

Mobile Learning: New Frontier for Teaching

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ABSTRACT

The growing centrality of multimedia content, their digitization as well as flexibility and personalization are leading to new trend for distance learning. In this scenario, with the rapid spread of mobile devices, among which the smartphone prevails, it has been possible to meet the needs of users with a paradigm that envisages the "learning on the move" process. In this article a case study is reported regarding mobile platforms oracle i-learning, claroline and ilias considering the modalities of content delivery, user-based monitoring as well as evaluation techniques in order to better manage interactive online courses, which make the web user active participant of the production process.

KEYWORDS

platform, questionnaire, learning, monitoring, interoperability.

1 INTRODUCTION

In recent years there has been a real and wide-scale spread of mobile devices, such as mobile phones, PDA, pocket PC, ebook, tablet PC, smartphones, TV-phone, ipod, ipad, and other portable devices, which from simple objects personal devices are becoming devices suitable for displaying multimedia contents, ensuring extreme temporal and spatial flexibility. A new way of delivering training, a new frontier for e-learning: mobile learning [1], [2], [3], [4], [5], [6], [7], [8], [9], [10], [12], [13], [14], [18], [19], [21], [23], [26], [27], [28]. Users move from simple users to content producers, designed, modified or simply shared [10], [11], [20], [22]. Today there is a strong demand for immediately usable contents, easily assimilated and oriented to immediate application, structured as a set of modular multimedia, interactive and multisensory teaching objects [16], [17]. In this context, a case study was initiated and the

experimental results achieved together with the conclusions and future developments reported.

2 CASE STUDY

In the field of mobile learning, a study was launched that takes into consideration the analysis as well as the modular integration of oracle i-Learning, claroline and ilias platforms on four different mobile operating systems such as Android, iPhone OS, symbian, windows mobile, to encourage communication through services [2], [16], [17]. The mobile learning area is accessed through an application created specifically and which brings important features such as the vision of educational material and other content, tested on emulators and on real devices. The prototype examined is the oracle i-learning mobile platform, claroline mobile, ilias mobile of which the screenshots are shown (Fig.1):



Figure 1. Oracle iLearning – Claroline – Ilias mobile platforms screening

The user interface was very intuitive. The problems that have arisen have concerned: Which teaching and communication models are more effective? Which technological solutions can favor a wide participation of the users? Based on these questions, evaluation sessions were carried out as well as simulations with real users of the prototypes created. Interest has focused on a particular subset of applications in which the cellular device has been used to increase and improve communication.

3 EXPERIMENTAL RESULTS

During the simulations the students involved were submitted to observations and then interviewed by means of questionnaires (Fig.2) to test their opinions.

<u>Test new mobile learning technologies</u>	Yes	Little	No
Mobile technology has supported you during the learning stage.....?	1	2	3
Use of mobile technology can make learning more interesting.....?	1	2	3

Figure 2. Questionnaire on mobile learning technologies

The research was carried out at the Intelligent Systems laboratory and involved 80 students between the ages of 19 and 21 of computer science degree course, who were asked to comment on how m-learning supported during the learning phase as well as arousing their interest.

The students have shown themselves to like experimentation, even when technical problems have prevented the perfect functioning, even if only some of functionalities have been found to correspond to collaborative level that is access and consultation.

The following is a graphical representation of questionnaire conducted (Fig.3):

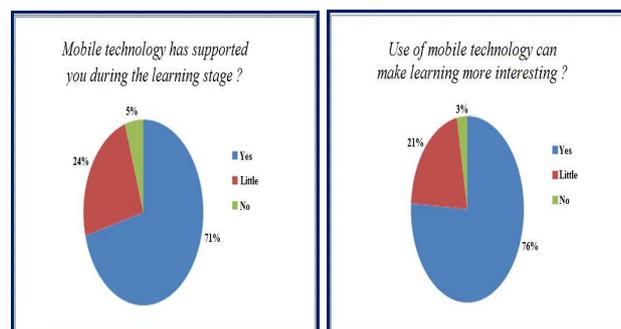


Figure 3. Users questionnaire results in mobile learning

The results presented, for the first question, found that 71% of students said that mobile technologies supported him adequately during the learning phase. For 24%, the technologies did not support the learner during the learning phases. While 5% say it has received no support from use of new technologies. For second question, 76% say that mobile devices make learning phase more interesting. For 21% the use generates little interest, while for 3% does not originate involvement. To the question of what you want to receive from your *mobile device*, the most common answer was to get new information. While the question of what a *mobile device* can offer you, 90% of users responded by learning more and learning better.

Ultimately, positive results were achieved in terms of satisfaction, acquisition of knowledge and changes in performance on the part of those who participated. It is essential that the learner can access a flexible learning strategy, and that all learning resources are available at any time and in different types of support, to allow users access to information according to their preferences and needs [6], [16], [24], [25]. The data show a wide availability of information technology and a significant predisposition towards the use of mobile devices. The mobile device learning experience shows that about 95% have positively evaluated the teaching method and about 90% want to continue studying through the mobile phone. The goal was to create a flexible learning model, which makes access to information possible with any type of device and produces flexible materials taken from different situations [4], [15], [17]. The criticalities detected are small size of screen, which do not allow you to view a large amount of content but only essential concepts, the difficulties of interoperability between different

devices and the connectivity was a bit fragmented.

4 CONCLUSIONS AND FUTURE DEVELOPMENTS

Concluding the widespread large-scale deployment of mobile devices, such as mobile phones, PDA, pocket PC, ebook, tablet PC, smartphones, TV-phones, ipod, ipad, and other portable devices along with the availability of mobile broadband connections brings new trend in development of training content or so-called “mobility learning”. A new frontier for e-learning: mobile learning. In this context, a study was carried out among students regarding mobile platforms oracles, claroline and ilias tested on four different mobile operating systems such as android, iPhone OS, symbian, mobile windows considering the modalities of content delivery, user-based monitoring as well as evaluation in order to better manage interactive online courses, which make the web user an active participant in the production process. The results obtained were positive in terms of satisfaction, acquisition of knowledge and changes in performance on the part of those who participated. Ultimately it is essential that the learner can access a flexible learning strategy, and that all teaching resources are available at any time and in different types of support. The critical issues are related to the interoperability between the different devices and in this they are carrying out further studies, in particular having “responsive” devices with a “bite-sized” mode for administration. Ultimately we can state that m-learning is proposed as *bridging* between the emerging needs of digital natives and training outcomes.

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