

FACE TO FACE AND ONLINE MOBILE LEARNING SYSTEM

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Abstract: The fast developments of information and communication technology (ICT) today not only have an impact on the world of industry, but also in the world of education. In the world of education, the usage of ICT is expected to improve the performance, especially the performances of students with regard to their academic matters. This study aims, first to provide empirical evidence that mobile learning will improve student performance not only in technical skills but also in personal skills. Second to prove and test the effectiveness of mobile learning as opposed to face-to-face learning in improving the competence of students. Method of learning with mobile technology is expected to support the learning process of the present method so as to improve the competence of students in terms of technical competency skills, personal skills, business knowledge and extensive expertise. Face-to-face lectures lack persistence and when students fail to understand. In case of lectures during the off face-to-face sessions, there is no opportunity to playback the lecture. Recording lectures with Opencast Matterhorn and making these available to these students as a supplementary resource to the face-to-face lecture has potential to alleviate this problem. Accessing the Video or Audio of opencast recorded lectures (ORL) on students' mobile devices anywhere and at any time after face-to-face lecture could enhance student understanding of lectures and improve learning. This paper describes the architecture and design of Mobile learning through face to face online.

1. INTRODUCTION

With the tremendous growth and advancements in mobile and wireless technologies such as Smart Phones, iPads, Tablets, Wi-Fi, GPS, 3G; mobile learning has come into focus. This proposed Interactive mobile learning has the potential of activating an educational shift from a formal, classroom-based and teacher oriented approach towards an informal, interactive and learner oriented approach where learning happens anywhere and at anytime. In this paper, we have developed a mobile application (figure 3) where students can view their recorded lectures on their mobile devices at anywhere and anytime. The short coming of this system is that students cannot post a comment on the ORL as they watch it, there is need to navigate to another page, which disrupts the interaction with the ORL. The ORL also cannot be downloaded.

In this proposed interactive mobile learning (figure 2), students can watch the video or listen to the audio of the ORL and also download it. The comments can be posted while watching the video. The strength of interaction in this system lies in the collaboration between students and students, students and lectures. The students post comments after watching the ORL; these comments help weak students to understand the lectures. This form of interaction is beneficial to students having limited access to the lecturer after the face-to-face lecture. They can see the comments of other students on the ORL in different official languages of India.

2. OPENCAST MATTERHORN

Opencast Matterhorn is a free, open-source, platform for supporting the management of educational audio and video content and has the affordance to improve the efficiency and

production of recorded lectures than IADIS International Conference Mobile Learning 2012 331 traditional podcasting. Most institutions of higher education produce a huge number of lecture recordings which are stored in an archive; opencast allows access to this storage when needed. Podcast works with a variety of tools and programs to produce and distribute content while Opencast Matterhorn offers all the relevant functionalities as an integrated whole. This reduces the amount of manual work needed to shepherd media objects across various sub-systems, thus increasing productivity and reliability.

Opencast Matterhorn also provides the educational community with a rich media platform for educational research, both technological and pedagogical. Higher education students can be reached in more ways, through plugging into the right learning context, or access through mobile devices hence increasing interaction, universal access and improved discoverability.

Opencast Matterhorn aims to make lecture capture affordable for institutions whether an institution is just starting an academic podcasting program, or wanting to integrate with existing infrastructure for those institution who have already invested in a lecture recording program. Opencast Matterhorn includes the following features:

- Administrative tools: tools for scheduling automated recordings, manually uploading files, and managing metadata, captioning and processing functions
- Integration with recording devices in the classroom for managing automated capture
- Processing and encoding service: services that prepare and package the media files according to configurable specifications
- Distribution: local streaming and download servers and configuration capability for distribution to channels such as YouTube, iTunes or a campus course or content management system. The feed distribution channel provides an easy endpoint for integration with any third party system wanting to connect to Matterhorn. The implementation of the service is straight forward, copying the distribution media files to local download and/or streaming servers and creating an rss and/or atom feed out of the static metadata of the media package
- Rich media user interface for learners to engage with content, including slide preview, content-based search and captioning

3. MOBILE LEARNING

Mobile Learning (M-learning) also called nomadic learning has influenced and enhances the benefit of e-learning, accessing learning contents and making available personalized learning anywhere and anytime. Many definitions of M-learning exist in literature. Geddes defines mobile learning as ‘the acquisition of any knowledge and skill through using mobile technology, anywhere, anytime that results in an alteration in behavior’. Some other authors place more emphasis on the mobile devices and the mobility of the user. These authors viewed m-learning as occurring in informal learning settings.

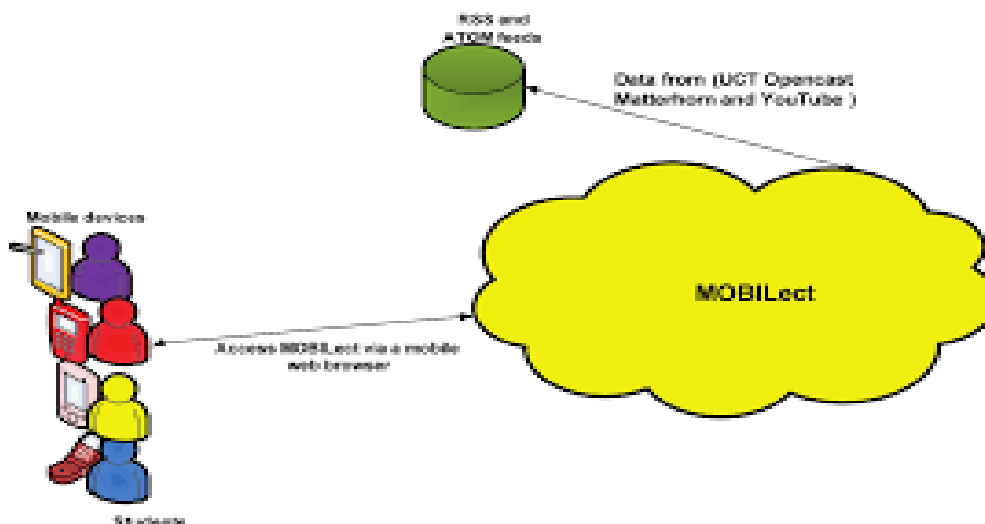


Fig1 - Overview of an Interactive Opencast Mobile Learning

4. DESIGN OF AN INTERACTIVE MOBILE LEARNING

There is need to capture and record lectures using Opencast for continuity and persistence outside the traditional classroom which lack persistency. Opencast Matterhorn provides a way of automatically capturing and recording lectures in higher education hence making lectures persistent. Pilots are currently being run at the Faculty of Health Sciences, University of Cape Town. Our view is that when students download (ORL) to their mobile devices, the pedagogical potential of Opencast Matterhorn would be realized as most students own mobile devices.

Apart from students having difficulties in face-to-face lectures due to language barrier, there is need for part-time students who are always on the move to have a mobile version of the Opencast; examples of such students are mothers having to wait in the doctor's waiting room for hours and students working as salesmen spending a lot of time driving from one customer to another either on train, bus or in their own car will be able to use the mobile application (fig4) which can be viewed on mobile devices by students. Students can watch and listen to the ORL on their mobile devices. For students that are shy to ask questions during the face-to-face lectures, this mobile Opencast encourages participation and collaboration among students using blogs. The major short coming of this application is the inflexibility of the interactive mode. Students have to navigate to another page to post the comments after watching the ORL and cannot download the ORL. We have provided a solution for this problem by proposing an interactive opencast mobile learning, an improvement on this existing application. In this design (fig3) the students can post their comments while watching the video in different languages. There is also a download option.

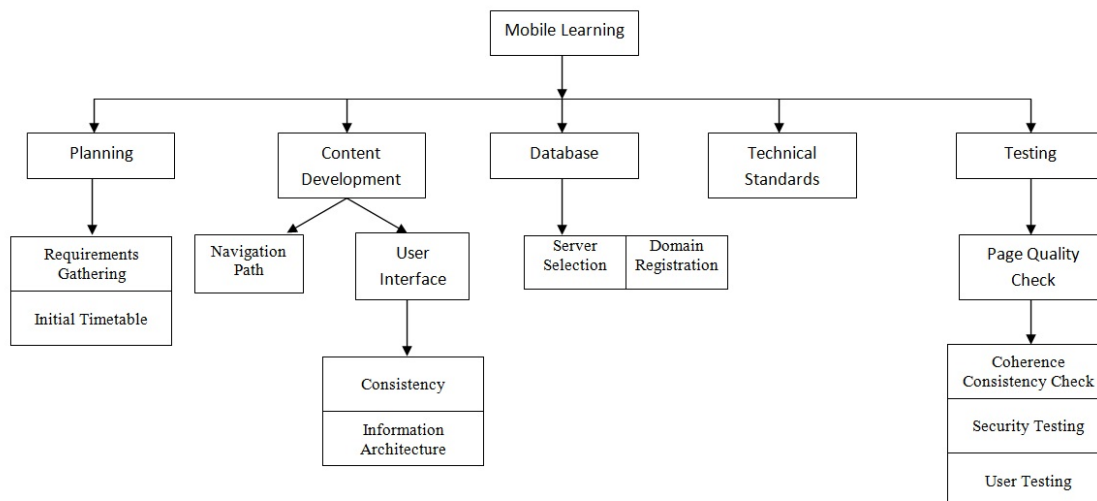


Fig2 - Architecture of the interactive opencast mobile learning

Describes the architecture of the interactive opencast mobile learning (Fig2). In this architecture

- Mobile devices provide interfacing to the application.
- Host web site provides the fields to access data (ORL) for the application on the mobile device.
- Administrator authorizes the upload and download of ORL from the host site

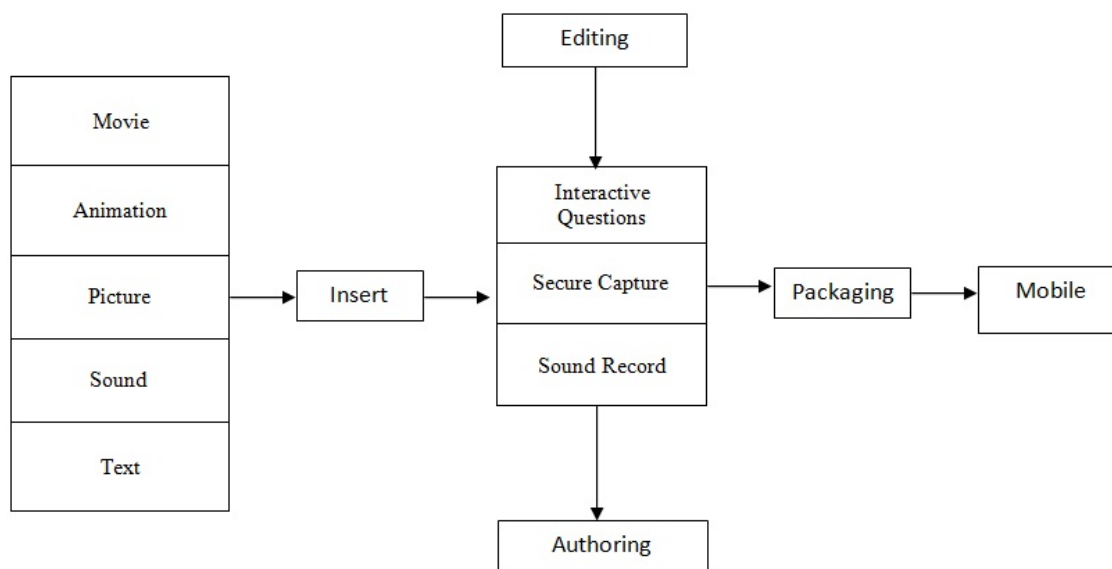


Fig3 - Block diagram of Interactive m-Learning System

(Fig3)Shows the block diagram of Interactive m-Learning System where the input involves the motion pictures, animations, sound and text which is inserted to the editing which involves the interactive questions, secure capture and sound record and the output is packaged and given to the mobile.

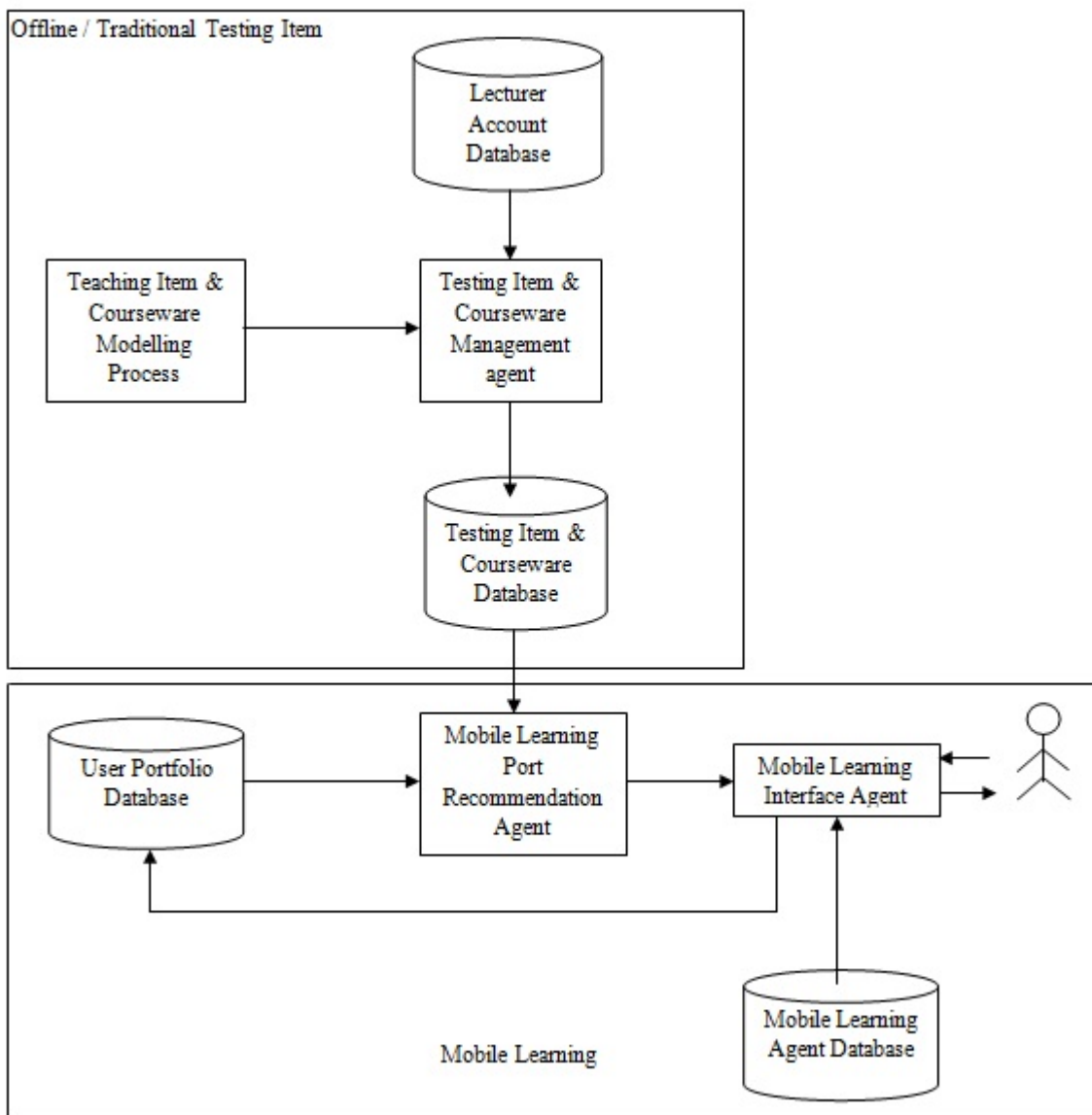


Fig4 - Mobile learning Architecture from the offline to the online system

(Fig4)Shows the entire Mobile learning Architecture from the offline to the online system. The first diagram involves the testing item which is the course details and material. The second diagram involves the mobile learning end user interface.

5. EFFECTIVENESS OF MOBILE LEARNING

One of the benefits of mobile learning is the life-long learning as indicate on the Core Competency Framework (from AICPA) which supports the concept of continuous learning that starts from the academic environment and continuing (life-long) through professional education and experience. Therefore, this study aims to provide empirical evidence that the approach to learning with mobile learning will improve student performance not only in technical skills but also in personal skills. In addition, by adopting mobile learning technology in accounting education, accounting students not only understand the importance of personal skills in the accounting profession, but they also learn to accept and use ICT as part of the accounting profession. In other words, mobile learning that support conventional

learning will drive the achievement of the overall competence of accountants: the technical competence, personal competence and a broad business perspective competency.

This research also aims to prove and test the effectiveness of mobile learning as opposed to face-to-face learning in improving the competence of the students and the national education goals. Method of learning with mobile technology is expected to support the learning process of the present method so as to improve the competence of accountants in terms of technical competency skills, personal skills, business knowledge and extensive expertise.

Mobile Learning also helps in teaching the students the professional values, ethics, and attitudes, but still need to balance the percentage of the knowledge, skills, values, ethics and professional attitude, and assessment of methods and techniques of teaching.

This study is important for several reasons: first, this study tried to carry out a review of the methods and techniques of teaching by providing a solution that is more sophisticated learning methods in accordance with the advancement of technology, the mobile technology-based learning methods. Second, although mobile technology has developed very rapidly, up to date positive impact of mobile learning is still questionable, considering there are positive and negative impacts of the emerging mobile technologies.



Fig5 - Prototype design of the Interactive Mobile Opencast



Fig6 - Mobile User interface to Opencast

The real time images of the Interactive mobile learning system is shown in images Fig5 and Fig6. This proves the real time effectiveness of Mobile Learning Interactive Systems.

6. CONCLUSION

This interactive Mobile learning seeks to enhance learning in case of education. With this work one can be able to improve on our existing mobile opencast application that supplements the face-to-face lectures. This application will run on different mobile devices of student and allow collaboration between students that are good and weak in understanding English language. Students will also have seamless access to recorded lectures anywhere and anytime on their mobile devices to watch at their convenience. This mobile application supplements the traditional face-to-face lecture and not substitutes it.

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