



M-Learning and U-Learning: Twitter in the European Higher Education Area

Esteban Vázquez Cano

Spanish National University of Distance Education (Spain)

evazquez@edu.uned.es

1. Introduction

Using mobile technology for teaching and learning is a rapidly evolving area of educational research (Preece, 2000; Vavoula, Pachler & Kukulska-Hulme, 2010). The development of modern mobile communication equipment introduces new learning media and tools that, when combined with earlier theories and paradigms, accelerate the change of learning concepts that provide new modes of interactive learning. Twitter is a popular 'micro blogging' service which is used by millions of people around the world. It allows the user to post online a short item. Each post is known as a "tweet" and cannot exceed 140 characters. All the posts made by a user are displayed on their "Twitter feed" which is a webpage that can be accessed, if it is made public, by anyone, regardless of whether they have a Twitter account or not. Students, analyzed in this research, that use Twitter report that is an easy way of keeping the university community updated with short pieces of information. Because Twitter is accessed in different platforms from mobile devices such as smartphones to pc or tablets, etc., it means they can receive information any time and any place. The majority of EU households have access to a telephone (98%), and there are more people with access to a mobile phone (89%) than to a landline (71%). (Special Eurobarometer 362-European commission, 2011). The advantage of using a tool like Twitter in smartphones for education is that it is instantaneous, cheap and universal. Twitter and social media in general can be a surprisingly useful educational tool for the development of learning processes and, in addition, an instrument of university organization that can replace many tools already in use, such as mailing lists or bulletin boards. Twitter can help to change the way in which students send and receive tasks and interact with teachers and partners.

2. M-Learning: Twitter

There is an increasing amount of mobile learning research focusing on feasibility combined with data on user experience (Dearnley, Haigh & Fairhall, 2008; Shim & Viswanathan, 2007; Triantafillou, Georgiadou & Economides, 2008). These studies outline the type of infrastructure used to support mobile learning (M-Learning), the issues encountered when testing systems and report positive user experiences of the use of mobile technology for learning and workload management. The existence of nearly 2.7 billion active mobile phones worldwide dramatically illustrates the huge potential for M-Learning market and education. Today, although it could sound really futuristic, augmented reality is a reality: there are already on the market about 91 million smartphones with ability to develop and speak the most optimistic forecasts of 197 million people using these applications in 2012. Augmented reality requires: devices such as Tablet, E-Reader or Smartphone, Xbox, PlayStation, Wii, Blu-Ray or DVD and information superimposed and must contain an operating system, IOS, Android or Symbian, 3G-4G connectivity, a camera, etc. Although the benefits of using this type of learning have been highlighted by numerous authors, it is increasingly difficult to locate the M-Learning within the constraints of formal education. Thus, the M-Learning has different shapes drawn on a number of different theories and teaching methods. From this point of view, it is difficult to specify a single rational, as several authors develop different methodological insights and practical applications that are included under the term (Frohberg, Goth & Schwabe, 2009; Buchem, Camacho, 2011). Thus we can speak of M-Learning for content distribution (Muyinda, Lubega & Lynch, 2010), as a facilitator of reflective processes. As a basis for developing and deploying mobile games based on learning. Authors such as Cochrane and Bateman, 2010 speak of a Mobile Web 2.0, although it should highlight and emphasize the benefits of mobile learning is given by the portability, flexibility and context of mobile technologies allowing learning, promote collaboration and encourage independent learning for life (Dyson et al, 2009; Traxler, 2009).

3. Method

The research investigated the use of Twitter on learning as a virtual tool used by 25 students studying Primary Education Degree at the University of Castilla-La Mancha (Spain), between 2010 and 2011. Case-study methods were used to conduct the research. The study was designed, therefore, as a holistic case study with embedded cases (Yin, 2006). The holistic case is about the experiences of 25 students teachers enrolled in a specific online ICT development program. The embedded cases are sub-cases which contribute to a more comprehensive understanding of an issue or condition. The first level of embedded cases in this study comprises eighteen of the twenty five students and these subcases enable an in-depth analysis of the activities within the online learning environment. The second level of embedded cases comprises a nested group of ten students within their practice season in schools; these ten students add depth to the study by including data from their school communities of practice. This nested design, with embedded case studies, enables a deeper level of analysis than is possible across the holistic case. All 25 students contributed to an overall understanding of how students learn with Twitter since M-Learning and U-Learning principles, and where they situate their learning as they engage in online educational development. The purpose of the embedded cases was not to condense students' experiences into a



homogenous explanation, but rather to identify and illustrate the various experiences, issues, dilemmas, and impacts that contribute in some way to students' educational learning in, and between, communities. Thirty interviews were conducted with 25 students to provide in-depth perspectives about online study. In addition, all available online activity records drawn from Twitter's contributions were analyzed for these students to provide a measure of their online engagement and progress. These data sources were complemented with examples of online course participation (forum postings, peer review comments, shared documents, and activities) and assignments; and for the nested subset of students, interviews were conducted with 11 school peers to obtain an external perspective from close-at-hand colleagues who were not studying in the online courses.

3.1. Participants

The research focused on the perspectives of students who were motivated to learn about ICT using Twitter as an m-learning activity, through ICT-mediated learning. They were learning about the pedagogical use of ICT while learning with and through ICT, which added a further dimension to the overlapping environments of work (community of professional practice) and study (professional learning community). The research also investigated the diffusion of students' learning experiences beyond their own classrooms into their schools and professional communities where they develop their teacher's training. Some participants were responsible for leading and supporting Twitter integration amongst their colleagues, thus creating potential for their professional learning to produce benefits beyond their own immediate practice. Participants were studying and develop their training in early childhood (8), primary (17) education.

4. Findings

Participants established that there are some competencies, abilities, and skills required to thrive Twitter in a complex learning environment. People need the critical ability to not only use network resources, but also to look at them critically in order to "appropriate them and redesign them," as one of the learners stressed. In the following table we can see the results of Twitter as ICT resource according to the results obtained in the research:

Table 1: Twitter as an educational tool in EHEA

<i>Advantages using Twitter</i>	<i>Yes</i>	<i>No</i>
<i>Writing skills</i>	69%	13%
<i>Enable interactions</i>	63%	18%
<i>Verbal Communications</i>	79%	12%
<i>Skills</i>		
<i>Working groups</i>	88%	17%
<i>Creative thinking schools</i>	87%	13%
<i>Problem solving</i>	64%	15%
<i>Presentation skills</i>	77%	14%
<i>Time management</i>	69%	18%

5. Conclusions

From observations on Twitter activities, it seems that for networked learning to be successful, people need to have the ability to direct their own learning and to have a level of critical literacies that will ensure they are confident at negotiating the Web in order to engage, participate, and get involved with learning activities. People also have to be confident and competent in using the different tools in order to engage in meaningful interaction. It takes time for people to feel competent and comfortable to learn in an autonomous fashion, and there are critical literacies, such as collaboration, creativity, and a flexible mindset, that are prerequisites for active learning in a changing and complex learning environment without the provision of too much organized guidance by facilitators. The research showed that there are some other conditions that clearly encouraged people's involvement and engagement in learning in a connectivist learning environment, including the "social presence" of the facilitators and of participants, which enhanced the "community" forming and the sense of belonging that built confidence and stimulated active participation. It became clear during the research that Twitter is a powerful resource in all subjects to develops aggregation, relation, creation, and sharing and mostly felt happy to aggregate, relate, and share resources through Twitter. Further research and analysis will be conducted to find out if this "creation" stage is really necessary to enhance learning in a connectivist learning environment and exactly how the challenges identified with connectivist learning might best be overcome.

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