

SpringerBriefs in Education

Lucas Kohnke

Using Technology to Design ESL/EFL Microlearning Activities

SpringerBriefs in Education

We are delighted to announce SpringerBriefs in Education, an innovative product type that combines elements of both journals and books. Briefs present concise summaries of cutting-edge research and practical applications in education. Featuring compact volumes of 50 to 125 pages, the SpringerBriefs in Education allow authors to present their ideas and readers to absorb them with a minimal time investment. Briefs are published as part of Springer's eBook Collection. In addition, Briefs are available for individual print and electronic purchase.

SpringerBriefs in Education cover a broad range of educational fields such as: Science Education, Higher Education, Educational Psychology, Assessment & Evaluation, Language Education, Mathematics Education, Educational Technology, Medical Education and Educational Policy.

SpringerBriefs typically offer an outlet for:

- An introduction to a (sub)field in education summarizing and giving an overview of theories, issues, core concepts and/or key literature in a particular field
- A timely report of state-of-the art analytical techniques and instruments in the field of educational research
- A presentation of core educational concepts
- An overview of a testing and evaluation method
- A snapshot of a hot or emerging topic or policy change
- An in-depth case study
- A literature review
- A report/review study of a survey
- An elaborated thesis

Both solicited and unsolicited manuscripts are considered for publication in the SpringerBriefs in Education series. Potential authors are warmly invited to complete and submit the Briefs Author Proposal form. All projects will be submitted to editorial review by editorial advisors.

SpringerBriefs are characterized by expedited production schedules with the aim for publication 8 to 12 weeks after acceptance and fast, global electronic dissemination through our online platform SpringerLink. The standard concise author contracts guarantee that:

- an individual ISBN is assigned to each manuscript
- each manuscript is copyrighted in the name of the author
- the author retains the right to post the pre-publication version on his/her website or that of his/her institution

Lucas Kohnke

Using Technology to Design ESL/EFL Microlearning Activities

 Springer

Lucas Kohnke
Department of English Language Education
The Education University of Hong Kong
Hong Kong, China

ISSN 2211-1921

ISSN 2211-193X (electronic)

SpringerBriefs in Education

ISBN 978-981-99-2773-9

ISBN 978-981-99-2774-6 (eBook)

<https://doi.org/10.1007/978-981-99-2774-6>

© The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2023

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Singapore Pte Ltd.

The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore

*To my wife Jannifer and my son Oskar
without whom this book would be
completed one year earlier.*

Preamble

Although there is a growing body of knowledge on technology-enhanced language learning, at the time I decided to write this book, I could not find any published books addressing the design of English as a Second Language (ESL) and English as a Foreign Language (EFL) microlearning activities. I have taught technology courses for pre-and in-service English teachers at the Education University of Hong Kong, focusing on developing microlearning activities ('Integrating ICT in the ESL classroom'; 'Effective use of e-resources in primary/secondary English classrooms'; 'Sustainable development of e-learning in schools') and delivered workshops on this topic around the world. However, I have realized it is difficult to find relevant literature that explains microlearning, the use of technology, and the design of ESL/EFL activities. Moreover, my students have repeatedly asked for such a resource, showing the urgent need for this book.

Due to the COVID-19 pandemic, students have been unable to attend face-to-face classes and have been forced to engage in online learning (Moorhouse & Kohnke, 2021a). In the post-pandemic world, teachers need resources to effectively deal with the 'new normal' of education and integrate technology into their ESL/EFL lessons (Moorhouse & Kohnke, 2021b). Microlearning is critical for teachers who want to maximize their students' learning by using bite-sized chunks of content that can be completed anytime and anywhere (Kohnke & Fong, in-press).

This book is intended to serve as a practical resource for language teachers. Thus, its goals are twofold: (1) to shed light on microlearning as a rapidly emerging phenomenon in ESL/EFL teaching and learning and (2) to provide strategies, tools, and best practices for incorporating microlearning in English lessons, including activities that teachers can modify to their contexts based on their learners' language proficiency, needs, and interests. In doing so, it aims to help teachers create and deliver microlearning activities that are optimized for mobile learning and ESL/EFL students. The book draws on the relevant literature and my first-hand experience developing microlearning activities. It is a useful starting point for language teachers

who are interested in the principles of designing microlearning activities for the ESL/EFL classroom.

Hong Kong, China

Lucas Kohnke

Acknowledgements The success of a project hinges on the dedication, commitment, and generosity of various organizations and individuals. Without their unwavering support and eagerness to foster a collaborative environment, this project would not have been such a rewarding experience. Therefore, I extend my heartfelt appreciation to the following people who made this book possible:

- My colleagues in the Department of English Language Education, The Education University of Hong Kong
- My loving wife and son

References

- Kohnke, L. & Fong, D. (2013). Exploring microlearning for CALL teacher education and professional development: Voices from Hong Kong. In D. Tafazoli & M. Picard (Eds.), *CALL teacher education and professional development: Voices from under-represented context* (pp. 279–292). Cham: Springer. https://doi.org/10.1007/978-981-99-0514-0_17
- Moorhouse, B. L., & Kohnke, L. (2021a). Thriving or surviving emergency remote teaching necessitated by COVID-19: University teachers' perspectives. *The Asia-Pacific Education Researcher*, 30, 279–287. <https://doi.org/10.1007/s40299-021-00567-9>
- Moorhouse, B. L., & Kohnke, L. (2021b). Responses of the english language-teaching community to the COVID-19 pandemic. *RELC J.*, 52(3), 359–378. <https://doi.org/10.1177%2F00336882211053052>

Contents

1	Microlearning as a Teaching and Learning Approach	1
1.1	What is Microlearning?	1
1.2	Definition	2
1.3	Microlearning as a Teaching and Learning Approach	3
1.4	Book Overview	4
	References	4
2	Overview of Technology in Teaching and Learning	7
2.1	Computer-Assisted Language Learning (CALL)	7
2.2	Mobile-Assisted Language Learning (MALL)	9
2.3	Theories	9
2.4	Sociocultural Theory of Learning	10
2.5	Noticing Hypothesis	10
2.6	Self-regulated Learning	11
2.7	Reflection Questions	11
2.8	Conclusion	11
	References	12
3	Practical Strategies to Optimize Mobile Microlearning	15
3.1	Practical Strategies	15
3.2	Learner Needs	16
3.3	Medium	16
3.4	Interactivity	17
3.5	Simplicity	17
3.6	Tools and Applications	18
3.7	Design Principles	19
3.8	Sample Activity	19
3.9	Conclusion	20
	References	20

4 Mobile Microlearning: Enhancing Listening, Speaking, Writing, and Reading Skills	23
4.1 Listening	23
4.1.1 Listening Activity 1	24
4.1.2 Listening Activity 2	25
4.1.3 Listening Activity 3	26
4.2 Speaking	27
4.2.1 Speaking Activity 1	28
4.2.2 Speaking Activity 2	29
4.2.3 Speaking Activity 3	30
4.3 Writing	32
4.3.1 Writing Activity 1	32
4.3.2 Writing Activity 2	33
4.3.3 Writing Activity 3	34
4.4 Reading	35
4.4.1 Reading Activity 1	36
4.4.2 Reading Activity 2	37
4.4.3 Reading Activity 3	38
4.5 Collaborative Spaces	39
4.6 Design Considerations	39
4.7 Conclusion	39
References	40
5 Designing Microlearning Activities with Podcasts, Videos, Infographics, and Flashcards, and Microlearning Activities	43
5.1 Podcasts	43
5.1.1 Podcast Platforms and Interactive Questions	43
5.1.2 Sample Activity 1—Podcast	45
5.1.3 Sample Activity 2—Podcast	46
5.2 Videos	47
5.2.1 Video Platforms and Interactive Questions	48
5.2.2 Sample Activity 1—Videos	49
5.2.3 Sample Activity 2—Videos	50
5.3 Infographics	51
5.3.1 Infographic Platforms and Interactive Questions	52
5.3.2 Sample Activity 1—Infographics	52
5.3.3 Sample Activity 2—Infographics	54
5.4 Flashcards	55
5.4.1 Flashcard Platforms and Interactive Questions	55
5.4.2 Sample Activity 1—Flashcards	57
5.4.3 Sample Activity 2—Flashcards	58
5.5 Reflection Questions	59
5.6 Conclusion	59
References	60

6	Designing Virtual Reality and Augmented Reality Microlearning	
	Activities	61
6.1	Introduction	61
6.2	Virtual Reality Platforms	62
6.2.1	Sample Activity 1—Virtual Reality	62
6.2.2	Sample Activity 2—Virtual Reality	63
6.3	Augmented Reality Platforms	64
6.3.1	Sample Activity 1—Augmented Reality	65
6.3.2	Sample Activity 2—Augmented Reality	66
6.4	Potential Challenges	67
6.5	Reflection Questions	68
6.6	Conclusion	68
	References	68
7	Microlearning with Chatbots	71
7.1	Introduction to Chatbots	71
7.2	A Brief History of Chatbots	72
7.3	Chatbots as Facilitators of Language Learning	73
7.4	Chatbot Platforms	73
7.5	Existing Chatbots	74
7.6	Suggested Activities for English Language Learning	74
7.6.1	Sample Activity 1—Chatbots	76
7.6.2	Sample Activity 2—Chatbots	77
7.7	Reflection Questions	77
7.8	Conclusion	78
	References	78
8	Microlearning in the Education of the Future	81
8.1	Introduction	81
8.2	Limitations	82
8.3	Directions for Future Research and Practice	82
8.4	Concluding Thoughts	83
	References	83

Chapter 1

Microlearning as a Teaching and Learning Approach



Abstract This chapter begins with an introduction to the concept of microlearning, providing a thorough definition and discussing its key characteristics. The role of microlearning as a teaching and learning approach will then be examined, as will its potential benefits and applications in ESL/EFL contexts. We will then present the rationale for writing this book, outlining the primary goals and intended audience. Finally, a synopsis of the book's content will be presented.

Keywords Microlearning · ESL · EFL · Technology · Mobile devices · Mobile learning

1.1 What is Microlearning?

Conventional learning can be dull, difficult, and time-consuming. Learners are no longer interested in watching or listening to a full, traditional lecture. Instead, they are inclined to use mobile applications to learn English (Godwin-Jones, 2011; Kohnke, 2020; Kohnke & Ting, 2021; Kohnke et al., 2021), which has spurred interest in the pedagogical potential of such applications (Goggins et al., 2013). Learners can use them to acquire knowledge precisely when they need it or experience curiosity. It has long been recognized that using technology to provide appropriate and timely content can be a catalyst for language learning (Li, 2017). Recent changes to the educational and technological landscape have prompted educators to provide bite-sized chunks of input—an approach called microlearning.

The role of technology in English as a second language (ESL) and English as a foreign language (EFL) education has changed dramatically since the outbreak of the COVID-19 pandemic in early 2020 (Moorhouse & Kohnke, 2021). Conventional learning is no longer preferred by students and teachers. Classes are now taught in various modalities, including in-person, online, and hybrid. Therefore, ESL/EFL teachers must consider new approaches to their lessons. While the situation continues to evolve and take different forms, microlearning has nevertheless become a significant topic in the field of language education.

Microlearning has been around for decades (Hug et al., 2005) but experienced a resurgence when face-to-face classes were suspended and students had to learn from home during the pandemic (Kohnke et al., in-press). This situation forced ESL/EFL teachers to create trimodal (in-person, synchronous online, asynchronous online) learning environments and ensure that they remained student-centred (Adedoyin & Soykan, 2020; Kohnke & Moorhouse, 2022). This phenomenon continues to drive curriculum design and pedagogy in the post-COVID-19 learning environment.

Microlearning comprises a blend of various delivery methods leveraging the most effective components of each. As such, it puts the learner at the centre of the educational experience, embraces multi-sensory/multi-modal design, and uses technological tools to increase student engagement and achievement (Dolasinski & Reynolds, 2019). Because it integrates a multisensory/multimodal design, microlearning is more likely to resonate with individual students, impact teaching and learning positively, and increase students' knowledge retention and satisfaction.

1.2 Definition

Despite the widespread interest in the topic, the term microlearning has not been adequately defined to date. Maddox (2018) defined it as 'an approach to learning that conveys information about a single, specific idea in a compact and focused manner' (p. 1), but did not specify what constitutes 'compact and focused'. Accordingly, there is agreement that microlearning activities should be short, but not *how* short—nor how they can best be delivered. For example, Hug et al. (2005) proposed that a microlearning activity can last 'less than a second up to more than one hour' (p. 3). On the other hand, Torgerson (2016) argued that microlearning content must be consumed within 5 min. Shank (2018) stated that 'microlearning must be primarily about learning, not content' (para. 11) and 'not mostly about technology' (para. 12), whereas Hug et al. (2005) suggested it could be delivered either face-to-face or using technology.

The changes in the learning environment due to the COVID-19 pandemic made mobile microlearning an effective, accessible, personalized learning format that engaged learners who could not access physical classrooms. Today, learners are used to bite-sized chunks that are less overwhelming than traditional methods, personalized learning experiences that allow them to work at their own pace and revisit topics as needed, and interactive elements such as videos, quizzes, and podcasts.

This book defines a microlearning activity as a 2–8 min activity that effectively provides focused, personalized content using technology. It should be 'snackable'—a concise 'nugget' optimized for mobile learning (Jahnke et al., 2020). Moreover, it considers how microlearning addresses the needs of various ESL/EFL learners, including early childhood, primary, secondary, tertiary, and adult learners.

1.3 Microlearning as a Teaching and Learning Approach

Various studies indicate that microlearning is a promising approach to teaching and learning across disciplines (e.g. language, engineering, nursing; Fang, 2018; Hui, 2014; Zheng et al., 2019). This is because it encourages the use of different delivery methods to help learners focus on the key information and mitigate the impact of diminishing attention spans. However, adopting microlearning requires language teachers to rethink traditional methods of delivering course content. It embraces learning formats such as PDFs, podcasts, infographics, videos, augmented reality, and chatbots, which prioritize essential messages or bursts of information (Kohnke, 2021). Each ‘chunk’ focuses on a single idea (e.g. a specific grammar point) to reduce the risk of cognitive overload (Epp and Phirangee, 2019; Nikou, 2019) and promote better retention (Jomah et al., 2016).

For example, a teacher could deliver a short video lecture and then ask students to complete a follow-up activity based on the video. Previous studies have found that short videos can be effective methods of delivering content both in and outside of classroom settings (Tiernan & O’Kelly, 2019). There is also a correlation between video views and student satisfaction (Beatty et al., 2019). Follow-up activities could integrate visuals and infographics to remind learners of the content and encourage both short- and long-term retention (Rajagopal et al., 2019; VanderMolen & Spivey, 2017). Another example of a follow-up activity is a writing (e.g. Google Docs) or speaking (e.g. Flipgrid) task in which students organize and demonstrate their learning.

As learners can access microlearning activities, such as streaming videos and gamified activities, using their mobile devices (Kohnke, 2021), they promote self-regulation and lifelong learning (Reinhard & Elwood, 2019). They also allow learners to interact and connect with each other and the content anytime and anywhere (Torgerson & Lannone, 2019). Moreover, teachers can remove content that could distract students to create a concise and focused experience. Microlearning can also provide learners with small achievement milestones that further motivate them and increase their engagement (Shamir-Inbal & Blau, 2022). The approach centres learners, as activities can be adapted based on their preferences (Davis & Arend, 2013), which facilitates self-directed learning (Bell, 2010; Cosneyfroy & Carre, 2014) and increases knowledge (Gagne et al., 2019; Wang et al., 2020). In addition, it caters to the preferences of students who have been digitally connected since childhood (Reinhardt & Elwood, 2019) and are accustomed to mobile devices, social media, and the quick burst of information that comes from a simple Google search.

Technology integration is the ‘new normal’ in education. Microlearning offers a new way to engage students and deliver student-centred learning.

1.4 Book Overview

This book is divided into chapters. The second chapter offers an overview of technological trends in language education. Chapter 3 delves into the pedagogical principles of designing microlearning activities for the ESL/EFL classroom, as well as the complex issues arising from the experience. The fourth chapter investigates how mobile microlearning can improve listening, speaking, writing, and reading skill. In Chap. 5, readers will learn how to create microlearning activities with podcasts, videos, infographics, and flashcards. The sixth chapter focuses on creating microlearning activities with virtual and augmented reality. Chatbots are introduced in Chap. 7, along with how they can be used in accordance with microlearning principles. Finally, future possibilities for microlearning in education are discussed in Chap. 8.

This book is a concise but comprehensive introduction to the field, which draws on relevant literature and the author's first-hand experience. It serves as an important starting point for teachers, curriculum developers, academics, and scholars interested in the principles and practices of microlearning in the ESL/EFL classroom.

References

- Adedoyin, O. B., & Soykan, E. (2020). Covid-19 pandemic and online learning: The challenges and opportunities. *Interactive Learning Environments*. <https://doi.org/10.1080/10494820.2020.1813180>
- Beatty, B. J., Merchant, Z., & Albert, M. (2019). Analysis of student use of video in a flipped classroom. *Tech Trends*, 63(4), 376–385. <https://doi.org/10.1007/s11528-017-0169-1>
- Bell, F. (2010). Network theories for technology-enabled learning and social change: Connectivism and actor network theory. In *Proceedings of Networked Learning Conference: Seventh International Conference on Networked Learning Aalborg/Denmark*. Digital collection of University of Salford.
- Cosnefroy, L., & Carré, P. (2014). Self-regulated and self-directed learning: Why don't some neighbors communicate? *International Journal Self-Directed Learning*, 11(2), 1–12.
- Davis, J. R., & Arend, B. (2013). *Seven ways of learning: A resource for more purposeful, effective, and enjoyable college teaching*. Stylus Publishing.
- Dolasinski, M. J., & Reynolds, J. (2019). Microlearning in the higher education hospitality classroom. *Journal of Hospitality & Tourism Education*. <https://doi.org/10.1080/10963758.2021.1963748>
- Epp, C. D., & Phirangee, K. (2019). Exploring mobile tool integration: Design activities carefully or students may not learn. *Contemporary Educational Psychology*, 59. <https://doi.org/10.1016/j.cedpsych.2019.101791>
- Fang, Q. (2018). A study of college English teaching mode in the context of micro-learning. In *International Conference on Management and Education, Humanities and Social Sciences (MEHSS 2018)*. Atlantis Press.
- Gagne, J. C., Park, K. H., Hall, K., Woodward, A., Yamane, S., & Kim, S. S. (2019). Microlearning in health professions education: Scoping review. *JMIR Medical Education*, 5(2). Retrieved from <https://mededu.jmir.org/2019/2/e13997/>
- Godwin-Jones, R. (2011). Mobile apps for language learning. *Language Learning & Technology*, 15, 2–11.