

Micro Learning: A Modernized Education System

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Abstract

Learning is an understanding of how the human brain is wired to learning rather than to an approach or a system. It is one of the best and most frequent approaches for the 21st century learners. Micro learning is more interesting due to its way of teaching and learning the content in a small, very specific burst. Here the learners decide what and when to learn. Content, time, curriculum, form, process, mediality, and learning type are the dimensions of micro learning. Our paper will discuss about micro learning and about the micro-content management system. The study will reflect the views of different users, and will analyze the collected data. Finally, it will be concluded with its pros and cons.

Keyword: micro learning, education, knowledge, work-based learning, micro content

1. Introduction

The impact of Information and Communication Technology (ICT) is becoming increasingly effective in teaching and learning at all the levels of education. *Micro-learning: it's learning in tiny chunks and short bursts of time. Great way to learn in the small. Goes well with mobile. Will only get bigger in the future.*

Micro learning is enjoying a rapid growth and importance among the changing management and learning professionals. Micro learning is the most suitable method for the latest learning system. The search for the right technology has been the core concept of micro learning¹. On the other hand micro learning is a new way of responding to the necessity of work-based learning, lifelong learning, personal learning, and much more. It is more successful due to its perfect combination of small chunks of learning content along with the flexibility of technology. Micro learning has become more popular due to its features such as learner centric, affordable, interactive, and well designed. Section I will discuss about micro learning and its advantages, while section II will discuss about micro content. Section III and IV will state about the methodology, and the collected data will be analyzed, and the final section, V, will conclude with discussions.

2. Micro learning

Micro-learning (from the Greek word “micro” meaning small) is all about getting your eLearning in small doses, as tiny bursts of training material that you can comprehend in a short time (<http://www.efrontlearning.net> dated on 10/10/2015). It goes along with traditional eLearning, but in smaller segments. In micro learning instructional design techniques are used to acquire knowledge, skills, and abilities which happen on a daily basis.

¹ <http://www.talentlms.com/elearning/elearning-101-jan2014-v1.1.pdf>

The methods of micro learning are in line with the way that the learner's brain naturally takes in information, so that the body does not get stressed-out. One of the salient features of micro learning is that it allows the user to find exactly what he or she is looking for.

When the mind focuses on a particular question, it is the most open to receiving that answer (www.digitalpromise.org/microcredentials dated on 10/10/2015). It allows the learner's brain to explore its own curiosity and its own patterns.

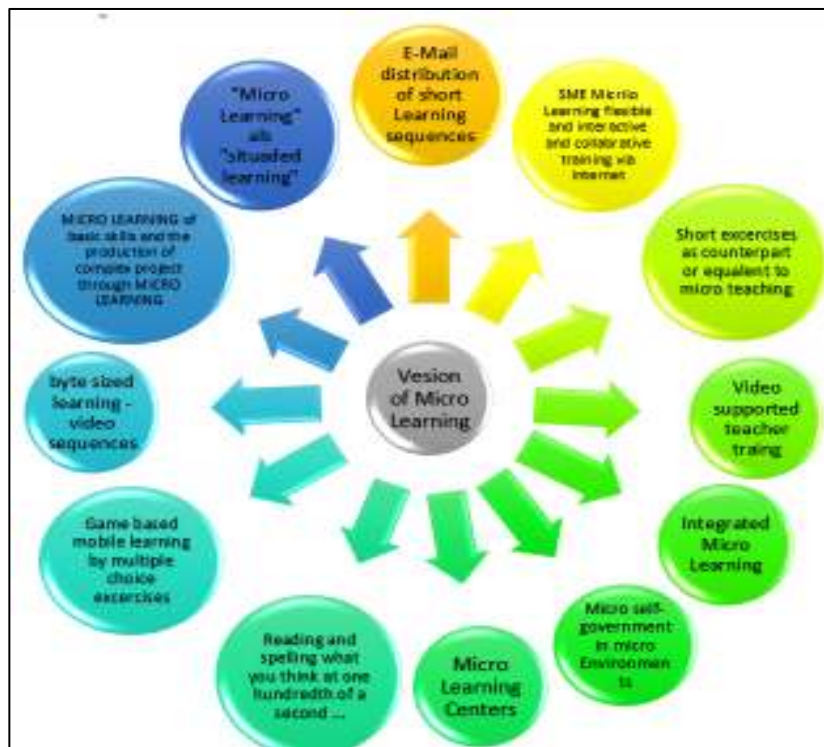


Figure 1. Mind mapping of Concepts and Versions of Micro learning (Hug, 2005)

a. Advantages of Micro Learning

- Micro-learning is performed in short time bursts;
- Micro-learning requires little effort from individual sessions;
- Micro-learning involves simple and/or narrow topics;
- It's fun and engaging. It makes the user always be updated;
- It's casual and informal (www.digitalpromise.org/microcredentials dated on 10/10/2015);
- Micro learning is a way to solve the problems that educators and trainers of today deal with.

There are a few main advantages such as continuous updates, multitasking, getting interactive, staying alert, pocket benefits, and blended up. It is a daily learning process. Mobile learning and daily learning go hand in hand, which allows the user to learn anywhere and anytime.

b. Limitations of Micro Learning

- Micro-learning is NOT useful when people need to acquire/learn complex skills, processes, or behaviors;
- People need relevant practice - and feedback on performance;
- People cannot multi-task. It is an illusion to think we can learn - and do other work tasks - at the same time;
- Reading something or even following the steps listed in a micro-lesson is not the same thing as "learning" (http://www.bottomlineperformance.com/the-myth-of-micro-learning/ dated pm 11/10/2015).

3. Microcontent

The microcontent is a small unit of digital information. It has very limited and important information compared to a regular content (because of the size of the screen and the complexity of the interface). Microcontents are always remixable and reusable based on the mind of the user, on the processing method of an application, and on the screen of the device. The contents are always free to be separated, and can form any new pattern (Sánchez-Alonso et al., 2006). Microcontents are clearly distinguished from macrocontents because they are formal, as well as semantic. Microcontents are very attractive because they are also individually addressed and referred to by sets of formal metadata. The metaweb itself is formed of microcontent.

4. Methodology

The main objective of this research is to create a universal awareness among the learners, to know the necessity of micro learning, and to increase the usability of learning through electronic devices. The importance of micro learning on daily bases should be understood and increased, which is also one of our goal. The respondents for the population research will be kept down to a small number of 100 respondents. The respondents are mixed group of students (both school and college), teachers, professors, working professionals, unemployed, house wives, research scholars, etc. For the purpose of obtaining information for micro learning, information was gathered through interviews conducted over the telephone, e-mails, face-to-face meetings, etc.

Table 1. Yes/ No Questionnaire

	Yes	No
I welcome a new and smart version of software.		
I rely on my work infrastructure to support my learning needs.		
I learn more often in Personnel Learning Environment.		
I prefer microcontent to transform knowledge.		
I prefer a simple and smart learning system in regular basics.		

Table 2. Yes/ No Questionnaire

	Yes	No
Books		
Images		
Video clips		
Sound and voice recording		
Journals		
Emails		
Graphical displays		
Reference volume		
Electronic devices like smartphone....		
Others (please specify)		

Table 3. Usage of Electronic devices (in specific about smartphones, etc), select your choice

For emails	
For social networking sites like Facebook, twitter....	
For learning and updating	
For communication like WhatsApp , Viber Extra	
Others	

Table 4. Strengthening knowledge input through microlearning dimensions. State your view

Mediality	
Learning type	
Form	
Process	
Curriculum	
Content	
Time	
All	

Table 5. Activities dealing with micro learning, select your choice

Tagging	
Story Telling	
Mind Mapping	
Text	
Others	
(Please specify)	

Table 6. Comparison for identifying the key success factor versus learning approach

	Traditional learning	Macro learning	Micro learning
Shared knowledge reading			
User friendly			
Global access from multiple devices			
Easy learning			
Simple content transferability			
Holistic			
Recursive resource			

Table 7. Likert Scale Questionnaire

	Agree	Strongly agree	Disagree	Strongly disagree
Micro learning is the best learning system for working environments.				
Micro learning is suitable for diverse subjects.				
Dynamic applications of micro learning enhance knowledge.				
Digital artifacts are used in micro learning for maximizing the process of aggregation, arrangement manipulation and configuration.				
Integrated micro learning like a mashup personal learning environment is more effective.				

5. Data analysis

The authors made a percentage analysis based on the basic data collected from the respondents. Out of 100 questionnaires distributed for data collection for the research study, only 91 were received. After reviewing the questionnaires, 7 were incomplete; therefore they were removed from the analysis. The following analysis is based on 84 full and complete questionnaires.

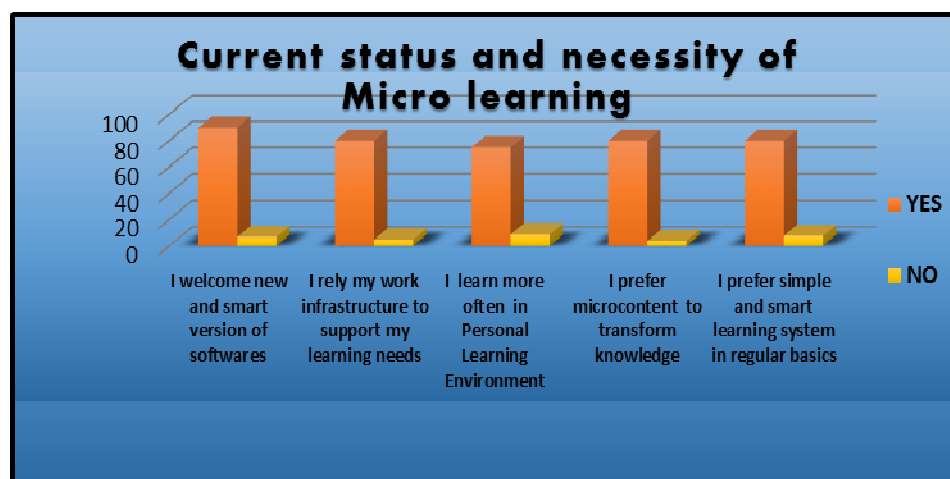


Figure 2. Current status and necessity of micro learning

To the inquiry on the current status of the learning methodology, 90% of the respondents welcomed a new and smart version of software which in turn leads to micro learning system. 80% of the respondents are currently relying on the work infrastructure to support their learning, whereas 75% of the respondents use more often PLE. 80% of the respondents are looking towards a simple and smart learning system in regular basics and microcontent to transform knowledge.

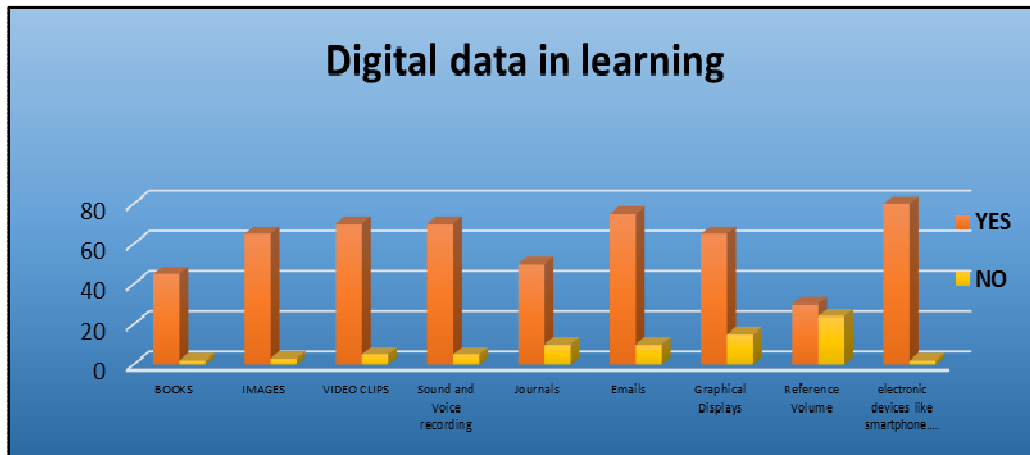


Figure 3. Impact of the Boom in digital data in learning

Figure 3 portrays the research guiding the impact of the boom in digital data in knowledge codification. The current status shows that 80% of the respondents are interested in learning via electronic devices, followed by e-mails at 75%.

72% and 70% of respondents opt for video clips and sound and voice recording. 65% of the respondents selected images followed by graphical display at 61%.

50% of the respondents selected Journals. Further observation from the figure reveals that books and reference volumes had a very insignificant impact, as expected by merely 45% and 30% of the respondents. This directed us towards the necessity for micro learning, and encourages the increase of the usage of electronic devices.

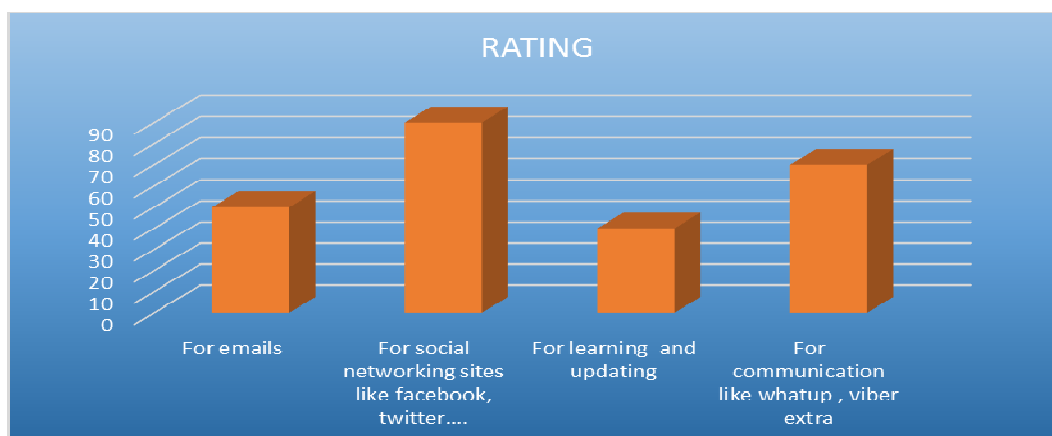


Figure 4. The purpose for using Smartphones

Figure 4 shows the purpose of using smartphones. The current status implies that a maximum number of 91% of the respondents use it for social networking. 77% of the respondents use it for communication (WhatsApp, Viber, etc.) followed by e-mails at 55%. Only 43% of the respondents use it for learning and updating (translation, dictionary, etc). Comparing figure 3 and

figure 4 the research identified the gap between electronic device which they prefer for learning and the usage of that electronic devices for learning and updating.

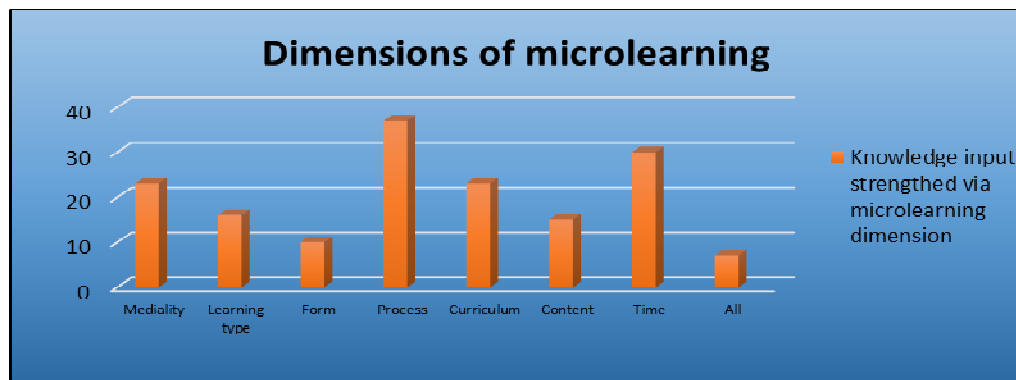


Figure 5. Microlearning dimensions

The inquiry on the different aspects of the various dimension of microlearning is reflected in figure 5. The result is obtained based on 82 respondents who were learners from different groups. 74% of the respondents consider that process to be a micro learning dimension which strengthens the knowledge input followed by time, up to 60%. The curriculum and mediality had the same 46% of the respondents. 32% and 30% of the respondents believe that the learning type and the content strengthen the knowledge input through microlearning. The lowest percentage is of 20% and 14%.

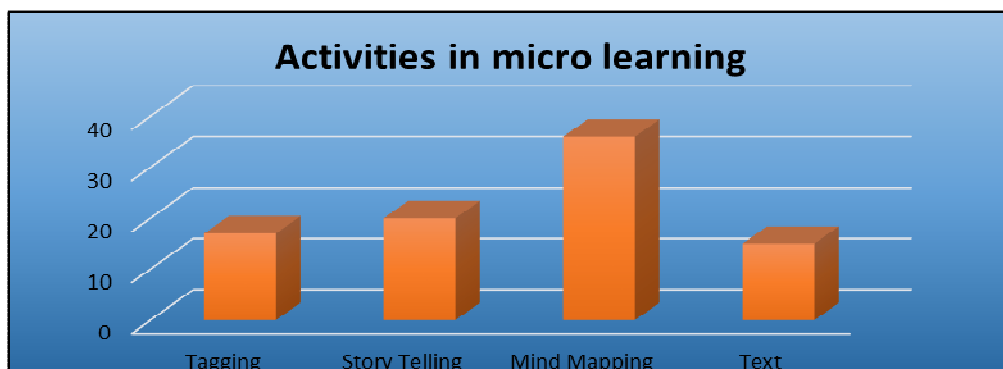


Figure 6. Activities dealing with microlearning

There are many unique activities involved in microlearning, which provides a high rate of successful knowledge transformation. To the inquiry made in research on the activities dealing with microlearning that support knowledge transformation, figure 6 shows that mind mapping has the highest view of respondents, up to 72%, the nearest to it is story telling with 50%. The variation displayed in the figure is significant. 44% of the respondents opt for tagging followed by text with 38%.

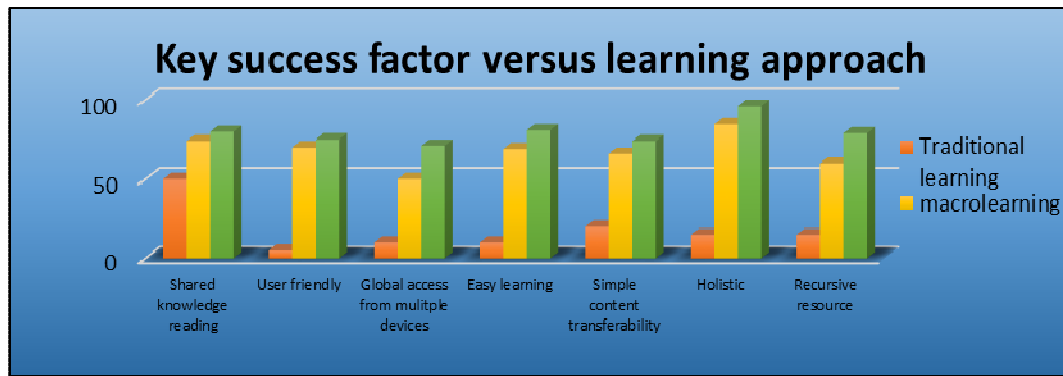


Figure 7. Comparison for identifying the success factor key versus the learning approach

To the inquiry on which type of learning approach has higher sharing knowledge reading, global access for multiple devices, simple content transferability, recursive resource, microlearning was highly welcomed. Micro learning, with a top of 82%, confirms it is holistic and user friendly, followed by macro learning. The above inquiry confirmed that the new age learners look towards a modernized and innovative learning approach rather than the traditional learning system.

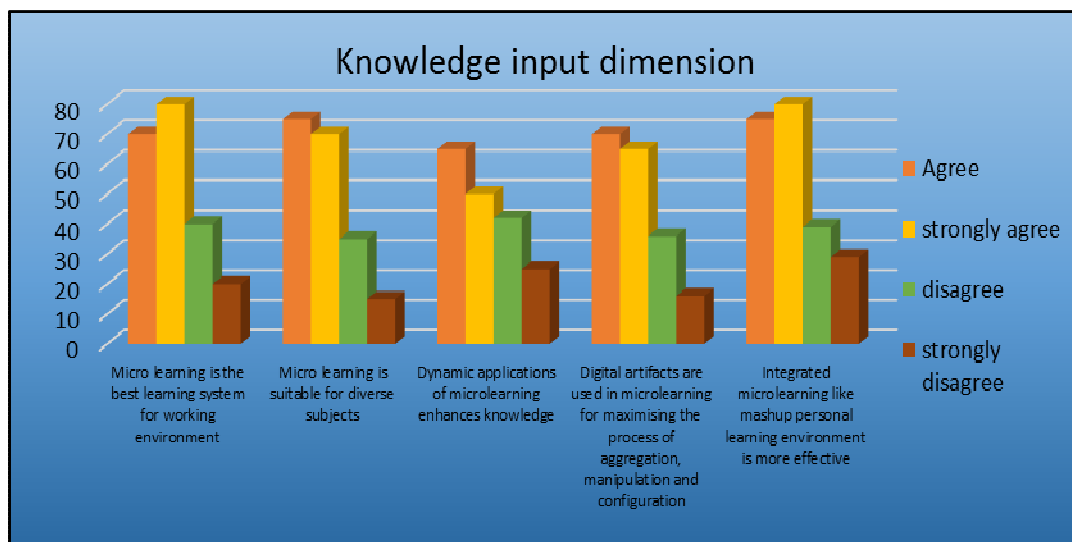


Figure 8. Knowledge input dimension of microlearning

Figure 8 portrays the research directing the studies on the knowledge input dimension of microlearning. Almost 81% of the respondents believed that microlearning is the best learning system for integrated mashup PLE, followed by 66% of the respondents whose opinion was that dynamic applications of microlearning enhances knowledge. Almost 72% of the respondents believed that microlearning is suitable for diverse subjects, whereas 67% of the respondents believed that the use of digital artifacts maximizes the process of aggregation.

6. Result and discussion

We found that micro learning concepts, based on mobile web learning, lead to a modernized education system. Microcontents are a small burst of learning objects which are informal, but enrich the knowledge input. The study basically identifies the gap between the uses of electronic devices with the micro learning. Even though more preferences were given to learning systems based on electronic devices, a lack of awareness of micro learning was identified at the initial stage. After creating awareness, the later part of the study clearly specified that micro learning is highly useful, and can be used for knowledge acquisition as well as for skill growth irrespective of diverse subjects.

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