MICRO LEARNING PLAYBOOK

CRAFTING CAPTIVATING LEARNING EXPERIENCES
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The ability to adapt, learn, and innovate has become a competitive advantage like no other. In this context, microlearning has emerged as a powerful tool for individuals and organizations alike, and Aalto University’s Microlearning Playbook is an invaluable resource to harness this potential.

I have witnessed the transformative impact of microlearning in upskilling and reskilling. In an era where information is abundant and attention spans are narrow, traditional methods of learning need to be supplemented with new ways of learning, without compromising on the academic value. We need agile, bite-sized, and highly engaging learning experiences that empower us to acquire new skills and competencies, stay updated on industry trends, and solve on-demand challenges at work.

Aalto University has a reputation for excellence in educational innovations, and the Microlearning Playbook is a testament to our commitment to developing lifelong learning. This playbook is not just a manual; it is a roadmap for rethinking continuous education. It offers practical guidance on how to design, implement, and optimize microlearning solutions that deliver real results.

Throughout these pages, you will find insights from leading experts, case studies from Aalto University and actionable strategies to create a culture of lifelong learning. I encourage you to explore the rich content within the Microlearning Playbook and take advantage of the knowledge it provides. Embrace microlearning as a call-to-action for solving growing upskilling and reskilling needs.

Finally, I want to extend my thanks to the dedicated lifelong learning team at Aalto University and Aalto University Executive Education Ltd for their efforts in compiling this playbook.

– Laura Sivula
Business Area Director, Lifewide Learning
1. INTRODUCTION

In today’s ever-changing world, continuous learning has become a necessity. Developing skills and competencies is essential for professional and personal growth, yet finding the time and motivation for learning is a common challenge. Microlearning offers a solution to these challenges by allowing learners to acquire new competencies in bite-sized chunks. This approach, where information is cut into smaller, easily digestible pieces, has gained popularity among educational professionals and learners alike.

What do we mean when we talk about microlearning? Is “bite-sizing” the future of learning or just a passing trend?

In this playbook, we will introduce you to the essentials of the microlearning approach and explore some innovative ideas for crafting captivating learning experiences. While the concept of microlearning is nothing new, it has become a relevant topic in today’s discussions due to the new opportunities offered by modern technologies. We believe that the microlearning approach is particularly useful within the field of lifewide learning where learning experiences are often designed to be shorter and more focused on specific competencies.

“Microlearning works well for targeted training where we aim to fill identified skill and knowledge gaps. By offering focused learning modules to lifewide learners, we can better cater to individual learning needs”.

– Ida Hyvärinen
Program Manager, Lifewide Learning
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2. FUTURE OF LIFEWIDE LEARNING

As jobs change and even disappear, the need for upskilling and reskilling grows. But how will these changes shape the future of learning, and what role will technology play in all this?

There is a lot of discussion on how to answer the growing reskilling and upskilling needs that individuals and organizations are facing. At Aalto University Lifewide Learning, we are dedicated to developing our offering to meet the growing skill development needs of individuals, organizations, and society.

WHAT IS LIFEWIDE LEARNING

Lifewide learning is Aalto University’s answer to updating and expanding skills. Learning continues throughout our lives and takes place in different formats and situations. Besides degree education, learning can happen in less formal settings throughout our lives. To address the learning needs in society, Aalto University offers different learning opportunities, such as podcasts, short online courses, and professional development programs.

To provide more relevant learning content and flexibility for the lifewide learner audience, offering shorter learning opportunities becomes more critical than ever. One of Aalto’s most important development targets for lifewide learning are so-called “micro-credentials”, in which learning focuses on short courses and study modules. In 2022, the Council of the European Union recognized the growing need to offer and recognize learning experiences smaller than degrees and published a Recommendation on a European approach to micro-credentials for lifelong learning and employability.

WHAT ARE MICRO-CREDENTIALS

A ‘micro-credential’ is the record of the learning outcomes that the learner has acquired following a small volume of learning. Learning experiences leading to micro-credentials are designed to provide the learner with specific knowledge, skills and competencies that respond to societal, personal, cultural or labor market needs.

When designing learning experiences leading to micro-credentials, Aalto University Lifewide Learning follows the Recommendation on a European approach to micro-credentials for lifelong learning and employability.

In lifewide learning, we must cater to a broad audience with varying preferences and needs. While some learners prefer learning in a traditional classroom setting, some prefer digital, bite-sized formats. This playbook introduces you to microlearning as a potential approach to use when designing captivating learning experiences for lifewide learning.
3. WHAT IS MICROLEARNING

FIVE FACTS ABOUT MICROLEARNING

1. Puts knowledge in small and understandable pieces and grants learners' access to the newest information regardless of their location, time of day or the preferred format of information (Mohammed, Wakil, & Nawroly, 2018).

2. Increases students' learning abilities by 18% compared to traditional methods (Mohammed et al., 2018, as in Dolasinski & Reynolds, 2020).

3. Helps students retain information effectively (Mohammed, Wakil, & Nawroly 2018).

4. Learning resources can accessed at the time of breaks or gaps in learners' daily activities (Gabrielli, Kimani, Catarci, 2023).

5. Can be considered a contextual lifelong learning process (Gabrielli, Kimani, Catarci, 2023).

CHARACTERISTICS OF MICROLEARNING

The key characteristic of microlearning is that the content is broken down into small, highly focused pieces. These pieces are often referred to as “modules”. A common recommendation is that each microlearning module should only take around 5-15 minutes to consume and one module should introduce only one key idea at a time. By focusing on one topic at a time, it is easier for the learner to digest the information, and it makes it easier to revisit the topic when needed.

Adapted from: Torgerson, & Iannone. (2019).
Today’s learners are already used to short-form content presented on intuitive mobile platforms. Microlearning as a learning approach enables short learning spurts that can be as effortless as the use of social media. When it comes to packaging learning opportunities, the learner experience should not be any less than on other platforms that people use in their everyday lives. Not least, it has been said that due to the characteristics of microlearning, it fits like a glove for Generation Z learners.

**MICROLEARNING FORMATS**

The central principle in microlearning is that it can be easily consumed. Thus, microlearning content should be easily accessible on smartphones and other portable devices. It should be easy for the learner to log in to the platform and continue where they left off.

- Utilize mobile-friendly formats like videos, infographics, and interactive quizzes, making the learning experience engaging and visually appealing on mobile screens.
- Build it mobile-friendly so heavy visual content doesn’t take up a lot of the mobile data bandwidth.
- Focus on essential content, reduce clutter, and adopt a minimalist approach in design to enhance readability (Bruff, 2019).

To create content that invites the user to learn, you can use the following example components:

**Mobile-friendly content, includes:**
- Short paragraphs
- Bullet points and lists
- Summaries
- Quotes
- Glossary explaining terminology
- Text boxes
- Short videos
- Mini podcast
- Pictures
- Infographics, interactive infographics
- Gamification elements
- Micro-assessments
- Quizzes

Adapted from: Torgerson, & Iannone. (2019).

You can mix and match the components to create concise modules, such as mini-lectures or explainer videos, podcasts, a couple of pages of structured and well-spaced text, one-page infographics and e-learning modules.
When to use Microlearning?

Microlearning is a useful approach when offering skill-based learning. At Aalto University Lifewide Learning, it has been used particularly with programs that aim to introduce new topics for broad audiences and spark curiosity.

How to use Microlearning

Microlearning has various appropriate use cases:
- Stand-alone training allowing learners to complete microlearning modules when it best suits them
- Preparation before a learning event
- A follow-up to support a learning event
- Performance support resources that can be used as a quick guide at work.

DESIGN PRINCIPLES

There are several design principles that can be used when creating microlearning content. Some of these include:

➔ KEEP IT BRIEF AND FOCUSED
Ideally, each module should take no more than five to ten minutes to complete to help learners stay engaged and avoid cognitive overload and overwhelm (Bell, 2014).

➔ USE ENGAGING VISUALS & MULTIMEDIA
Using a variety of multimedia elements, such as videos, images, and audio, can help to enhance engagement and increase the effectiveness of the learning experience. Multimedia can also help to break up the monotony of text-based content and make the learning experience more engaging (Hughes, 2018).

➔ FOCUS ON A SINGLE OBJECTIVE
Each microlearning module should be designed to achieve a specific learning outcome, making it easier for learners to understand the purpose of the module and retain the information they have learned (Clark & Mayer, 2016).

➔ EMPHASIZE INTERACTIVITY & ENGAGEMENT
Interactive elements, such as quizzes, polls, and games, can help to reinforce learning, keep learners engaged, and make the learning experience more enjoyable, which can increase motivation and retention (Merrill, 2002).

➔ MAKE IT RESPONSIVE
Microlearning entails inclusively learning, i.e., when, where, and how one can. Designing microlearning content should follow a mobile-first approach, ensuring they are accessible on various devices including but not exclusive to smartphones and tablets. This approach enhances the flexibility of learning and enables learners to engage with the content anytime, anywhere (Traxler, 2007).

➔ ASSESS & IMPROVE
Short assessments with immediate feedback at the end of each module to evaluate learners’ understanding of the learning objective. Incorporate assessments to help facilitate knowledge reinforcement, analyze learner feedback, behavior, and outcomes to ensure effectiveness, and identify areas for enhancement (Pellegrino, 2013).
Microlearning is not meant to replace formal training content, but it can supplement formal training, and strengthen learners’ performance at the moment of need. Instructional designers should resist making the content too long or putting in too much information when designing microlearning unit.

**DESIGNING MICROLEARNING MODULES**

How do you design bite-sized content focused on a single learning objective?

1. **Define the learning objective** – focus on only one objective per module: By narrowing down the topic, learners are provided with a clear and coherent learning pathway, preventing information overload, and promoting deeper understanding. This focused approach streamlines content development, maximizes learning effectiveness and enables learners to achieve specific and measurable outcomes.

In situations where you have more content and multiple objectives, that’s fine! Just make a separate module for each as each module focuses on one objective!

2. **Select optimal formats and embrace variation** - identify formats that are effective and suitable for the material: Visual media like videos, images, and infographics have a powerful impact, leaving a lasting impression on learners. Supplementing textual information or narration through mini-podcasts can also aid retention. Interactive demonstrations ensure active learner participation, while quizzes and challenges provide a fun way for learners to apply their knowledge (Clark & Mayer, 2016).

Every learner learns differently. Design microlearning content using a mix of media, such as text, videos, infographics, and audio files, to tailor to different learning styles and preferences. Incorporating multimedia elements enhances learner engagement, facilitates retention, and delivers a lasting educational experience.

3. **Include assessments and reinforcement**: consistently verify the learner’s comprehension and retention of key concepts. Regular revisions and reinforcements throughout the learning process are important.

In a concise 10-minute module, dedicating just 1 minute to a comprehensive test or checkpoint, and an additional 1 minute for a recap of key learning takeaways can significantly contribute to the learners’ long-term retention of the content.
4. **CREATING MICROLEARNING**

4. Provide “good to know”: Learners prioritize essential information within a limited time: Linking contextualized knowledge at the end of the module can deepen learners’ understanding and allow learners to enhance their performance while providing an optional opportunity for further exploration.

Providing additional resources and further readings is effortless to include, and the microlearning course will feel more comprehensive and complete.

**USEFUL UNIVERSAL DESIGN PRINCIPLES**

We design in context, with purpose, for everyone, with honesty, iteratively.

To reduce cognitive load
- Avoid unnecessary elements
- Eliminate unnecessary tasks
- Minimize choices
- Display choices as a group
- Strive for readability
- Use iconography with caution

For experience
- Present few choices
- Limit distractions,
- Provide context
- Avoid jargon
- Make things efficient
- Use clear and simple language

This way, production can be quicker and easier to get information to the public, skipping long design phases. For further instructions: [First principles of Instruction](#)
Digital tools also allow us to create engaging content and make learning accessible to everyone with the following principles:

**A.** Content and interface elements must be presented in ways that all learners can perceive.

**B.** Information and navigation interface must be clear to the learners.

**C.** Content must be robust enough to be reliably interpreted by a variety of user agents, such as assistive technologies.

For more information on digital accessibility for designing microlearning content please follow Aalto’s guidance: [Digital Accessibility](#).

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**CREATING ACCESSIBLE LEARNING ENVIRONMENTS**

Microlearning enables learning in a fast and accessible manner. Accessible learning products require work on the following functionality:

1. **Color contrast** makes visual elements distinct and more easily distinguishable for learners with a variety of vision difficulties.

2. **Navigation and clear instructions** on different styles of using learning environments and devices.

3. **Transcripts, closed captions, and alternate videos** for accessible audio content.

4. **Adjustable fonts** to improve legibility for users with reading difficulties.

**More information:** [Building accessible learning products: A best practice guide to inclusive design in assessment](#)

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4. **CREATING MICROLEARNING**
ASSESSMENT METHODS

Assessment in microlearning serves a dual purpose: evaluating the understanding of the learning objective and measuring the overall effectiveness of the microlearning module. (Kapp & Defelice, 2019)

Pre- and post-assessments are the common method for evaluating the impact of microlearning on the learning outcome. Pre-assessments help in understanding the learners’ prior knowledge, while post-assessments measure the knowledge gained after completing the microlearning module.

- **Formative assessments**: quizzes, interactive activities, or knowledge checks, followed by immediate feedback to learners and help gauge their understanding in real-time.
- **Performance-based assessments**: assessments that allow learners to apply their acquired knowledge and skills in real-world scenarios, such can be achieved through simulations, case studies, or practical exercises. (Looney, 2011)

ASSESSMENT FOR IMPROVEMENT

By assessing learners, educators can identify areas of improvement and tailor future content accordingly.

A. **Surveys and feedback**: offers valuable qualitative data on the learner’s experience, comprehension, and suggestions for improvement.

B. **Analytics and tracking**: allows for gathering data on learner engagement, completion rates, time spent on modules, and knowledge retention. These metrics provide quantitative insights into engagement levels and help identify areas that need improvement.

C. **Post-learning evaluation**: aims to assess the long-term impact of microlearning on learner performance and behavior. Evaluate and make data-driven improvements and interventions and ensure continuous enhancement of the learning experience (Siemens, 2013).

Learning is rapidly transforming and microlearning experiences are gaining popularity due to their advantages—the ability to fit learning into busy schedules. This paradigm shift is shaping a more flexible and accessible approach, putting microlearning at the forefront of this evolution.

While microlearning modules typically provide targeted knowledge or skill acquisition within a brief timeframe, micro-courses take this concept further by combining multiple modules into a cohesive and structured learning journey. Microlearning empowers the design of micro-courses by breaking down the learning content into easily digestible modules, enhancing engagement, information retention, and the overall learning experience.

By presenting content in a modular format, non-linear learning journeys become possible, enabling learners to customize their educational path according to their individual needs and interests. Microlearning modules facilitate a learner-centered approach, empowering individuals to take control of their learning and progress at their own pace (Oblinger, 2006).

These credentials are often earned by completing a set of micro-courses or modules. Microlearning’s efficiency makes it a key enabler of micro-credentials, as learners can acquire and demonstrate competence in a shorter timeframe. As the demand for flexible and personalized learning grows, microlearning offers a promising solution, catering to diverse learner needs and providing valuable knowledge and skills in a focused, convenient, and impactful manner.

“Small learning experiences, such as short courses leading to micro-credentials, allow for a targeted acquisition of skills and competencies adapted to a fast-changing society and labor market while not replacing traditional qualifications. Their objective is to be complementary.”

– European Union, 2021
6. FROM MICROLEARNING TO MICRO-CREDENTIALS

EXAMPLE FROM AALTO UNIVERSITY LIFEWIDE LEARNING COMMERCIAL PORTFOLIO

- **Micro-certificate**: Short asynchronous online course (or a set of smaller micro-courses) that are equivalent to 1-2 ECTS credit. Micro-Certificates are used to demonstrate the acquired knowledge in some thematic area. The credential earned will follow the common European guidelines on micro-credentials.

- **Micro-course**: Stackable online courses that can be only few hours long. Micro-courses contribute towards micro-certificates.

- **Microlearning module**: Small, bite-sized learning units that take 5-10 minutes to complete. Each module focuses on one key idea at a time.
**FREQUENTLY ASKED QUESTIONS ON MICROLEARNING**

**Can I make my course microlearning by cutting a one-hour video into several 5-minute videos?**

It is crucial to design each short video with a specific learning objective in mind. Each video should focus solely on what the learner needs to achieve that particular objective.

**How short should my microlearning content be?**

There are varying suggestions regarding the ideal duration for microlearning modules, often ranging between 5 to 15 minutes. Instead of solely looking at the duration, prioritize purposeful design. Make sure each short video focuses on one key idea and learning objective. If you feel that your module is too long, consider if there is a way to further divide the topic into even smaller pieces.

**Should all lifelong learning be microlearning?**

The suitability of microlearning depends on the objectives of your learning program; are you aiming to raise awareness about a topic for a broad audience, or are you providing training on highly specialized and complex issues that demand in-depth analysis? Microlearning is beneficial when delivering targeted, easily digestible content.

**What are the benefits of microlearning for learners?**

Flexibility. Moreover, microlearning can support personalized learning journeys by enabling individuals to access timely training on topics that answer their personal reskilling and upskilling needs.

**According to microlearning, should bigger courses be chopped up into multiple smaller courses?**

Microlearning is a learning method and a guideline for designing focused and bite-sized learning content. It can be utilized in micro-courses and as part of larger courses worth several ECTS. However, taking a microlearning approach does not suggest chopping up a 5 ECTS course into five 1 ECTS courses, for example.

**When to not use microlearning?**

One size doesn’t fit all – and this also goes for learning. Although microlearning can be an excellent approach linked to many benefits, it may not be suitable for all topics. Microlearning is not an ideal way of teaching large and complex topics that cannot be introduced in a series of small ideas. Some topics need more in-depth analysis and interaction with peers. Hence, it is important to recognize what types of information can be delivered in a bite-sized form and what can’t.


European Commission https://education.ec.europa.eu/education-levels/higher-education/micro-credentials


