MICROLEARNING
AN EVOLVING ELEARNING TREND

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ABSTRACT

This article is analyzing the meanings of the micro-learning trend, as they have emerged and developed over the last few years. Exploring how the term micro-learning is used to organize and order a set of pedagogical and technological phenomena and concepts in new and interesting ways, it is brought into focus the most popular and widely used learning management platforms that embrace this concept.

KEYWORDS:

Micro-learning, elearning, micro-content

1. Why micro-learning?

Social, economic and technological everyday changes trigger new concepts and strategies which support learning. Education needs transformations in an appropriate way in which we live, work and learn. Recent studies indicate that a short content may increase information retention by 20 %. Researchers at Dresden University of Technology in Germany have launched a study to examine this issue.

It is well known that most e-learning materials format is a piece of content, followed by an evaluation question. The study's goal was to see if students respond better to these questions when they watched several small pieces of content answering many appropriate questions, or when they watched large amounts of content with fewer evaluation sections. So, the e-learning material was sixteen chapters of content and the students were divided into three groups, as following: the first group responded to a question after reading each of the 16 chapters; the second group answered four questions after reading each group of four chapters; group number three received eight questions after each half of the original text. Passing through this first stage, in the second stage students have supported the same test of multiple choice items covering the whole course material.

Results demonstrated that smaller slices content helped participants to better retain information and better perform in each of the two stages:

• the first group took 28 % less time to answer their assessment questions than the third group, and did 20 % better;

• the first group performed 8 % better on the comprehensive test than the second;

• students in the third group had to read again more than three times the number of sections than the first group did;

• in the second stage of the study, the first group accomplished 22.2 % better

than the third group and 8.4 % better than the second group.

Giving students a long content at once leads to very little interaction between information and the learner. This way, the content may exceed the capacity of working memory and drives to uncertainty in the learning environment. Another facet of the problem is that, knowing what is expected with introduced information is crucial in an easier retention.

So it has been proved that micro-learning offers students the opportunity to more easily absorb and retain the information provided by the course lessons and activities that are more manageable and digestible. Micro-learning or Micro-eLearning education is often referred to as "bite-sized" because the entire educational process is detached in small chunks that usually last no longer than a few minutes.

The way micro-learning addresses short size of learning content that is made up of fine-grained, interconnected and loosely-coupled short learning activities, determines the focus on the individual learning needs (Singh, 2014).

2. Micro-learning Associated Concepts

Influencing each other, micro-learning is closely related to the following concepts:

• Micro-content – Micro-learning and micro-content together define how to deliver a quantity of knowledge and information, structured in several short chapters, fine-grained, well-defined and interconnected. Micro-content refers to information whose length is determined by a single topic, content that covers a single idea or concept and is accessible via a single URL, being suitable for presentation in handheld devices, emails, web-browsers. Thus, micro-content is the part that integrates into micro-learning.

• Social software – Through its main feature to support social interaction, social software brings together individuals with different interests and different previous knowledge via social networks, based on collaboration. Micro-learning can be supported by social software because it allows on the one hand the rapid delivery of content in short and flexible formats and, on the other hand social interactions based on that content.

• Web 2.0 – Since Web 2.0 encourages the teaching and learning processes based on personalization and collaboration with students taking responsibility for learning, currently, Web 2.0 platforms are used for professional development, enhancing education in the classroom. An important aspect of Web 2.0 that micro-learning can rely on is the active participation of students in the process of co-creation and distribution of content.

• Informal learning – One of the challenges already launched in contemporary society is the need for rethinking education, by articulating three ways: formal, non-formal and informal education. As a permanent dimension of human existence, education must have a global character, effectively combining the formal education with the non-formal and informal. Because micro-learning does not require a long-term involvement of the student's attention and every day activities, it can be useful to learning activities as needed, providing a bridge between formal and informal learning.

• Personal Learning Environments – Personal Learning Environments (PLE), especially in contrast to traditional learning management systems, are particularly successful and are about to change the paradigm of learning and teaching. There are some aspects where these changes are more obvious or that seem most important. In short, learning in PLE brings changes concerning: (1) the role of student as the creator of active and self-organized content, (2) personalization thanks to the support and data of community members, (3) learning content is an unlimited collection, (4) the crucial role of social participation, (5) the significance of self-organized learning to the pedagogical culture of the organization

and (6) technological aspects of using software tools and grouping of social multiple sources.

• Work-based learning – The contribution that work-based learning has in sustaining economic competitiveness and beyond is widely recognized, so organizations that have training systems well developed and, in particular, well established systems of apprenticeship, tend to achieve better performance. Following this idea, the term micro-training could be the micro-learning equivalent, related to the work-based learning. The real added value of micro-training in combination with Web 2.0 and social software is its ability to integrate short formats with user-generated content and social interaction.

3. Micro-learning Tools and Platforms

3.1. Grovo platform – www.grovo.com/microlearning

The micro-learning approach used in this learning management system is the exposure of the information bit by bit, in a concentrated form. For each theme are presented the most important issues on the one hand, and on the other hand, is exposed the whole picture. The method is greeted by students through a favorable response, obtaining better results and retaining information presented much easier. Lessons or learning units, which are taken by students, by watching short videos, cover a wide range of topics such as market strategies online or methods for the management of a project, and other topics of interest such as social networks dynamic. In the Grovo environment videos between 60 and 90 seconds are created every day, so teams within corporations to be constantly updated with the most useful technology on the market.

In addition to the over 4,500 existing video in the platform, each company has the opportunity to record their own videos, thus projecting adaptability to the specific needs of each environment separately. So, if the intention is to deliver certain information to employees of companies that were not already covered by those conducting educational materials, the situation is easily remedied as Grovo platform is flexible in this regard. Using the *Create Training* option, managers can tailor content provided by Grovo according to their needs. Thus, they can reorder clips, edit titles, descriptions or questions within them can add chapters and can combine existing elements with additional ones created by themselves.

The system can be configured so users can be added, grouped or removed. There are many tools available at the instructor level that can monitor the progress of each user, taking account also of their strengths and weaknesses. Depending on their level, each student can advance to a higher level.

Not only individual progress, but that of an entire team can be easily monitored by the teacher using the *Dashboard* section. As each student can scroll through lessons at their own pace, the birth of discrepancies between the levels attained by each is inevitable. Therefore, the platform provides the instructor a graph that presents an overview of the learning situation. He can see who carried out the activity and who is not, who fell and who promoted and who did not start at all the activity.

3.2. Coursmos platform – https://coursmos.com/

Coursmos is another online learning platform that supports micro-learning. It hosts several hundred micro-courses – online courses, which are divided into smaller, more manageable units. These lessons are characterized by minutes-long duration that learners can do on their own time, even using the smartphone. Personalized learning experience perfectly combined with any curriculum is a very attractive way to educate.

The platform learning unit is the micro-course, a format that has seven video lessons, for three-five minutes each (see Figure no. 1).
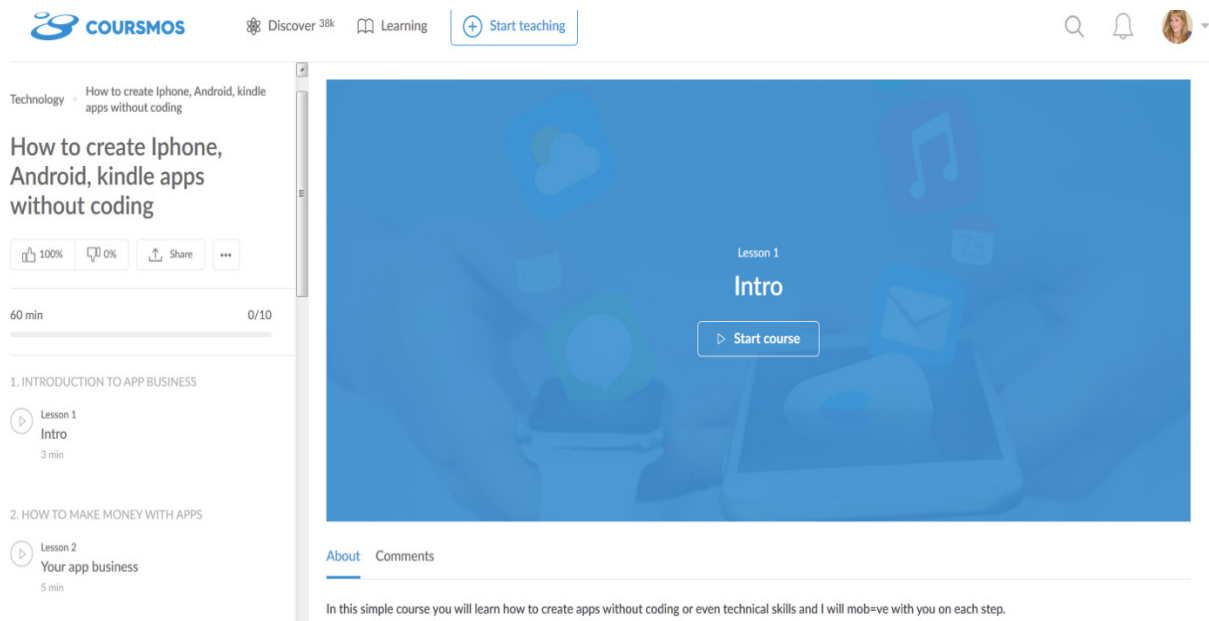
Figure no. 1 Example of a Coursmos window

The predictions concerning the future of learning, made by the Coursmos platform, are quite simple and common sense; given the environment where digital technology will continue to grow, the facts about learning are as following: "learning is an added value and so people's careers have built-in learning", "Learning ads value. Time spent learning is regarded as a positive boost to performance improvement", "Learning will no longer be just an add-on to corporate life; it will be the source of power at work" (Kostochka, 2016). We witness "the beginning of the learning economy" and the "miniaturization of everything". That is why "learning has been miniaturized to fit the bits and pieces in our lives".

3.3. Yammer platform – https://www.yammer.com/

Yammer is a closed circuit social networking platform for companies. The users of an organization can share information, experiences and can work together on projects, can comment, provide feedback, etc. They can also create groups, subgroups, communities, blogs, etc. (see Figura no. 2).

As people are encouraged to engage in conversation, but be sure that the information remains within the organization, "Yammer is as Facebook for business". Yammer accelerates processes just by this opportunity to discuss a problem anywhere and anytime in an informal manner, which stimulates creativity, non invasive but still controllable. Another interesting detail related to Yammer is that users cannot make accounts using generalist email addresses, such Gmail or Yahoo, (see Figure no. 3).

Yammer is a service available in freemium mode (basic version is free, premium version with money) and there are applications for all mobile platforms iPhone, Windows Phone, Android, BlackBerry.
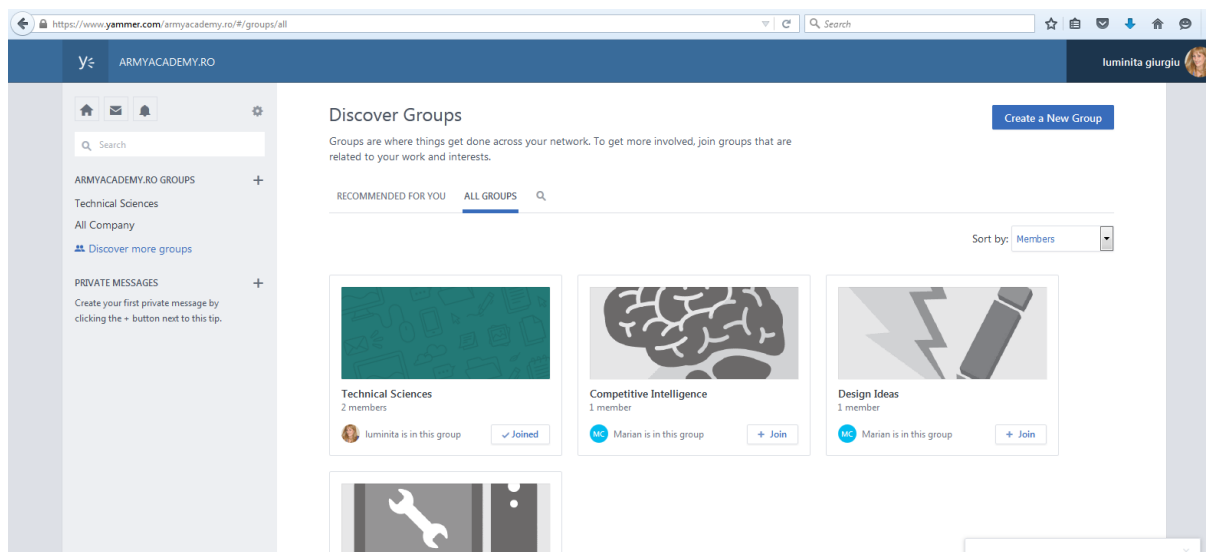
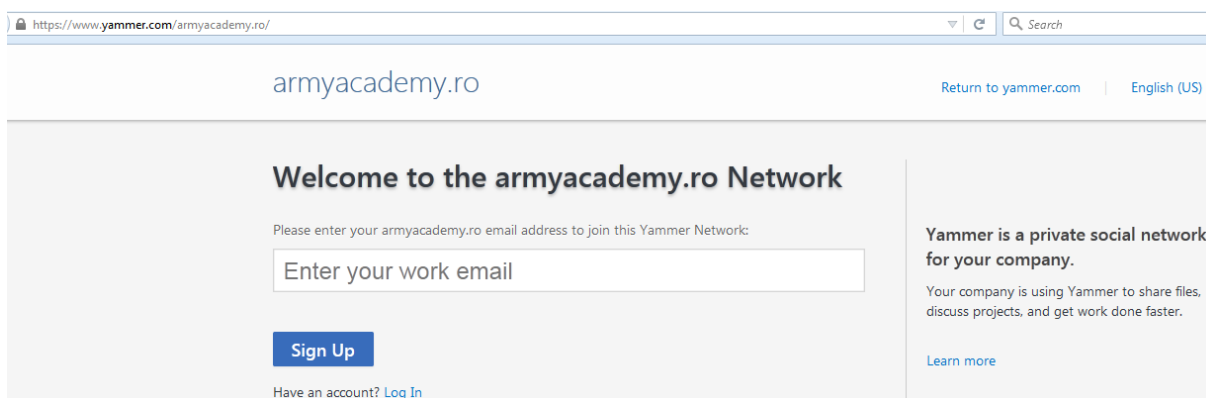*Figure no. 2 armyacademy.ro groups*

Figure no. 3 armyacademy.ro Yammer networking platform

4. Conclusion

In a globalized business world, with expectations of increasingly large and increasing influence of social media and networking, organizations are in the position to look for new ways to engage employees in learning and organization problem solving. The use of social media and micro-learning offer many possibilities, not only to draw attention to key messages, but also to create a collaborative environment focused on improving business.

Based on the facts and arguments above, micro-learning can be described as a pragmatic innovation for lifelong learning. Pragmatic – because it is congruent with current information and communication models and can be easily adapted to support individual learning needs, especially in informal learning contexts. Innovation – because it offers a new way to design and organize learning, such as learning in small steps and small units of content, structure and sequencing based on the co-creation of content, generation and use of content through social interaction (elearninglearning.com, 2017).

Also, as another conclusion, it is interesting to compare the new micro-learning option with the old one, the macro-learning way. Speaking in terms of time and scope, the differences between micro-learning and macro-learning are condensed in Figure no. 4.

		Macrolearning	Microlearning
1	Learning context	formal learning	informal learning
2	Time spent	several hours	a few seconds up to about 15 minutes
3	Content type	learning modules, comprising and structuring a broader range of ideas or topics and combining learning objects	microcontent as small chunks of information, focusing on a single definable idea or topic
4	Content creation	content created by subject matter experts, usually with authoring tools	content co-created by learners with Web 2.0 and rapid e-learning tools
5	Content aggregation and fragmentation	learning objects usually need to be combined with other learning objects to enable full understanding; content can be easily split for re-use and restructuring	microcontent units are self-contained as they can be understood without any additional information; microcontent cannot be divided into smaller pieces without the loss of meaning
6	Content retrieval	courses or topics retrievable through a unique URL, however single learning objects are not addressable	microcontent has a unique URL (permalink), which make even small chunks of information retrievable
7	Structure of the learning cycle	hierarchic, sequential, pre-planned structures consisting of a number of units or lessons, each combining a number of learning objects, such as texts, images, audio, video	dynamic, flexible structures created by learners in the process of learning through syndication, aggregation and modification, based on such data as social tags and bookmarks
8	Target group	learners aiming at gaining an insight into topics defined by domain experts	learners aiming at exploring concepts or solving practical problems
9	Learner's role	learners as consumers of content, attempting to build mental structures similar to those of experts	learners as prosumers of content, building own mental structures through exploration and social interaction
10	Learner participation	focuses on learner-content interactions	focuses on social interactions between learners

Figure no. 4 Comparison between micro and macro-learning

There is a general perception that the new generation of employees will be more technology oriented than previous ones. They are self-confident, open, optimistic and receptive to new ideas and work styles. They are the first generation in history "always connected" and to keep them close, employers will be forced to rethink their learning and communication strategies.

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