“M-Learning Not an Extension of E-Learning:”
Based on a Case Study of Moodle VLE

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ABSTRACT
In this paper, the authors present work that was carried out to develop an m-learning extension to a Moodle based VLE at the University of Colombo School of Computing (UCSC) and its initial evaluation. They believed this new development could bring a value added service to learners and describe how mobile browsing, mobile applications and Short Message Service (SMS) were used to access learning resources and activities to interact with other users who were facilitating or following on-line courses. However, in their investigation, the authors discovered that m-learning cannot be promoted as a value added service for the current e-Learning based framework. Learners do not receive a significant benefit compared to the cost they incur to interact with the learning service. Both pedagogy and technical infrastructure must be considered together, not as an extension of existing services but to provide a new learning service for m-learning.

Keywords: E-Learning, Learning, M-Learning, Moodle, Pedagogy, Virtual Learning Environment (VLE)

INTRODUCTION
Information Communication Technology (ICT) based techniques can be effectively used in the learning and training process as they minimize the limitations of time, location and pace. This was the main reason for e-Learning to become a popular alternative for traditional face to face (f2f) learning during the last decade. In the f2f learning environment, teachers, learners and resources are connected within a small physical space. e-Learning enables distance learning by making use of Web/Internet based technologies to provide a more flexible and convenient learning environment.

During the last few years, with advances in mobile technologies and devices such as smart phones and pocket PCs, the e-learning trend is mixed and enhanced with m-learning alternatives. Hence, it is sometimes difficult to understand whether a particular service is based on e-Learning or m-learning. Unfortunately, some initiatives promote e-learning as m-learning when the learning takes place through mobile
devices. For example, “Mobitel m-learning” (http://www.mobitel.lk/training-ml) is a highly publicized m-learning initiative in Sri Lanka (GSMA, 2010). However, when we analysed this service we found that learners are accessing an e-learning based learning management system and streaming video content of a blended course using laptops and wireless broadband dongles. The public, who are not very clear about the difference between e-learning and m-learning, believe what service providers are saying. Politically, these types of initiatives can be defended since the m-learning definition used does not consider the pedagogical requirement of m-learning and purely depends on technical features. e-learning is defined as ‘learning supported by digital electronic tools and media,’ and m-learning as ‘e-learning using mobile devices and wireless transmission’ (Milrad, 2003). On the other hand, without the technical infrastructure it is a dream to talk about m-learning, and the distinction between m-learning and e-learning must be clearly visible to all stakeholders. Whether the m-learning could deliver better service than e-learning as a value added service is an open question. This question is studied and presented in this paper:

What is the relationship between e-learning and m-learning? (Keegan, 2002) Without e-learning infrastructure can we introduce m-learning (Peters, 2007)? Technology could drive us as has happened in many other cases but we should not let the technology take us just anywhere. When e-learning was introduced, the same thing was discussed with respect to f2f learning. Online/Web based facilities were initially introduced as a supporting facility for f2f classes. Later, it was integrated to develop the blended learning environment. In the next stage, e-learning was introduced completely removing the f2f interaction. However, e-learning is not a teaching environment but a learning environment. Those who try to practice the traditional f2f learning through e-learning always find failures because of the pedagogical differences. Failures are good learning lessons that help many people to correct their mistakes. It is difficult or painful to carry out the paradigm shift but it will bring many benefits. A similar paradigm shift is required from e-learning to m-learning. This was the main lesson learned in this case study of developing an m-learning extension to the existing e-learning framework.

Modular Object Oriented Dynamic Learning Environment (Moodle) (http://www.moodle.org) is the well-known open source software that has contributed significantly the paradigm shift from classroom based learning to online learning. Many educational institutes have started using Moodle to experience online learning. University of Colombo School of Computing (UCSC) also developed their online learning service platform using Moodle starting from 2005. It was initiated with blended learning courses for internal degree programmes and later was extended to a fully online degree programme called Bachelor of Information Technology (BIT). The majority of the users who take these courses have mobile devices and the number of users possessing a mobile device is usually higher than those who possess a computer with an Internet connection. Therefore, we believed that there was a significant opportunity to use mobile devices in the learning environment.

Mobile learning could be defined as an extension to the e-learning platform, blurring the temporal and geographical barriers by taking advantage of mobile technologies (GSMA, 2010). Unlike in e-learning, the learning process is not restricted to a prearranged, fixed location where the Internet connection is available, and learning could happen with the movement of the learner as long as he/she has the mobile device and an Internet connection. Hence, m-learning could be used to enhance the learning activities resulting in increased efficiency and effectiveness of the learning process.

However, designing and developing an m-learning extension as a software solution is not straightforward. Moodle is not intrinsically designed to be accessed through mobile devices, but the constructivist pedagogy supported in Moodle VLE could be applied to design the interaction in m-learning. A number of issues and challenges have to be addressed when ex-
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