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M³-learning - Exploring mobile multimedia microblogging learning

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Abstract

In the context in which the new frontier of Web 2.0 is marked out by the use of mobile devices anywhere, anytime, by anyone and anything, our paper aims at valorizing the mobility parameters of the Cirip.eu platform in order to integrate the microblogging technology in higher education, for the purpose of increasing knowledge and learning in authentic mobile learning environments. As an innovation for the mobile learning through microblogging, we mention the following elements:

- On a technological level: localize / join mobile groups, access content and OERs, share opinions, work collaboratively on multimedia objects, participate in polls / quizzes, receive / send updates via SMS, create / manage mobile PLEs, recover password via SMS;
- On a pedagogical level: develop multimedia educational resources / learning objects by using mobile technologies specific for different subject areas to be taught with microblogging.

Thus, the aim of our experiment is not only to provide a general overview / a framework for using microblogging through mobile technologies, but also a way to enhance teaching and learning in formal university courses and to present mobile microblogging learning benefits, opportunities, limits and risks.

Keywords: Microblogging; mobile learning; higher education

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1. INTRODUCTION

1.1. Defining m3-learning

What would have happened if, in the XIXth century, those for whom the supreme symbol of the Industrial Revolution was the railway system had been able to predict the huge impact of a more advanced technology – the automobile? How different would the XXth century have been, had we anticipated the impact of technological development? Although the beginning of the IIIrd millennium took by surprise millions of people fascinated by the Internet as the symbol of the Digital Era, the impact of a technology similar to the automobile, and probably as important, could not be overlooked and underestimated – namely the wireless communications technology.

Considered the most popular, widespread and ubiquitous (personal) communications technology on the planet [1], it includes a wide range of mobile devices/wireless terminals, starting from the already classic laptops, notebooks, PDAs, iPods, handheld, palmtops or tablet PCs to the various mobile phone models (with or without specifications such as: touchscreen, clamshell, sliding, possibility to capture images with an integrated camera, editing/sharing them, bluetooth, 3G, radio FM, music player/MP3, recording/rendering video content, Internet connexion, HTML browsers, email applications) and other intelligent devices such as the iPhone, iPad. Used generally for booking tickets, travels, restaurants, banking operations, stock market transactions, listening/downloading music, accessing information about the weather forecast and sports etc., mobile devices create challenging opportunities for learning, defined as mobile education or mobile learning or m-learning.

M-learning implies flexible and collaborative learning modalities, *anywhere and anytime*, at the same time ensuring close relationships between learning in the workplace, at home, at school and/or in a community by *anyone* on *any* subject (the Tim Kelly's 4A vision: "anywhere, anytime, by anyone and anything" [2]). In the context of m-learning, the facilitation and the pedagogical design input of the teacher are critical [3] "**M-learning**, being the digital support of adaptive, investigative, communicative, collaborative, and productive learning activities in remote locations, proposes a wide variety of environments in which the teacher can operate".

M-learning does not represent an expensive process, neither a complex one from a technological point of view, so that installing a wireless network in a higher education institution can be considered a normal extension of the educational system and an instructional one in the continuing formation segment [4]. However, statistics [5] indicate that for most of the European countries and the United States (except South Korea and Japan) m-learning does not represent yet one of the educational methods currently used in formal education, but in the same time that a 94% rate of 21st century college students have a mobile phone, their favourite communication method being text messaging or IM [6].

This type of learning can be though used successfully by associating instant messaging with the SMS and the characteristics of social networking applications, which developed rapidly into *microblogging applications*. Whatever platform we use (Twitter, Plurk, Edmodo, Jaiku, Identi.ca,

FriendFeed, Cirip and to some extent Tumblr, Posterous or Facebook), we're witnessing a new paradigm blooming / expanding in the hands of our students [7], „the generation that has not known life without mobile phone” [8].

While in recent studies [9] it appears that few academic institutions in the world have adopted widespread m-learning technologies, there is evidence that **m³-learning - mobile multimedia microblogging learning** - happens, becoming a reality in university settings [10], providing a fast, mobile and more flexible possibility of communication, information management and networking [11] between teachers, students and faculty staff, both for teaching and learning, in 140 characters or less [12].

Despite this global need to engage articulated naturalness (AN) or augmented reality (AR) as “the new frontiers of Mobile 2.0” [13], the use of mobile micro-technologies are, undoubtedly, the next strand of integration within educational practices, in developing new ways of teaching and learning.

In this context, our paper aims at integrating microblogging in higher education by valorizing the mobility parameters of the Cirip.eu platform for the purpose of increasing knowledge and learning in authentic environments. Thus, the purpose of our experiment is not only to provide a general overview / a framework for using microblogging through mobile technologies, but also a way to enhance teaching and learning in formal university courses. The paper focuses on the following two questions:

- „What are the mobile technology affordances for teaching/learning with this platform in HE?”
- „What are the pedagogical uses of m³-learning on the Cirip microblogging platform?”

1.2. M³-learning features of the microblogging platform Cirip.eu

Cirip.eu, a microblogging platform designed for education and business, was launched in the spring of 2008, by Timsoft, a company specialized in eLearning and mobile applications, under the coordination of the first author. Besides the characteristics of a microblogging platform, Cirip.eu provides the following [14]:

- *Embedding multimedia objects in notes:* images, audio and (live) video clips, live-streaming, presentations, files, google docs and forms, cognitive visualizations as diagrams, learning designs as mindmaps etc.
- *Sending and receiving messages* via the web, mobile, SMS, IM (Yahoo and Jabber), e-mail, Firefox/Chrome extensions, API, Twitter, RSS, desktop and other 3rd party applications, etc.- see Figure 1.
- *Creating public or private user groups.* Collaboration groups can be created between the participants in an event, members of a class or university year, for a course enhancement or in order to run an entire online course. Groups have an announcements section (*Group News*), where moderators can post notes and materials such as SCORM/LOM objects, for group activities.
- *Domain specification for microblogs and groups.* This simplifies the search for microblogs or groups of a certain domain, for example educational microblogs or groups used for online

courses or workshops.

- *Monitoring RSS feeds* for sites, blogs, social networks or search feeds.
- *Tagging* the content.
- *Creating and conducting polls and quizzes* (which can be answered online or by SMS).
- *Visualizing statistics and representations of the users/groups interaction networks*.

The interface is provided in Romanian, English and German, facilitating an international collaboration, around 8% of the 20000 users being foreigners.

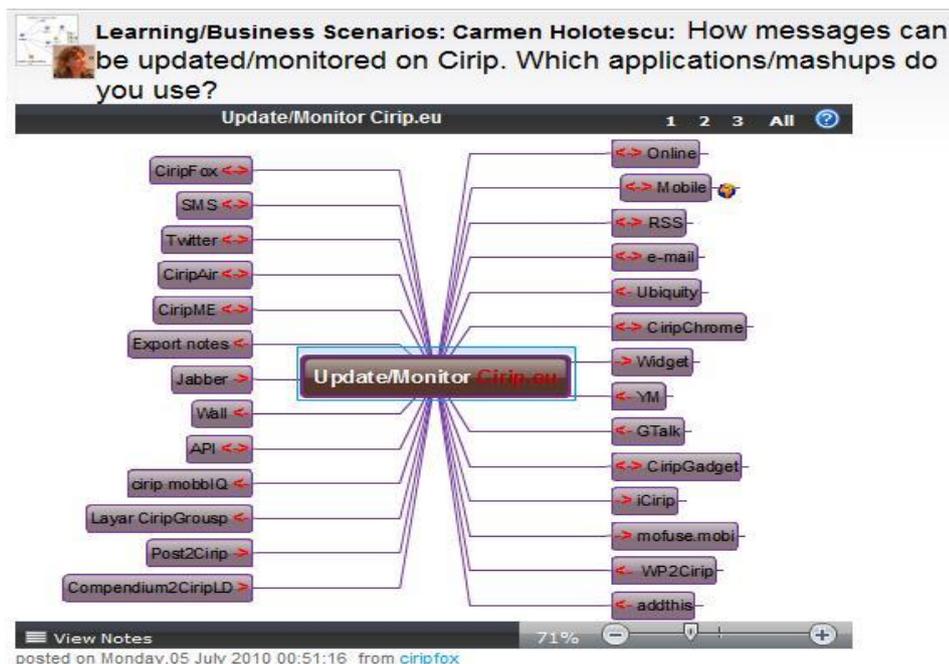


Fig. 1. Accessing the microblogging Cirip platform through a variety of applications/devices

Cirip.eu integrates a wide range of Web2.0 applications and social networks organized around educational resources, many of them in Top 100 Tools for Learning 2009, compiled by Jane Hart from Centre for Learning & Performance Technologies. The Cirip.eu platform also features in this top.

The integration of Web2.0 applications and social networks is realized in order to encourage, organize and simplify their usage by the members (teachers, trainers, students and other learners); we can say Cirip.eu offers an openness to OERs (Open Educational Resources). Thus, the multimedia objects become part of the conversation/communication flow of the platform, and of the members' microblogs/portfolios.

The educational uses of the platform, such as *online courses, courses enhancement, project management, events, workshops* were presented in previous articles [14], [15].

The Cirip specific features for m³-learning are presented in the following framework, which extends the Patten, Sanchez and Tangney classification [16]:

Table 1. m³-learning framework

Category	Cirip specific mobile features
<i>Administration</i>	<ul style="list-style-type: none"> • joining groups can be realized by using a mobile browser, the mobile version m.Cirip.eu or via SMS; • mobile number or username can be issued for authentication • recover password via SMS; • after sending a SMS with the group name and a keyword, the learners receive a response via SMS with courses or exams schedules, or their grades;
<i>Reference</i>	<ul style="list-style-type: none"> • using a mobile browser, students can access course materials published as RSS-LOM objects in the group space; • also they can access multimedia resources (open educational resources) embedded in messages;
<i>Interaction</i>	<ul style="list-style-type: none"> • students share and ask opinions from peers or others by using a mobile browser or via SMS; • students can follow users, groups and feeds via free SMS; they can specify the time interval for SMS delivering, also when these alerts should be stopped or restarted, by texting <i>cirip on/off</i>; • during the f2f courses and activities, if teachers agree, students can send SMS including questions, comments in groups, for future reflections; also their observations during activities outside universities; • send feedback / comments / questions via SMS to dedicated groups, during workshops or conferences; • participate via SMS in polls and quizzes operated during courses or events;
<i>Multimedia Collaboration</i>	<ul style="list-style-type: none"> • create collaborative multimedia objects in groups dedicated to courses or to teamwork; • comment videos by sending SMS in courses/teams groups; the messages are exported as a .srt file and used to subtitle the video; • send images, (live) video / audio clips during events, activities
<i>Meta-Collaboration</i>	<ul style="list-style-type: none"> • by communicating with members and groups, in a continuous evaluation process, integrating (search) feeds and collaborative activities/resources from other social networks, members can build and manage mobile Personal Learning Environments; • scenarios for teaching and learning represented as mindmaps are discussed/improved by using a mobile browser, in a group dedicated to learning designs;
<i>Localization</i>	<ul style="list-style-type: none"> • using a Cirip mash-up implemented on the augmented reality browser Layar, one can geo-locate, find information and join different groups; the mash-up is important especially for finding groups for workshops, events, trainings, being a valuable facility for educational marketing;
<i>Facilitation</i>	<ul style="list-style-type: none"> • groups moderators can send alerts via SMS to groups members, announcing news or updates with a high priority; • by following users, groups and feeds via SMS, teachers / trainers receives updates related to courses in real-time; thus they can participate in discussions, give feedback via SMS, being present even when they don't have access to internet; • groups moderators can create dynamic responses to administrative aspects asked by members via SMS (see <i>Administration</i>), by connecting keywords with specific actions.

1.3. Pedagogical uses of m³-learning with Cirip

Over the last three years the authors have run different courses with students enrolled in several years and forms of study, covering a variety of profiles and specializations, from three universities from Timisoara, Romania: University of the West, Politehnica University, and University Ion Slavici. The courses were hosted in private, blended-mannered groups on the platform.

In order to gather the students' feedback for identifying a number of aspects regarding the use of microblogging in their mobile learning experience, we asked master students to engage in the following activities:

- create a mobile digital narrative using a social media application at their own choice;
- collect digital media (pictures / videos / audio) and post them on the platform;
- create a digital story collaboratively;
- live stream from different events (academic, scientific, theatre festivals, concerts etc.).



Fig. 2. (a) Accessing Cirip through a mobile device: m.cirip.ro (b) Quiz for participants at the end of the course, <http://www.cirip.ro/sondaj/435>

After the course evaluation, students were asked to answer some questions in a survey posted on the platform regarding the benefits and disadvantages noticed during this experiment.

Table 2. A preliminary feedback from the students

Advantages	<ul style="list-style-type: none"> • <i>Accesibility</i>: access to information is available anywhere (irrespective of location), where there are no schools, teachers, or libraries. • <i>Flexibility</i>: <ul style="list-style-type: none"> – for the learning services market for persons who don't have access to the computational infrastructure (accessibility to the internet and e-learning is not widely spread in rural or distant areas); – the learning services market for persons whose jobs require permanent move or students who need individualized education. • <i>Audience (mobility)</i>: reaches all students, anytime.
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	<ul style="list-style-type: none"> • <i>Monitoring</i> mechanisms and personal messages received entirely. • <i>Long-lasting interaction</i> for multiple purposes.
Limitations	<ul style="list-style-type: none"> • Except for SMS following, most of the mobile functions on Cirip are <i>underexploited</i> by the community members. • Content development for all types of mobile terminals can be <i>difficult</i>.
Risks	<ul style="list-style-type: none"> • Technology might <i>not function</i> for the aimed purpose or might not respond to the learning needs. • Encouraging <i>incorrect SMS-like</i> writing. • Students might need <i>additional training</i> actions in order to use efficiently the microblogging technology with the help of mobile devices.

3. CONCLUSIONS

Defining a mobile pedagogy for the Cirip.eu microblogging platform led us to emphasize those characteristics that place the m³ aspects of Cirip within informal, rather than formal learning. Thus, some of these attributes, that altered the educational practices during the formal courses facilitated by the authors on Cirip by using mobile technologies, are:

4. *Communication with members and tutors took place in a notational form*, by using text messages. Capture, storage and research of information in multimedia format was also a process resulting from the convergence of Cirip microblogging facilities, students' learning skills and their social interaction [17].
5. *Learning was personalized*. It facilitated those individual and collaborative learning experiences, which allowed students the freedom to choose those social media applications they used during their courses.
6. *Collaboration through SMS messages led to connected classroom learning*. Thus, following certain users / groups supported collaborative learning even outside the course.
7. Creating extended opportunities for *direct learning*. For example, supporting alphabetization for less digital competent students, but also learning of foreign languages, English and Spanish particularly, following the integration within courses of the informational flux of the Conference on personal learning environments in Barcelona, in July 2010, <http://pleconference.citilab.eu>.
8. *Psychological Comfort / A good motivation*. Mobile multimedia resources may make learning funny (individual lack of motivation should be however avoided because, in this case, students might feel discouraged especially if they don't have access to advanced mobile devices).
9. It allowed for *learning methods based on social media* (Flickr, YouTube/Vimeo, SpicyNodes, Voicethread, Prezi, Vocaroo, Google Docs etc.) and peer-to-peer support (meaningful content to help / create innovation).
10. *Development of mportfolios* for acquiring knowledge and skills (mobile abilities), necessary for acceding on a mobility-dominated job market.

Although *the learning evaluation may be immediate and autonomous*, one weakness encountered by the authors during courses was the lack of *a clear evaluation criteria for assessment*. This happened mainly because this was a first attempt at using mobile microblogging during formal

courses and the aim was not to measure mobile aspects of learning, but to promote it within groups and between individuals [18].

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