

# Chapter 7

## Pedagogical Practices of Microlearning Educational Experience: A Design-Based Research

**Nurul Fitriah Alias**

*Universiti Teknologi MARA, Malaysia*

### **ABSTRACT**

*This chapter explores the development of microlearning pedagogical practices aimed at enhancing student learning in higher education through a design-based research (DBR) approach. Recognizing microlearning's potential for quick, focused learning, the study addresses the lack of strong pedagogical foundations and practical implementation challenges. The research progresses through four phases: analyzing current teaching practices, designing key principles, developing pedagogical strategies, and evaluating their usability via expert feedback. Using surveys and applied cognitive task analysis (ACTA), the study introduces the AMPLIFY framework, which enhances microlearning with eight components: clear objectives, personalized learning, continuous feedback, efficient delivery, engaging content, interactive experiences, social collaboration, and seamless curriculum integration. This research offers practical insights and a systematic approach for implementing microlearning strategies in higher education, bridging the literature gap and setting the stage for future studies.*

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## 1. INTRODUCTION

The rapid development of information and communication technologies (ICT) has greatly enhanced the creation, access, dissemination, and sharing of knowledge and skills. While traditional education has focused heavily on the efficient transfer of knowledge, the digital age demands a shift in how learners independently generate knowledge and develop essential skills as 21st-century learners (Collins & Haverson, 2018). This evolving educational landscape emphasizes the need to create learning environments that foster lifelong learning opportunities. This shift highlights the growing importance of informal learning settings, where learning is self-directed rather than reliant on conventional structured methods. With the rise of smart devices and advancements in web technology, the way people learn and interact has fundamentally changed (Haleem, 2022). Technology now plays a pivotal role in modern education, offering educators the chance to incorporate diverse teaching and learning approaches. Specifically, the Internet and World Wide Web enable a learning model where students take centre stage, and educators act as facilitators rather than knowledge transmitters. A notable recent trend is the growth of microlearning, which involves short, focused learning activities delivered through images, audio, and videos (Sankaranarayanan et al., 2023).

As the world increasingly shifts toward a global paradigm, educators must remain adaptable, innovative, and forward-thinking to meet the evolving educational needs of their students (Sharif & Cho, 2015). A significant trend in this changing landscape is the rise of microlearning (Zhao et al., 2023), which involves delivering small, focused learning activities based on the chunking strategy. Microlearning has been explored for decades as a valuable tool in education (Gabrielli et al., 2006; Hug, 2005; Major & Calandrino, 2018, cited in Moore, 2020). Major and Calandrino (2018) describe microlearning in education as combining specific learning objectives with small, targeted learning units designed for practical application by learners. Bleich (2018) and Callisen (2019) similarly define it as concise learning content delivered through flexible technologies. Aitchanov et al. (2012) and Giurgiu (2017) emphasize the use of microlearning to break down complex information into more manageable parts for learners. While perspectives on microlearning's purpose vary, researchers agree on its key elements: focusing on a single topic broken into smaller parts, aiming for personal development, providing learning on-demand, and delivering content through web or mobile platforms in real time (Hug, 2005; Park & Kim, 2018; Trowbridge et al., 2017; Moore, 2020).

Microlearning refers to a learning strategy characterized by brief, focused learning materials and activities that, when combined, form a mini course. Often called bite-sized learning, it breaks content into small, well-organized units or activities that learners can access anytime, anywhere, and in their preferred media format

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