

Micro-Learning Concepts and Principles

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Abstract

Education is affected by technical and scientific developments. Progress in one of these areas leads give way to new educational methods and strategies. One of these advanced learning modes is what has been conventionally termed as Micro-learning (ML). It has emerged in educational technology as a result of advances in information technology as well as advances in research in memory, brain, and social-cognitive processes. In this paper, the researcher discusses micro-learning in terms of its concepts, tools, and associated concepts, advantages and disadvantages.

Keywords: *Micro-learning, educational technology*

Introduction

Due to the novelty of Micro-learning (ML), it has no specific concept. Nevertheless, several researchers have proposed different definitions addressing one or more aspects of micro-learning based on their research interests. For instance, [1] defines micro-learning as “a form of learning that involves aspects of teaching and learning directed towards short units of educational content.” [2] also defines it as training provided in small units that put individuals in control of what they learn. Similarly, [3] refers to it as the process in which learning takes place through well-planned, digestible and assimilated small units.

The previous definitions focus on the basic idea of ML- fragmentation of content into small units. However, it is worth mentioning that micro-learning is one of e-learning forms. What distinguishes it is that it redefines learning in terms of time, effort, and method.

The literature reveals several features of micro-learning that distinguish it from other learning-

related concepts [4,5]. These features are outlined below:

- ML is linked to e-learning, not the traditional learning.
- Generally, ML requires short time for learning.
- ML does not require much effort from the learner.
- It is limited to precisely defined topics.
- Each of its small units focuses on a specific educational objective.
- Each unit constitutes a separate topic.
- All the ML units can be integrated to form a complete learning process.
- The process of ML planning and design is quite complex.

The researcher defines micro-learning as one of the forms of e-learning in which self-contained small-sized content is prepared around a specific learning objective. Learners can immediately address such an objective and apply knowledge.

Micro-Leaning Tools

[6] refers to a set of tools used for providing ML content. These tools include slideshows, videos, infographics, podcasts, photos, checklists, e-books, publications, social media (mainly Twitter and Facebook), wiki pages, external links to open educational resources, as well as simulations, branching scenarios and educational games.

ML-Related Concepts

[4] surmises that micro-learning is closely related to the following concepts:

Partial Content

Partial content covers a single idea or concept. It is accessible via a single URL. Mobile devices, email messages, and web browsers are suitable for viewing it. Thus, the partial content can be integrated easily into micro-learning.

Electronic Social Programs

Social programs help support social interaction through their main feature. Such programs help individuals with different interests and prior knowledge to get together across social networks based on cooperation and shared interests. A social program can support ML. It allows short content to be delivered quickly on the one hand. On the other hand, it supports social interactions based on this content and interests.

Web 2.0

Web 2.0 supports teaching and learning which are based on collaboration with students who take responsibility for learning. Web 2.0 platforms are used for professional development and enhancing learning in the classroom.

Personal learning environments

Personal learning environments connect formal and informal learning and lifelong learning opportunities in a learner-centered context. It enables learners to choose and get exactly what they need in their own time. Micro-learning is based on several personal learning applications such as Blogs, Wikis, YouTube, Facebook, and podcasts.

Effective Principles

ML takes its effectiveness from a number of principles of design and implementation. [7] translated a set of such principles:

1. Short duration

There is nothing that can be called absolute length. Nevertheless, ML is short-term learning. Some lessons take only a few seconds long.

2. Micro-Units

ML is based on micro-modules that support the learning task and reduces complexity. They are self-explanatory, self-contained, and independent yet still serve as part of a larger unit.

3. Story-telling

As the content in ML gets smaller and smaller, learning contexts become more important. Using a story is an appropriate way to do this. It does not need to be long and can be told using a single image or a few words.

4. Repetition

Micro-learning allows focusing on the most challenging parts of the learning content at first, and then individual less important items that can be quickly covered through repetition.

5. Comprehensiveness

Dividing content into small pieces aims to provide an integrative presentation of the topic to deepen a unified understanding in diversified and meaningful ways. The overall content is well suited for teaching digital and other skills because there is more than one way to get results.

6. Rapid creation:

Training platforms regenerate quickly. Any education needs to be built quickly to ensure effectiveness. It is easy to create particular educational materials through LMS or CMS.

ML Features

Micro-learning provides many services to assist learning. It creates a non-traditional environment suitable for rapid development of technology and science. [7] mentioned the following advantages of ML:

1. It engages learners in the learning process.
2. It enables students to retain information.
3. It helps students to perform and apply.

Drawbacks

[5] outlined the following disadvantages associated with ML:

- It may be useless when individuals need to acquire or learn complex skills, processes or behaviors.
- It becomes disadvantageous when individuals need relevant practice and feedback on their performance.
- Reading something or even following the steps mentioned in ML is not the same as 'learning'. In

other words, ML does not support the overall picture of big topics.

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