A literature review on

The Impact of Microlearning on Instructional Design

By

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Foundations of learning design and technology: An introduction to the field

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Abstract

Due to absence of widely accepted definition of microlearning, it is often referred to in terms of elements of time, amount of content and medium of delivery (Taylor & Hung, 2022). Although Microlearning has its own set of challenges, it indicates overall positive gains in learning outcomes mainly because it is anchored in Cognitive Load Theory. Latest trends in instructional design content and delivery methods such as demonstration videos, gamification and Question & Answers format, are being shaped by growing popularity of microlearning (Taylor & Hung, 2022). Framework for trends in instructional design for adapting to microlearning environments is based on understanding learner differences, understanding guiding principles of microlearning and assessment of learning outcomes (Monib, Qazi & Apong, 2025).

In the TED Talk, "The 100,000 Student Classroom" (2012), Dr. Peter Norwig talks about his experiences and outcomes of delivering learning content in 2-to-6-minute videos followed by breaks for quizzes, which sounds like 'microlearning'. Following this informal description of microlearning presented by Dr. Norwig, this review was conducted to gain further knowledge of microlearning and its impact on instructional design. In this small-scale literature review, we will look at the definition of microlearning, impact of microlearning on learning outcomes and how microlearning is influencing trends in instructional design.

Beyond review of existing research regarding microlearning and its impact on trends in instructional design, the purpose of this review is to establish the following thesis: In the era of technological innovations and scarcity of time, the rise of microlearning is inevitable, thereby its influence on instructional design is unavoidable. The landscape of microlearning differs significantly from traditional e-learning courses with full semester worth of learning content and activities. However, at its core, the grounding principles of instructional design such as learner-centric and objective driven approach and systematic delivery of content remain steady for navigating the new tides of microlearning.

I. What is Microlearning:

According to Taylor & Hung (2022), a widely popular definition of microlearning is not yet available because microlearning is still in its early stage. Due to lack of a precisely coined definition, researchers, instructional designers and educators, interpret microlearning using, "dimensions like time, content, curriculum, form, process, modality, and learning type" (Hug, 2005). In general, microlearning is interpreted as, "small, digestible chunks of information focused on a single learning objective that is need-based, action-oriented, and compatible with smart e-learning tools" (Monib et al., 2025). With regards to instructional design, microlearning

stems from the cognitive load learning theory and it is described using terms such as "bite-sized, multisensory, interactive, personalized, and self-contained" (Monib et al., 2025).

II.   Effects of Microlearning on Learning Outcomes:

Literature review conducted by Taylor & Hung (2022) indicates that learning outcomes for microlearning were overall higher as measured in knowledge acquisition, skill acquisition, confidence, utilization, and engagement. Thereby, acceptance of microlearning was also noted in the same study. This acceptance was attributed to microlearning promoting intrinsic and extrinsic motivation and was perceived by learners as, "easy to use, relevant, realistic, and favorable" (Taylor & Hung, 2022).

III.   Emerging trends in Instruction:

In contrast to full scale courses and learning modules, microlearning warrants delivery of instruction in innovative and creative ways to ensure content is segmented into smaller chunks of information and to keep learning engaging. According to Taylor & Hung (2022) following trends instruction are gaining traction in the world of microlearning:

1. **Demonstration:** Demonstration videos for listing steps of a process during simulations of relevant situations.

2. **Gamification:** "strategic application of game design principles, mechanics, and elements into non-game environments." (Christopoulos & Mystakidis, 2023).

3. **Questions and Answers:** Instruction is delivered in the form of simple Q & A format or learners are required to respond to questions.

IV.   Microlearning and Instructional Design

The evolution of microlearning is undoubtedly having a palpable impact on trends in instructional design. Although limited and scattered, the data regarding learning outcomes using microlearning platforms suggests overall positive impact on learning. This is mostly because microlearning is anchored in the principle of Cognitive Load Theory which highlights the importance of chunking broad content into smaller segments for improved grasping and retention.

However, much of the emerging trends in instructional design for microlearning stem from the need to combat inherent shortcomings of microlearning such as, **Depth vs. brevity:** Short units may hinder deeper learning (Taylor & Hung, 2022) or **Maintaining coherence:** Learners may struggle to see connections between units (Boumalek et al., 2025).

Upon reviewing forty relevant articles related to microlearning, Monib et al., 2025 presented a framework for generating effective microlearning modules highlighting three principal elements:

    i.   Consider individual, situational, and subject differences.

    ii.   Utilize guiding principles of microlearning which warrant that content should be: 1. Objective driven, 2. Delivered in bite-sized portions, 3. Of carefully crafted duration and frequency, 4. Interactive, 5. Personalized and 6. Delivered via appropriate medium or mode.

    iii.   Learning Outcomes: Design frequent quizzes and interactive assessments.

In summary, further research is needed to define the parameters of microlearning as it is still in its preliminary stages of development. Microlearning demands delivery of content in small bite-sized segments in contrast to complete chapter presentations presenting new challenges in for instructional designers.

This literature review thus rests the case emphasizing that foundational principles in instructional design such as learner centric approach, objective driven approach and assessment of progress, continue to guide the new framework for adapting to microlearning.

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