Marketplace potential for microlearning

As a part of a much deeper dive into the potential of microlearning, Pure & Applied has put together this abbreviated report to help organizations consider this highly valuable educational resource and compare it against other online learning options.

Literature review (an excerpt)

As technology evolves and more digital touchpoints enter the workplace there are also increasing opportunities for the integration of informal just-in-time learning and reinforcement, such as microlearning.

Organizations are experimenting with the use of microlearning to train employees, drive better performance, support professional development, improve work conditions, reinforce training, nurture team adaptability, or build culture (Schumann, 2017). In fact, a research conducted by ADT Research, reports that 92% of talent development professionals "expect their organization's use of microlearning to increase in the next years" (Cole, 2017).

The benefits of Microlearning
Here are the reasons why learning in bite-sized pieces is more efficient in professional development settings:

- When bite-sized learning content is easily and readily accessible, learners can take it at their own pace, in specific moments and conditions of the day, and most importantly, when they are "ready" (Gray, 2015).
- Microlearning is similar to how adults informally learn today. Learning in short, focused bursts designed to meet specific knowledge outcomes—is all around us (Emerson and Berge, 2018).
- Because microlearning courses are more focused, learners don't have to overload their memories with irrelevant information. This makes effort low and retention easier (Schumann, 2017).
- Because microlearning content addresses only 1-2 learning objectives, courses, on average, yield 4-5 learned takeaways (Gray, 2015).
- Microlearning is hailed as a strategy that can help deliver the right information to the right learners, at the right level of detail and at the precise moment they need it (Emerson and Berge, 2018).
- Microlearning, when designed according to research and best practices, improves leadership development by keeping leaders up-to-date with the changing world (Preiston, 2020).

In-person training is no longer the most preferred way of learning in the workplace. While benchmarking results of microlearning, the Towards Maturity 2011 Benchmark Study indicates that managers prefer consistent on-demand learning and access to up-to-date information in a timely manner (Overton, 2011).

Microlearning is increasingly a way for employees to expand their knowledge over time. However, the mediocrity and quality of microlearning available in the market today lowers the effectiveness.

Effective microlearning requires a combination of microlearning strategies, knowledge management and novel design approaches.

> **Fundamentals of microlearning**

Profile of learner: Microlearning is a short, bite-sized learning opportunity for individuals with some level of familiarity with the subject-matter. Marchionini and Maurer say informal learning outside the formal class setting significantly contributes to the motivation to learn a specific subject-matter (2005). Microlearnings may not be the best tool when the learner is learning something for the first time or when the topic is a complex skill that may need the support of a teacher, mentor, simulation and more (Fox, 2016).

Maturity of learner and content: microlearning is considered a form of informal, lifelong learning. Due to the nature of microlearning – flexible, self-directed and short-cycled consumption and application of content – they are predominantly made for mature audiences. Learners expect to be provided with "very specific pieces of information instead of a complete body of knowledge, in order to support decision making or the acquisition of a certain skill" (Gabrielli et al., 2016). Thus, the relevance, maturity and tone of content is an important design consideration to make when developing or improving a micro-lesson.

Length of micro-lesson: micro-lessons, at their very core, are short. Micro-lessons can be between 3 to 5 minutes or between 6 and 12 minutes. From a design and perceived value level, it is highly recommended that microlessons be no longer than 6 to 10 cards. Paul (2016) defines the anatomy of a microlearning module as having a title, a body, and an evaluation question. The title of a microlearning event is critical for accurate indexing purposes and to convey its use to the learner in a simple and direct manner. Learners use the title to decide whether to click to begin. The body focuses on giving the user an idea to think about and an action to carry out (Paul, 2016).

Lesson structure and scope: each lesson should introduce the topic, educate on the topic and reinforce that topic. Repetition of this structure and sequence allows for learners to become comfortable with the format by which they will learn. Micro-lessons are not a simply condensed version or summary of a traditional training. This is a misconception. Micro-lessons are best used for building incremental knowledge, and reinforcement (Fox, 2016). When a lesson is focused on developing skills, the lesson structure can be the following: introduce the topic, provide step-by-step demonstration and tips, reinforce the topic by allowing the learner to apply themselves.

According to Gabrielli et al. (2016), microlearning is most effective when the lessons can enable to apply themselves through the following types of activities:
1. the construction of knowledge, by means of finding new solutions to problems or creating connections between past and current personal experiences,

2. conversation with both the social physical world and with oneself (like in reflection, experimentation in the world and interpretation of results) – allowing them to pull from conversations and observations – as well as,
3. learner control over any continuing cycles of experimentation and reflection.

> **Knowledge sharing and reinforcement**

Suitability for difficult topics: Micro-lessons change the traditional teacher-centered model into a students-centered and question-centered model. Effective micro-lessons by structure and design make users an active learner. Micro-lessons can meet and be effective for learners who need to individualize the pace, location and how they are learning and applying themselves.

Micro-lessons can be an effective way for learners to engage with sensitive real-life topics, like DEI, open collaboration, innovation, and more. According to Yuan et al., and their own independent research around the application of micro-lesson to sensitive and complex topics such as Optics teaching, they identify the ways in which the micro-lesson structure is suitable to addressing "difficult" topics in a direct and applicable manner (2017). Figure 3 below illustrates the repeated functions by which micro-lessons support knowledge sharing and reinforcement.
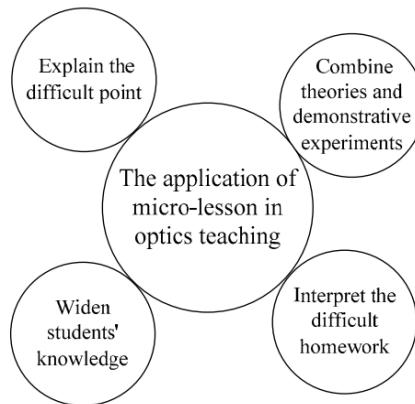
Fig.3 The application of micro-lesson in optics teaching

Predictability of knowledge library: the use of micro-lessons can be for individual and group settings. What a company offering needs to be knowledge for is a consistent number of topics and sub-topics. As mentioned before, consistency in structure, sequence and depth of topics allows for learners to understand the format and also know what they can expect in future micro-lessons. Use your knowledge library and indexing functionality to provide accurate descriptions of the micro-lessons and even suggest lessons based on historical usage data.

Authentic sharing: According to Vries et al (2019), authentic knowledge sharing improves the way in which a learner engages and moves forward in improving themselves. Authentic sharing can be found in providing exposure to real-life context with topics that are relevant and applicable, or by allowing the learner to self-direct themselves and self-select what is most relevant to their own contexts – "It is a process of which the outcome will be evaluated by the learners themselves […] educational activities need to be designed in such a way that people, albeit individuals or groups, have space to discuss their own goals and work towards them".

Knowledge transfer and knowledge reinforcement: Effective micro-lessons carefully take into account four (4) aspects: duration, depth of content, structure and type of interactive card(s). All four aspects together enable learners to learn and apply themselves with the topic at hand; from a pedagogical perspective, effective micro-lessons allow for knowledge transfer and knowledge reinforcement.

Before determining the duration, depth of content, structure and type of interactive cards to use, you need to:

1. Identify the overarching question you'd like to expand on and answer for your learner.
2. Identify the top level categories of information you'd need to include for educational purposes.
3. Identify sub-categories of data (text or video) within these top level categories.
4. Determine how best knowledge can be reinforced by means of self-application or self-reflection.
5. Determine whether information can be digestible in one micro-lesson or across several.
6. Determine your "closing" of how a learner can best continue learning about the topic.

In reference to point #4 above, a topic within a micro-lesson can be (1) a one-and-done, where the topic is completely covered by one micro-lesson or (2) experienced as a progression of learning through the exposure of several sub-topics. Refer to figures below (Vreis et al., 2019).

Example of a one-and-done structure

Example of a progression of micro-lessons
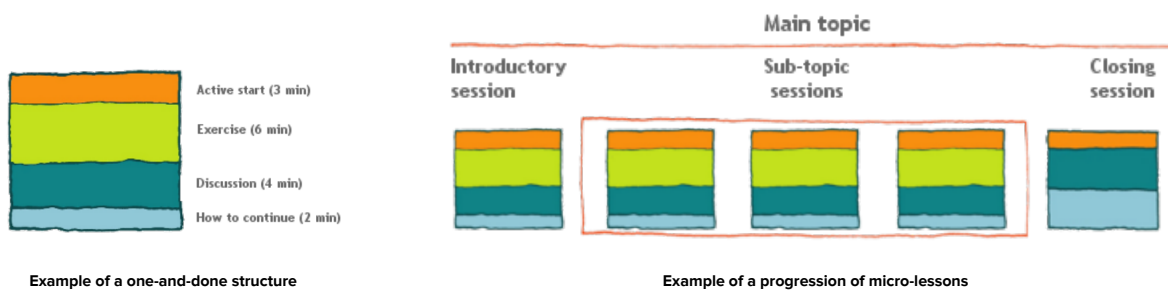
As far as microlearning contents are concerned, there are meta requirements to the type of content and theoretical approaches to factor in the development of any micro-lesson. "In particular, [micro-lessons] should:

1. promote the acquisition of basic skills such as flexibility and adaptability in learners, making them aware of the very rapid and changing nature of knowledge in everyday environments,
2. foster the development of creativity skills, as well as problem solving and managing competences,
3. capitalize on learners communication abilities as a way of supporting the social production and reconstruction of knowledge during learning and working activities and try to improve them by providing learners ways of analysing their own communication styles as recurrently practiced in the field" (Gabrielli et al., 2016).

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