



Using Mobile Devices In E-Learning Programms

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Abstract

As a part of a larger study started in September 2010, a research project aiming at exploring initiatives related to the influence of mobile devices in educational contexts was proposed. In the first stage of this research, different experiences in the context of mobile learning, and more specifically on eLearning environments will be approached and studied. In order to understand better the state of the art of mobile learning and also to achieve the research objectives, a methodological framework was designed to deepen into the contextual field. This article will describe the main objectives of the work, the methodological framework, and also the general context of the participants of this study. The main objective of the general research is to analyse the usage and perception of ICT in different contexts of a group of master degree and postgraduate programme students. After the immersion of these students in an online environment, using the iPad device (Apple Inc. Tablet Computer), the research team will explain the results of this learning process. The final communication intends to present results focused on early indicators applied before the learning action and some other experiences actually evidenced. For the next stages of the project, the research team is actually working on the triangulation of results obtained from three different data collection techniques.

1. Introduction

The growth of the mobile technologies on a global scale, obvious from the appearance of a variety of new devices on the market, increases the need to create appropriate methods of research to understand the state of play and to design possible applications for education.

This paper is part of a wider project, in which, through a triangulated approach incorporating observations, questionnaires, and in-depth interviews, the research team is investigating how Master's students use mobile technologies, and how their use of them relates to their perception of them as learning tools.

This study examines different educational experiences that have used mobile-learning, and attempts to describe the state of the art of mobile technologies in terms of educational provision.

The next three sections will describe: the concept of mobile learning, and includes some specific examples and possible future trends, the methodological framework of the investigation and also some of the preliminary results from the first stage of investigation and its conclusions.

2. Mobile Learning trends

A number of educational experiences, specifically in universities, have been documented and analysed with the aim of developing methodological strategies to aid the design, development, and evaluation of learning strategies.

2.1 From e-learning to m-learning

Many authors have researched both of the above concepts, looking at how they have evolved, and comparing and contrasting the nature of the two.

Louris and Etekleous (2005) [1] claim that as interest in mobile learning grows, the term is increasingly interpreted in different ways, depending on the theoretical view of the speaker or the context in question. Similarly they suggest that learning has always had a "mobile" character, and therefore there



is a need to establish a difference between what is called “mobile learning” nowadays, and how it was regarded traditionally.

Other authors such as Ramírez (2009) [2], so as to explain the use of educational strategies which include mobile technology, review the opinions associated with the evolution and definition of m-learning. Ramírez emphasizes the importance of this type of learning if we are to take advantage of modern technology so as to create a more efficient learning experience.

Sharples, Arnedillo-Sánchez, Milrad and Vavoula (2009) [3] highlight the importance of the context of m-learning, in terms of how learners relate and interact with their environment. For these authors, learning occurs in different places - including the classroom – but they explain how it is altered and shaped by several factors: the learning space, the time period, the themes which are dealt with and the technology it utilizes. From this position, mobile learning can be understood as an evolution of e-learning.

The evolution of mobile learning will be based on a fundamental aspect of it that separates it from e-learning. Sharples, Arnedillo-Sánchez, Milrad and Vavoula (2009) [3] believe that the interactive element of these technologies functions like a bridge for learning. Through discussion, learners will be able to create communities that can interact and this will therefore promote the learning process by means of collaboration. These authors identify “context” and “interaction” as being essential to understand how mobile learning can be integrated into conventional education.

From our point of view, mobile learning has come into existence when Web 2.0, defined by the possibility of social interaction and networking, is in its prime. The ubiquity of the internet enables interaction, the sharing of information, collaborative projects, and new content creation.

Finally, m – learning can be seen as the evolution of e-learning in terms of the pedagogic possibilities that mobile devices offer, understanding that these dimensions, context and interaction, are fundamental factors to extend learning throughout life.

2.2 Some previous studies

Mobile devices have been used in many educational environments, and while it is not in the scope of this study to explain all of these, it is useful to consider some instances.

On a European level, Sharples, Meek, Lonsdale, Rudman and Vavoula (2007) [4] report the results of a successful project in which schools and museums used a combination of mobile phones and online support to deliver their learning objectives.

The Horizon report of 2011, conducted by The New Consortium and EDUCASE [5], details a number of projects in which mobile technologies are included in different educational environments. First of all they examine mobile phones, and how these devices allow constant access to information, social networks, learning tools, etc. The report lists a number of possible applications of the technology, created by and for universities, to teach chemistry, history and journalism,. Also they give examples of how the iPad has been used at Oxford University, as well as in other universities such as Long Island University in Brooklyn and the University of Ball State.

The same team, The New Media Consortium, in conjunction with the Universitat Oberta of Catalunya [6], review some of the projects that are carried out throughout Latin-American, including: The Mobile Campus Project (Proyecto Campus Móvil), Mobile Learning at the School of Industrial Organization (Mobile Learning de la Escuela de Organización Industrial). The Trinity College – The University of Melbourne, has also begun a project, which bears some similarities to this one, in which the researchers, after conducting preliminary investigation and a pilot study, devised questionnaires and interviews for university students and their use of mobile technology, mostly tablets. The results of this study were published in a report by Jennings, Anderson, Dorset and Mitchell (2010) [7].

Following this line of enquiry, it is necessary to reflect on the possible trends of mobile learning, taking into account the current situation, as well as the notion that this technology, already a part of all areas of our lives, evolves rapidly.

3. Methodological proposal

This investigation by the Laboratory of Interactive Media (LMI) of the University of Barcelona is an attempt to analyze a Mobile Learning experience created by the IL3 (LifeLong Learning Institute of the University of Barcelona). The IL3 have introduced elearning through mobile devices, giving an iPad



(the Tablet PC made by Apple) to 97 students on two master's degree courses, who in the course of the academic year will use this mobile technology as part of a traditional e-learning environment. In order to learn how the participants use the device, and what they think about mobile technology in general, especially online learning, three methods were identified. These three will be triangulated in order analyzed the data collected.

3.1 Pre-test/post-test questionnaire

Before the course began, and before the Ipads were distributed to the students, an online survey was used to collect data, and a second one (with some changes) will be conducted at the end of the course.

Igartúa & Humanize (2004) describe the survey as a tool commonly used to study opinions, attitudes and other information, which are subjective in character. Taking into consideration this definition and the objective of the investigation, a questionnaire has been designed, based on recognized models, with the aim to be as comprehensive as possible in answering questions regarding the use and the perception of technology and mobile devices.

Some results have been obtained about the use the pupils make of the mobile devices for personal, professional and educational reasons, and of how they use the internet and what they think of it.

3.2 Discussion forums

An interactive and dynamic forum will be used as part of the study from the second phase onwards. The forum makes it possible to get closer to the students since it enables direct and active observation of their participations and activities.

The analysis of the interventions has been defined through the construction of categories, allowing to establish the relationships between different strategies.

3.3 The interview

In-depth interviews will be used, with the intention of obtaining precise information about the pupils' experiences of using mobile devices, especially the iPad in their online education, and in their professional and personal life.

The in-depth interview, as Merton and Kendall (1946) [8] note, is an attempt to record the views of people who have been exposed to situations previously analyzed by the researcher, as is the case in this study.

The interviews are semi-structured in nature, working from an interview guide, which was drafted with the categories used in the previous stages of the study firmly in mind, in order to allow the triangulation process to be carried out.

4. Some initial results

Analyses of the pre-test questionnaire has enabled the investigation team to obtain information about the use of ICT (Information and Communication Technologies) and Internet by the postgraduate students, and what these participants thought about them before the course began.

Regarding electronic devices, a large number of participants reported using desktop and laptop computers, as well as mobile telephones, more than other devices such as PDAs, Netbooks, ebooks, etc. The results show that all the students have internet access at home, and that most remain connected between 3 and 8 hours per day. They spend their time online for various reasons, but mainly in order to search for information, check email, and to social networking.

One finding which may be of interest is that the internet is rarely used by the participants as a collaborative tool. This is one of the fundamental characteristics of m-learning, which is based on constant accessibility to the materials, and the possibility of interaction.

In reporting their perceptions of the internet and technology in general, the majority of the participants' replies suggested that they thought that the internet is an indispensable tool, and consider it useful for communication, learning and work.



Finally, mobile devices are characterized as a useful tool for searching for information, with the advantage of one's location being of no importance; they allow to be contactable, or to work, at any time in any place.

These results will be analyzed more thoroughly and compared with the information collected in the following phases of the project.

Although many learning initiatives agree that mobile technologies are extremely useful, it is necessary to constantly review how these technologies are being used in education, and how they affect provision. Such reviews allow for the dissemination of good practice, and the creation of a dialog which allows providers to make the most of what technology has to offer.

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