, the study's finding about the need for institutional support echoes calls in the literature for more structured frameworks and policies to support the adoption of microlearning in academia. Researchers like [24] argue that the success of digital learning innovations hinges not just on individual educator initiative, but on systemic changes including faculty training, resource allocation, and the integration of digital pedagogy into broader teaching and learning strategies [25]. The desire expressed by lecturers in this study for professional development and recognition underscores this systemic dimension.

In summary, the findings of this research resonate with and extend previous studies by demonstrating the pedagogical value of microlearning in supporting continuous and self-directed learning. However, they also reinforce the importance of institutional readiness, instructional design, and learner support. By situating these results within established educational theories and past empirical research, the study provides a comprehensive understanding of both the potential and the limitations of microlearning as a transformative force in higher education.

CONCLUSION

This study set out to explore whether microlearning could serve as an effective strategy for fostering continuous learning in higher education—a response to the researcher's concern about how traditional learning methods often fall short in meeting the evolving needs of today's learners. The findings confirm that microlearning holds considerable promise in supporting flexible, self-directed, and engaging learning experiences. Its alignment with digital habits and its capacity to enhance learner autonomy and knowledge retention make it a valuable complement to conventional teaching practices. However, the research also revealed that without careful integration into curriculum design and adequate institutional support, microlearning risks being seen as an isolated or supplementary tool rather than a core pedagogical strategy. These insights address the researcher's initial unease about the superficial adoption of digital trends without critical consideration of their long-term impact on academic rigor and learning outcomes.

Nevertheless, the study is not without its limitations. The research was confined to two institutions, with a relatively small sample size, which may limit the generalizability of the findings. Moreover, the focus on participants already exposed to microlearning may have introduced a degree of selection bias. Future research could expand the sample to include more diverse academic disciplines and institutional types, as well as explore longitudinal effects of microlearning on student performance and motivation over time. Additionally, it would be beneficial to investigate how microlearning can be effectively integrated with other pedagogical models, such as project-based learning or flipped classrooms, to maximize its educational value. By continuing to examine microlearning through broader and more

innovative lenses, future studies can further clarify its role in shaping the future of higher education.

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