

# A CONCEPTUAL FRAMEWORK FOR OUM M-LEARNING PORTAL

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## ABSTRACT

This paper presents a conceptual framework for Open University Malaysia's (OUM) M-Learning Portal. As an extension of the currently practised blended learning approach to distance education, mobile learning offers learners a learning experience based on greater access to learning material anytime anywhere. This paper focuses on the development of a conceptual framework for mobile learning which is based on eight criteria covering mobile learning objectives, learning styles and strategies, varied media formats, a platform that sustains learning materials and additional features that accommodate successful implementation of mobile learning. The portal for housing and the delivery of mobile learning materials must be practical and accessible for all OUM learners. These materials can be presented in a structure that promotes self-selection of material by students, the hallmark of discovery learning. The success of mobile learning also relies on the awareness created and the support given to the learners.

## KEYWORDS

m-learning, mobile phones, framework, mobile platform

## 1. INTRODUCTION

Open University Malaysia (OUM) has long been using ICT to provide equal access and quality education to adult learners who have to struggle through various forms of learning barriers. As such, at OUM we recognise the need to constantly engage and motivate our learners. This is indeed the underlying reason for developing the mobile learning (m-learning) platform. M-learning at OUM is defined as a mobile learning experience using innovative learning materials that engage learners anywhere anytime. OUM recognises m-learning as an exciting development that uses mobile technologies to enhance the learning experience (Tribal Education Limited, n.d.). Mobile devices along with the Internet can help us to engage and motivate learners, anytime and anywhere (Attewell & Savill-Smith, 2004). They expand the equal distribution of knowledge and learning opportunity to people all around the world, regardless of race, religion, gender while allowing greater access to a wide range knowledge resources. This is clearly in line with OUM's vision to democratize education by increasing both quality and flexibility. Nevertheless, one ought to remember that technology by itself will not be able to improve the quality of education. Kimmel (1995) stated that technology, when properly used, can be a very effective tool for improving and enhancing instruction and learning experiences in the content areas.

## 2. LEARNING ENVIRONMENT AT OUM

Open University Malaysia (OUM) uses a blended pedagogical approach of learning to deliver its open and distance education programmes to adult learners. The blended learning mode at OUM consists of three

primary components namely self-paced learning (SPL), face-to-face (F2F) tutorials and collaborative online learning.

Learners in OUM are guided in their SPL through self-instructional modules (SIM) designed for 120 hours of study for a 3 credit course. Every module includes a recommended SPL plan that recommends about 80% of study time for each course to be spent on SPL using the given SIM. After two-weeks of self-study, a learner can attend the F2F Tutorial sessions along with other learners to discuss the course content and difficult concepts with their tutor. Throughout the entire semester, a learner is supported by OUM's Online Learning Management System (myLMS), a web-based e-learning platform that supports asynchronous online forums shared among fellow learners and their tutor. Each tutorial group has a maximum of 25 learners.

Considering the various forms of barriers adult learners face in pursuing education, OUM is committed to create suitable learning support materials. M-learning is deemed an ideal solution for the demanding lifestyle of adult learners.

### **3. CRITERIA FOR M-LEARNING**

There are several important criteria in considering appropriate technology for m-learning. The first few criteria are derived from the learner-centred pedagogical framework designed to encourage OUM learners (Norlia, 2008). The other criteria are also determined to promote effective learning in a suitable environment. Detail descriptions for the criteria are described below.

#### **1. Accessibility**

First, m-learning material should be made accessible to almost all learners. This is possible via mobile devices such as notebooks, netbooks, mobile phones or MP3 players. The choice to use mobile phones is supported by evidence from a study conducted in the last quarter of 2008 where 98.9% of OUM learners own mobile phones. The study also indicated that more than 63% of the learners are willing to purchase new mobile devices in order to embark on mobile learning (Zoraini Wati, 2008).

#### **2. Learning Styles**

In selecting the format of m-learning material one should consider the various learning styles of an adult learner. Learning styles refer to the variety of ways in which people learn. Physical learning style inventories emphasize the preferred use of a particular sense when learning: sight (visual), hearing (auditory) and touch-movement (tactile-kinesthetic) (Herod, 2002). Often a learner uses all three learning styles, but the degree of dependence on each style would vary from one person to another. Therefore, the design of learning materials should consider a mix of each style to increase its effectiveness.

#### **3. Learning Strategies**

The m-learning material should be developed using appropriate learning strategies. Although content developers are free to choose the strategy for their content, they are advised to prioritise the interests of learners. A strong emphasis is given to learner centred strategies such as inquiry-based, discovery-based or problem-based learning strategies that are based on constructivism theory. The importance of the constructivism theory lies on the fact that it is a psychological theory involving learners interacting with the physical and social world construct their own knowledge (Fosnot, 1996).

#### **4. Media**

M-learning content can be created using text, graphic, audio, video, animation and multimedia formats. However, in selecting suitable formats of m-learning material, one must first consider the aforementioned criteria on learning styles and strategies. Gardner (2000) recommends that before

embracing any new technology, we need to declare our educational goals and demonstrate how a particular technology can help to achieve them. This point is also emphasized in the mobile learning guide by Ufi-learndirect & Kineo (2007) that recommends judicious use of media. The use of graphic, audio and video formats as well as animation must be justified in terms of their effectiveness in meeting learning objectives. This brings us to the next criteria for m-learning material.

## 5. Learning Objectives

Mobile Learning objectives (mLO) are similar to the learning objectives stated in OUM modules, except in terms of the amount of information they cover. The use of mLO in structuring m-learning material gives it a focus and allows the outcome to be measurable. The mLO should be short, simple and independent (Holzinger, 2005).

## 6. Learning Platform

Considering the current learning landscape at OUM, m-learning materials are best placed on a web portal. The establishment of a one-stop resource centre complete with a user guide and technical support is essential for OUM learners. Other relevant sub-criteria are:

- i) The materials should be developed in downloadable forms to avoid issues concerning network traffic and subscription costs. The downloaded materials can even be saved onto a secondary storage device or printed.
- ii) The portal is to be programmed to allow both online and offline access to the content to avoid access issues.
- iii) The design of the web portal should be practical and effective. It should offer friendly interface and hassle free access.

## 7. Creating Awareness

The m-learning portal should feature sections dedicated to creating awareness about m-learning and how it complements the existing blended mode of learning practised in OUM. In addition, it would also feature sections on Guidelines on Mobile Phones, Technical Review and Frequently Asked Questions (FAQs).

## 8. Support Features

Lastly, additional features such as polls, message alerts and comment boxes are added to the learning platform to provide an avenue for learners to forward their thoughts on learning.

# 4. CONCEPTUAL FRAMEWORK OF OUM M-LEARNING PORTAL

The above criteria form the backbone for designing the conceptual framework for the m-learning portal shown in Figure 1. The numbers indicated in the figure refer to the numbers associated with the criteria listed in the previous section.

The development of m-learning material is governed by four criteria: Learning Styles (2), Learning Strategies (3), Media (4) and Mobile Learning Objects (5). This is the core structure in the m-learning framework whereby sub-topics covering small chunks of information on concepts that are independent of each other are identified for development. Upon selecting the sub-topic, the mLO has to be stated clearly. The mLO must be short, simple and independent. Content developers must then choose learning strategies and styles that are effective in achieving the stated mLO. Next, they must consider the form of media to develop innovative learning materials that are effective and engaging.

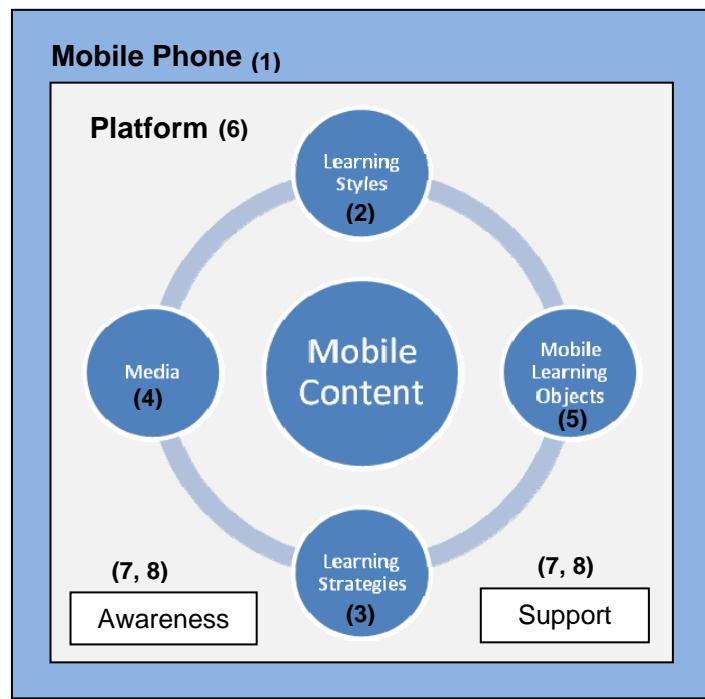


Figure 1: Conceptual Framework for m-Learning Portal

The layout of mobile learning material is of great importance. It should be structured in ways that encourage exploratory learning. The materials are placed on a web portal in line with the sixth criterion. Additional features as specified by criteria 7 and 8 are included in the conceptual framework of the portal. This portal can be accessed through most mobile phones and computers.

Learners using smart phones with WiFi features could benefit from the hot spot facility available at OUM Learning Centres and many other hot spot areas in major towns. Otherwise learners are advised to access the portal and download the material using a computer before transferring it to their mobile phone.

Table 1 shows the template for developing m-learning content for a specific topic in a course. The first part of the table is created for identification purposes. The second part of the table is the most important part that describes the specifications of the m-learning material.

Table 1. Template for developing m-learning material.

<b>Subject Area:</b>	
<b>Content Title:</b>	
<b>Developer:</b>	
<b>Mobile Learning Objective:</b>	
<b>Learning Strategies:</b>	
<b>Learning Styles:</b>	
<b>Format:</b>	
<b>File size:</b>	
<b>Duration:</b>	

Content developers must develop each m-learning material based on a single mLO using effective learning strategies and styles, and formats. The use of texts, graphics, audio, video and animation must support the desired learning outcomes. The last part of the template specifies the memory space and the duration of the content. The content developer should strive to be innovative while keeping everything short and simple.

## 5. CONCLUSION

The m-learning initiative at OUM is designed to enhance the learning opportunities of distance learners. It is also to support the educational pursuits of learners who had busy life as parents and employees. The web portal is designed to support all OUM learners. At the core of the portal, they lies the m-learning material design based on selected mLO, learning strategies, styles and formats. The layout of the materials is crucial to encouraging discovery learning. Further details for developing m-learning material can be seen from the template shown in Table 1. The conceptual framework is supported by additional factors on awareness and support. The m-learning materials must be effective in achieving the mLO while engaging and motivating the learners.

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