



Exploring the Potentials of Microlearning in English Language Teaching in Higher Education

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ABSTRACT

Recent trends in language education have demonstrated the dynamic use of technology in accommodating the needs of today's learners. In relevance to the characteristics of digital natives, there is an urgency to transform teaching and learning practice. One promising approach to this matter is microlearning. Hence, this article aims to conduct a scoping review on the potential of microlearning in English language teaching. By examining twenty published research articles, this study sets two foci: how microlearning is used in digital platforms and how microlearning is addressed in ELT for higher education. This study reveals that microlearning approach is worth exploring to be applied in language pedagogical practices and to accommodate the 21st century English language learners in a post-pandemic context.

INTRODUCTION

Studies on microlearning have continued to develop as an emerging trend in the field of education. To start with, the definitions and concepts of microlearning proposed by several scholars are presented. Microlearning can be traced back to the works of Theo Hug, a professor of educational sciences, in the year of 2005 (Oesch, 2017). Hug (2005) provides theoretical and practical frameworks of microlearning and its functions to challenge the changing learning cultures as well as to promote lifelong learning. Leong stated that microlearning is a relatively new and emerging global topic (2020) that has the potential to be explored more, particularly in the field of education.

By definition, microlearning can be defined as small units of learning paired with a learning objective and designed as a step to achieve a bigger goal (Polasek & Javorcik, 2019). Microlearning is also identical to its characteristics of being bite-sized and easily accessible by learners. This concept provides a series of short learning content with a timeframe of 5-7 minutes, as well as short activities tailored to the course.

Furthermore, studies have also suggested that microlearning has a distinct advantage as an instructional design. Scholars suggest applying and improving the microlearning approach in future work because it has been developed in recent years. Microlearning is defined as a learning process through bite-sized learning content with short-term learning activities. It also refers to an action-oriented approach that offers bite-sized learning to facilitate learners to learn, act, and practice. The approach starts with the identification of learning objectives, then proceeds to break them down into micro levels to achieve a specific outcome. Subsequently, studies have illustrated the benefits of implementing a micro-learning approach in today's teaching and learning. They further suggested that the potential of this approach be explored further by promoting, designing, and using microlearning to facilitate learners' personal development.

Microlearning and how it can be implemented as a teaching method have become one of prominent trends. For instance, Hosseini et al. (2020) implemented microlearning as a new method of content delivery for Iranian EFL learners, and it was revealed that the learners became more engaged in the learning process. Microlearning's major purpose is to produce an effective method of active learning through smaller learning sessions. Major and Calandrino (2018) see microlearning as a teaching model that can be practiced by teachers in the classroom by delivering short segments to students. Skalka and Drlik (2020) also explored the concept of microlearning to design an educational model to be applied in the university; the model addresses the learners' interests, learning, and communication habits, and aims to develop motivation and maintain their interests.

In addition, microlearning is also described as learning objects. This relates to its technological or digital format-supported applications; thus, learning objects refer to chunks of digital instructional content that are both accessible and reusable (Hug & Friesen, 2007). This is closely related to another concept identified in the network map, i.e., microlearning content. According to

Dolaskinski (2020), if there are numerous learning aims or topics, each one should be developed into separate microlearning content, designed and delivered through various media.

Javorcik (2019) summarized the comparisons between micro-level and macro-level learning. In terms of educational content, micro-level learning covers educational objects in the form of micro content, which is smaller and shorter. Meanwhile, macro-level learning deals with topics and subjects that have a wider and more general scope. In terms of language instructions, micro-level uses the combination of words, phrases, and sentences, while macro-level includes socio-cultural aspects and complex semantics within its instructions. This illustrates how microlearning specifies the content and learning objectives as its form is short and small. As Corbeil (2021) suggests, microlearning is a single goal-focused, outcome-based, and meaningful learning unit presented in bite-sized content.

Meanwhile, Vries et al. (2018) argue that microlearning serves as a format of learning content that is customizable and can cover a wide range of topics. They further highlight the learners' self-directedness, ownership of the learning demand, and prior knowledge and experiences that need to be considered and incorporated to design successful microlearning content. Similarly, Wang (2021) also suggests that microlearning can be a promising direction to offer an enhanced teaching and learning experience post-pandemic. Moreover, in terms of the education level covered in the database, higher education dominates the list, followed by postsecondary education. This is also in line with how microlearning is suitable for adult learners as they are more aware of their learning process. Therefore, in an attempt to fill in this gap and contribute to the literature, this research aims to conduct a scoping review to investigate the potential of microlearning and its digitalization, particularly in the context of higher education and English language teaching and learning.

METHODS

To explore the potential of the microlearning approach in digital English learning, this article attempted to map existing academic publications on microlearning by conducting scoping review and visualization using VosViewer, a software tool to visualize bibliometric data. To obtain the data, this research utilized two ways of collecting academic databases within the last five years (2018 to 2022), i.e., by accessing ERIC through its webpage, and SCOPUS through *Publish or Perish*, a software program to retrieve academic databases. Table 1 demonstrates the key search terms to identify relevant studies to be included in this research. Table 2 shows the study selection process consisting of inclusion and exclusion criteria of the studies.

Table 1. Key Search Terms

Key search terms
"microlearning" OR "micro learning" OR "micro-learning"
"higher education" OR "adult learners" OR "tertiary education"
"English language teaching" OR "English language education"
AND OR "English language learning"

Table 2. Criteria of Research Article Selection

Criterion	Included	Excluded
Database	ERIC, SCOPUS	Other databases
Time frame	2018-2022	before January 1, 2018
Publication type	Journal articles	Books, reports, thesis
Languages	English	Other languages other than microlearning in
Focus	Microlearning in ELT	ELT
Population	higher education	other levels of education

A total of 98 papers were obtained from the database search engines (ERIC, n=46; SCOPUS, n=52) and then filtered based on the more specified keywords as can be seen in Table 1. Moreover, the obtained papers were examined by looking at the abstracts to see the relevance. After the screening process, 20 findings from the extracted articles were examined individually. Of the 20 articles selected, 3 were published in 2018, 5 were published in 2019, 3 were published in 2020, 8 were published in 2021, and one was published in 2022. Subsequently, after capturing the big picture of microlearning in education, the research articles were filtered and selected based on their relevance to the focus of this present research. This research has two sets of focus: the first is 14 articles which include the following keywords: *microlearning*, *higher education*, and *digitization* to see how microlearning is used in digital platforms or online learning context, while the second focus is 6 articles covering the keywords of *microlearning*, *higher education*, and *English language education*; to capture how microlearning is addressed in English language education and the way it is designed in digital forms.

RESULTS

In the context of 21st-century learning, the concept of microlearning is closely related to the use of technology and digital media. Hug proposed practical frameworks for microlearning based on digital learning theories, teaching and learning models, and approaches to microcontent learning (2006). Although it was mentioned more than a decade ago, the concept of the digital age in relation to microlearning has not been widely explored. As we can see in figure 1, the density visualization indicates that research exploration on microlearning in digital learning context has not been intensified.



Figure 1. Density visualization of research on microlearning

The clusters of *digital* identified in the VosViewer network map of microlearning research include: digital skills, digital competence, digital content, digital literacy, digital learning, digital technology, digital transformation, and digital media. Therefore, this research intends to explore more on the concept of microlearning within the context of the digital age.

According to Javorcik (2019), because of the vast development of digital technology in society, micro-learning can help educators produce attractive learning materials for students. This is important in maintaining the learners' interests during the learning process as well as increasing their engagement. Olivier proposed practical recommendations to raise student engagement by creating microlearning objects based on self-directed multimodal learning (2021). Multimodal means making use of various means to deliver the content. Hence, as one of the 21st-century learners' characteristics, technology savvy, we need to accommodate this by providing digital content in more than one medium. Karen (2018) pointed out that the implication of microlearning in the context of foreign language learning is through interactive learning platforms, language learning applications, educational software, and social networks so that learners can learn anywhere and transform their language learning into their practical life. Meanwhile, Nilsson (2021) stated that microlearning platforms can be anything from watching a short video to sending and reading an e-mail. Major and Calandrino (2018) argue that the selection of microlearning tools depends on the learning objectives and intentions of the microlearning delivery. The choices are unlimited and will keep growing as the advancement of technology continues. Therefore, this research lists some of the microlearning platforms used by previous research.

Table 3. Microlearning Digital Platforms

Animation or motion graphics	Nugraha et al.; Olivier, 2021
Mobile applications	Ghasia, 2021
Games and Quizes	Nilsson; Nugraha et al., 2021
Infographics	Almazova, 2018; Nugraha et al., 2021
Learning management system (LMS)	Jahnke, 2019; Nilsson, 2021
Lecture recordings	McKee, 2022
Open educational resources: YouTube	Major & C, 2018; Jahnke, 2019
Powerpoint slides or visual presentations	Major & C, 2018; Nugraha et al., 2021

Short videos and Podcast	Nilsson; Nugraha et al.; Olivier, 2021
Social Media: Twitter, Instagram	Jahnke, 2019
Web-based sources	Ghasia, 2021

In addition to the list of digital platforms, the microlearning approach should also ensure that learners are in focus and participate actively in the learning process (Nilsson, 2021). Therefore, by referring to the literature, we will look at possible learning activities that can be proposed in the context of microlearning. To start with, Corbeil (2021) suggests that microlearning gives opportunities for learners to be not only users of content but also creators. This is possible due to the use of technologies on mobile devices that are suitable for digital native generations. Learners are also able to create a meaningful connection between the learning content and their personal lives by using mobile devices (Lee, 2021). The activities can be uploading photos or short videos that they make and followed by feedback from the teacher or other class members.

Learners may also collaborate to create a project, such as making infographics based on the topic covered in the learning session. Meanwhile, Major and Calandrino (2018) mentioned the utilization of social media as a learning platform that allows learners to give feedback to each other by leaving comments. Furthermore, they believed that by incorporating resources based on their own experiences, learners can create meaning in their learning process. Lastly, they suggest that the learning activities in microlearning can be made repetitive, reflective, and constructivist. These are some strategies that can be applied in designing microlearning-based learning materials. They can be adjusted, and modified following the characteristics of the target learner.

Discussions

Microlearning is most dominantly used in higher education contexts. Leong reviewed trends in microlearning and revealed that language learning, i.e., second language and vocabulary learning, had been mentioned more frequently in the titles and abstracts than in other fields (2020). This signifies the importance of conducting research on microlearning in this particular field to add to its development. Some scholars have pointed out the benefits of implementing microlearning for learners in a higher education context. The highlight is the learners' cognitive overload, which can be reduced by microlearning (Drakidou, 2018; Major and Calandrino, 2018; Nilsson, 2021) through its bite-sized learning content. Hence, learners can focus on one specific piece of information at a time, so that they will not feel overwhelmed, and this may lead to continuous and lifelong learning in the long run.

DISCUSSIONS

Six research publications that explicitly cover the concept of microlearning in English language education in higher education are going to be discussed. The learning contexts include teaching English for specific purposes, teaching English reading, teaching English as a foreign language, and teaching college English (Almazova, 2018; Miloserdova, 2019; Tolstikh et al., 2021; Wang, 2019; Wenhui, 2020; Zhou, 2021). Almazova (2018) attempted to

implement microlearning as an approach and tool to tackle the issues faced in teaching a foreign language in a non-linguistic institution. Some of the issues were the limited class hours, the diverse students' language levels and communicative competence, and their lack of motivation because English is not their discipline. The research suggests a more active use of infographics as a tool in delivering microlearning to help students explore the materials. Miloserdova (2019) raised the question of how microlearning can be a means to acquire language skills through class activities. The results show that by using modern technologies and online resources, they can support the teaching methods to facilitate the learners' development in learning English and its culture.

Meanwhile, Tolstikh (2021) also mentioned the use of technology-based microlearning in teaching languages. Microlearning was used as a teaching method for information delivery and principles. They highlight the impact of microlearning on students' outcomes and reveal that the student's language competence is gradually improving. This illustrates one of the benefits of microlearning in language education. Wang (2019) aimed to make innovations in teaching college English based on mobile microlearning. He revealed that the mobile microlearning-based teaching method was effective in improving the efficiency of the teaching and learning process by making full use of the fragmented time of microlearning. This was also because the method was able to develop a learner-centered and personalized teaching mode. Hence, Wang (2019) summarized the features of designing college English teaching activities based on mobile microlearning: they have to be learner-centered, maximize the role of the mobile platform, create question-answer situations, and emphasize the combination of individual and cooperative learning. These steps can be adopted and applied with relevant modifications to design a successful microlearning program. Moreover, Wenhui (2020) designed a blended teaching mode based on online microlearning for military English. To design an online microlearning platform, he determined three stages of the learning process, consisting of pre-class learning, in-class learning, and after-class learning. He highlighted that microlearning enables learners to track the whole progress of their learning.

Zhou (2021) has carried out research analyzing the teaching principles of English reading on the microlearning platform. He concludes that teachers should maximize the usefulness of microlearning, i.e., its high efficiency and interest-led guidance. It is believed that interest plays an important role in raising learners' motivation; thus, teachers must plan the teaching and learning process in accordance with the target learners' interests. In teaching English reading, the objective is to transform language input into language output. While acquiring English knowledge, learners are expected to comprehend the content and creatively demonstrate their language competence. Zhou further suggests that microlearning platforms result in the learning characteristics of flexibility and interactivity. Flexibility implies that it is not limited to the traditional classroom to meet learning needs through the use of digital devices.

This is consistent with Major and Calandrino's (2018) suggestion that microlearning is available at any convenient time and on any available devices. Meanwhile, interactivity deals with learner-centeredness and the teacher's role as facilitator, so that the use of microlearning can stimulate learners' motivation, autonomy, and language skills. Hence, we can see how the microlearning approach has been applied in English language teaching and learning. This serves as valuable knowledge background in designing microlearning-based English language learning materials for higher education students.

CONCLUSION AND RECOMMENDATIONS

To sum up, after capturing the big picture of microlearning in education, this article points out the use of microlearning in two sets of focus, i.e., to capture how microlearning is addressed in English language education and the way it is designed in digital forms. The results indicate that there is still potential in exploring microlearning approaches to be applied in pedagogical practices, whether as teaching methods, models, tools, or learning materials. Some previous research also pointed out the limitations of their study as inputs for further research. Lee (2021) emphasized future research on how to design meaningful learning objectives for small screens as the content is not supposed to be long and complex. Ghasia underlined the limited literature on the implementation of microlearning in the formal education sector as the existing research is mostly on informal education sectors such as work training and professional development (2021). There is significant room to be filled with further research on micro-learning, specifically through the use of digital devices in this fast-changing world (Leong, 2020; Shatte, 2020). However, it is also important to note that microlearning content may not be suitable to replace other forms of learning entirely; rather, it can be useful as an addition or complementary, particularly in an online learning context. In addition, microlearning can be a promising direction to offer an enhanced teaching and learning experience in a post-pandemic context.

FURTHER RESEARCH

More extensive research in this area would be valuable. More empirical research, particularly in local context of Indonesia, need to be explored in various levels to unveil how microlearning can be applied and implemented in English language teaching and learning due to its relevance and benefits in accommodating today's digital native generations.

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