

Effective M-learning Design Strategies for Computer Science and Engineering Courses

Ibrahim Alkore Alshalabi, Khaled Elleithy
 Department of Computer Science and Engineering
 University of Bridgeport, Bridgeport, CT

Abstract

Mobile learning (M-learning) is receiving more attention as a method of delivering to learners study materials anytime and anywhere. It is a necessity for education to keep with a layout for learning that is accessed through mobile devices. These learning materials should consist of good quality learning the available instructional layout to contain learning as effective as possible. It is important to follow certain strategies that can help the design of M-learning applications. In this paper we propose a set of strategies that are useful for creating mobile prototype for Computer Science and Engineering courses for M-learning applications for course content.

Learning environment

It's important to determine the components of the M-learning environment. The components M-learning systems are shown in Figure-1.

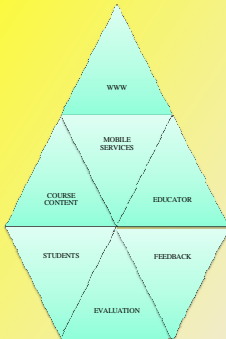


Figure-1: M-Learning environment component

Why is M-Learning style?

Different students have different modes of learning especially if attractive technology is involved. In order to better the students' educational abilities, the teaching approach is matched with the chosen learning style. Students believe that new technology mobile devices used for mobile learning can enhance the current learning practices in many aspects. This includes: When and where, better effective method of learning, reduce time to access learning materials, receive feedback, and act on time and so on.

Courses vs. Learners

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Design Strategies Model for Computer Science and Engineering Courses

The purpose of this paper is to develop strategies that can be followed during the creating of computer science or engineering course for M-learning environment

Strategy 1

Computer science and engineering courses are different from other courses. In first strategy, these differences have to be considered during construction of the content. The many learning theories suggested need to be considered before construction of the content is readily adapted to teaching. During the creating of computer science or engineering course we need to use one or more of learning theories to work as a group does deliver high quality of knowledge to the learners.

Strategy 2

For the approach to transform the education content in M-learning, there are many kind of methods. Educational content is delivered via many electronic media. For the learning style, E-Learning can be divided into synchronous learning mode and asynchronous learning mode

Strategy 3

We should notice when we design the educational information: on one hand, the information must be organized in sentences so that we can post it with cellular phones. On the other hand, learning contents design should interest students in discussing topics, so the topics should not be too difficult or too easy for students; them must be designed according to the students' cognitive level

Strategy 4

An interactive representation of M-learning in Figure 2 is required in order to fabricate and maintain the learning resources.

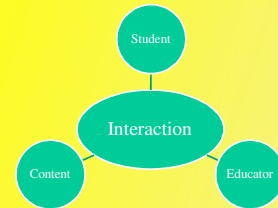


Figure 2: An interactive model of M-learning

Strategy 5

Communication is the heart of the M-learning system for computer science and engineering core. In order to achieve a successful communication. Communication is accomplished through the use of a source (sender), a destination (receiver), a transmitter channel (medium) through which communication occurs. It is has been argued that communication can be affected by the following five attributes:

- 1- *Immediacy of feedback*
- 2- *Parallelism*
- 3- *Feedback*
- 4- *Rehearsability*
- 5- *Reprocessability*

Communication processes :

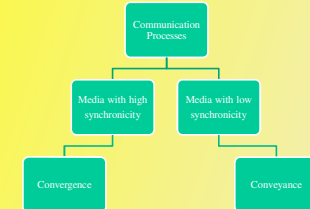


Figure 3: Group communication processes

Strategy 5

The integrated platform computing and engineering courses. Computer training and engineering (as currently organized) has the following components:

- Lectures (in class).*
- Homework assignments.*
- Laboratory exercises.*
- Midterm and final exams.*

We have to create the structure of the courses that give us the prototype M-learning course content (of the class to convert a line)

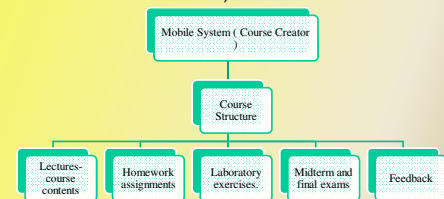


Figure 4: Course Creator

CONCLUSION

As a result, teachers and trainers must design learning materials for delivery on a variety of mobile devices. Design of learning materials for mobile devices in accordance with good theories of learning and teaching of proper design and effective learning