WEB MOBILE INTEGRATION IN TEACHING HERITAGE MODULE AT PORT DICKSON POLYTECHNIC

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ABSTRACT

Computers and Internet have successfully provided students with various online educational services. With the latest developments in the mobile technology, new methods are emerging to provide educational services through mobile technologies such as mobile phones and PDAs. By providing the educational services using the wireless medium, the educational institutions can facilitate self-access learning. By using the mobile educational services, lecturers and students can access the services anytime and anywhere they want. This paper discusses the possibility of providing architectural heritage studies on web application through mobile technology. This offers a new approach in architectural education, namely imparting knowledge, or facilitating the imparting of knowledge, through a medium other than the traditional methods used in polytechnic. It does not seek to replace the conventional methods of teaching, which have traditionally been through lecture classes and design studios. It merely aspires to bridge some of the gap that is found between the two and thereby promote better understanding of architectural knowledge. The case study is an important tool in architectural education. Students learn by analyzing, comparing and evaluating aspects of important architectural works. By providing a tool by which this evaluation is facilitated and enhanced through the process of associative thinking, architectural learning is enriched. The paper will conduct formative evaluation of the student projects with the aim to test the feasibility of providing mobile educational services for diploma level architectural students in Port Dickson Polytechnic. The study found that the mobile learning can be a useful complement to the current computer based learning

Keywords: Heritage, Web, Mobile Technology, Mobile Learning

Introduction

Today the Web-Based Learning has become a common medium of education. Today many virtual universities offer web based education. It is why because traditional learning in lecture room is not enough, because in lecture room instruction, it is lecturer centered rather than student centered, dominated by information derived from textbooks and notes, confined in space, time and conceptual structure, involves little joint work in small groups and is not concerned with solving problems identified by students (Hume 2001). Web-Based learning (or in other words “e-Learning") is learning, which is delivered, in whole or part, using the WWW (World Wide Web) as the delivery medium (Jackson 2004). The WWW allows not only the transmission of information in text but other types such as graphics, video, audio, animation, etc. via the Internet from one computer to another. This ability allows for the delivery of educational content using multiple methods (computer-based, video, text, audio) within one

system. Web based learning still have the the barriers of time and space in learning process. On the other hand besides Web technology, new technologies such as WAP (Wireless Application Protocol) and GPRS (General Packet Radio Service) technologies offer education institutions additional tools. WAP and GPRS allow students and lecturers access to the Internet, anywhere and anytime, via the micro browser equipped mobile phone (Tariq et al. 2005).

In the recent years, the quick advance of mobile technologies has brought a new term of learning known as WAP based learning or sometimes called mobile learning. Mobile learning has been considered as the new future in an educational process. There is a lot of work and research that is going on the mobile learning. People try to understand how the mobile devices will help us in having a better education. In this paper some suggestions will be given on how to build a website using free mobile host in the Internet. This website will be used as a reference where students in the design class can get the information needed through mobile devices to help them in the design process. Finally this paper will discuss challenges and limitations in mobile learning and the future work.

Defining Mobile Learning

Today people agreed that mobile learning is an e-learning through mobile devices. In general by mobile device we mean PDAs and digital cell phone or any device that is small, autonomous and unobstrusive enough to accompany us in every moment of our every day life that can be used for some form of learning (Trifinova 2003). Lehner & Nosekabel (2002) defined mobile learning as any service or facility that provides a user with general electronic information and educational content that helps in acquiring knowledge regardless of location and time. Vavoula and Sharples (2002) indicated there are three conditions in which learning can be defined as mobile, which are mobile in terms of space, mobile in different areas of life and mobile with respect to time. From these definitions, a mobile learning can be defined as a learning process that have the ability to deliver educational content anytime and anywhere the learners need it.

Designing pattern for mobile learning

According to Chen et al. 2002 as a new trend in learning process, mobile learnin benefits with certain characteristics such as urgency of learning need, initiative of knowledge acquisition, mobility of learning setting, interactivity of learning process, situating of instructional activities and integration of instructional content. The shift from e-learning to mobile learning increases the activity of educational information exchange between the learners and the teachers. The website through mobile devices presented in this paper is a highly portable learning resource center that allows learners to access anytime and anywhere they need. A dynamic learning environment created by the mobile devices can extend the learning activities further than traditional learning. This website customizes the informations that can be refered to solve the problem given in the design module for the architectural diploma students in Port Dickson Polytechnic. The aim of the project described in this paper is to prepare users with personal tools that are *highly portable*, so that they can be available wherever the user needs to learn, *unobtrusive*, so that the learner can capture situations and retrieve knowledge without the technology obtruding on the situation, *available anywhere*, to enable communication with teachers, experts and peers, *adaptable* to the learner's evolving skills and knowledge, *persistent*, to manage learning throughout a lifetime, so that the learner's personal, accumulation of resources and knowledge will be immediately accessible despite changes in technology, *useful*, suited to everyday needs for communication, reference, work and learning

and *intuitive* to use by people with no previous experience of the technology.

Content of the web mobile

This paper offers a new approach in architectural education, namely imparting knowledge, or facilitating the imparting of knowledge, through a medium other than the traditional methods used in polytechnic. This paper shows that an application on the web through mobile device that allows the user to study the minang heritage buildings and their different parts. Students also allow sharing the informations they obtain from their research on this website. This website gathered all the researches from previous semester in the form of drawing, poster, bunting and animation. This website is a collection of database from previous semester and can be accesed using mobile devices. This website being designed specially for module CA602 knows as Measured Drawing. Focus for infos to be gathered relate to minang architecture.

Web Development

Baseportal and DriveHQ is free host that can being used to develop the website. The website can be accessed using mobile device. The host for this website is baseportal.com. Baseportal is a web-based database platform. Use it from anywhere from any computer without programming knowledge - for free. Within minutes the first database is created. Adapt the design to your own needs and if you are an experienced user you can use your own programs as well.

Figure 1: Host for this website

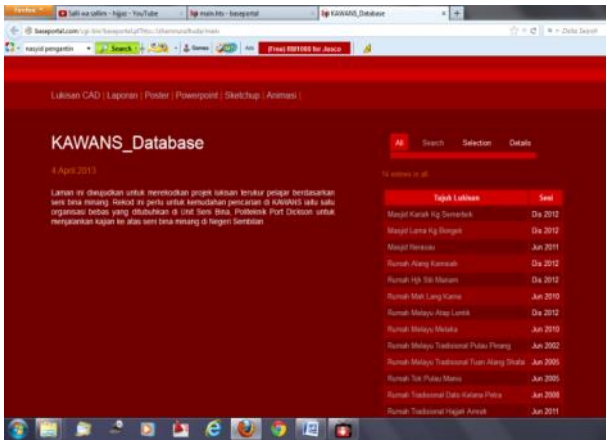

Figure 2: The frontpage for this website

The website was divided into five sections such as Lukisan CAD, Laporan, Poster, Powerpoint, SketchUp and Animasi. DriveHQ used as a host for database. DriveHQ is the first cloud information technology solution provider, offering high-end cloud storage, backup, group sharing and collaboration services for business since 2003. Over 1 million users have downloaded DriveHQ File Manager and DriveHQ Online Backup client software. For informations to students in digital model the You Tube being used. Finally this website can be

accessed at http://baseportal.com/cgi-bin/baseportal.pl?htx=/ishamnurulhuda/main

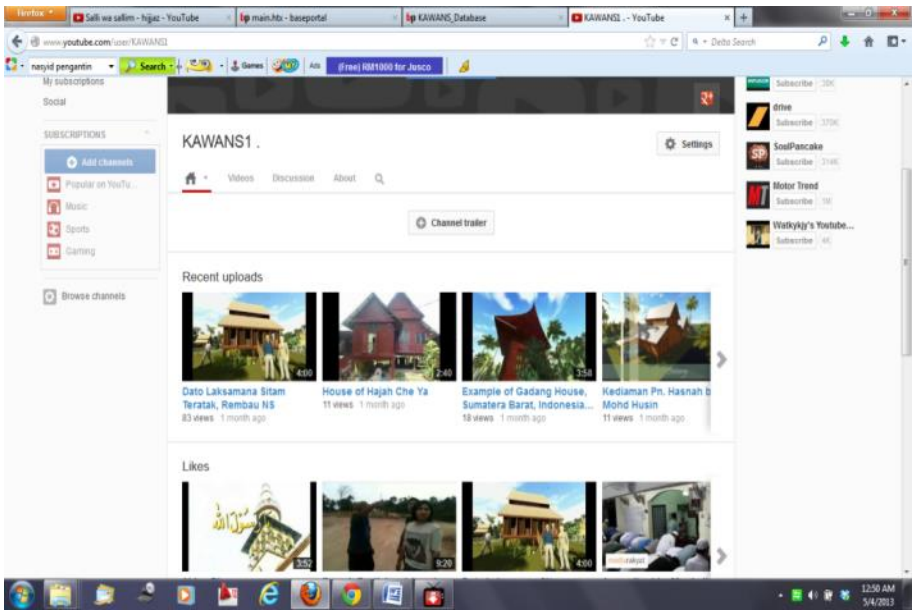

Figure 3 KAWANS Chanel in You Tube

Formative Web Evaluation

A formative evaluation was carried out for the web where all the 30 architectural diploma students who are in the final semester at Port Dickson Polytechnic used the web and provided their feedback in the form of a questionnaire. All the participants were initially asked to go through the web as a reference for the information required for the project being given in their design class. After getting familiar with the web, they were given a questionnaire to fill in. The questionnaire contained 9 questions that inquired users' past experience with web-based educational systems and the feedback on the web.

The questionnaire is enclosed on appendix one. The questionnaire revealed that most of the participants had uses some sort of web-based education system at regular basis. All of the participants found using web-base education system somewhat useful for following reasons it generates students' interest to acquire information, it provides convenient access to useful data, it is good in functionality, it refreshes academic information that they have learn before and it fastens their time to acquire information needed. All the participants had not used a web on mobile technology before. From this we concluded that the use of mobile technology in education was still new to all the participants. When asked whether they are willing to search information from the web on the mobile technology, most participants agreed that they will but some disagreed. The response was about 68% agreed, 20% disagreed and 12% no opinion. These educational services will be widely accepted when the mobile technology is developed and the cost is getting cheaper. The response of the participants when they being asked about their willing to buy a mobile device, such as mobile phone or PDA if they did not have one so that they can learn using web through mobile devices, the response was about 56% agreed, 38% disagreed and 6% did not know. This question shows the affordability of these devices to the participants. Most of the participants have mobile phones but they don't use it for browsing the wireless internet. The participants are not ready to spend money to buy additional mobile devices for mobile learning. This survey shows the cost to use mobile technology in education is still too expensive for most participants.

The feedback from the participants on the usefulness of the web to become source of

information for the measured drawing class was positive. 76% of the participants agreed that this web is a good reference for measured drawing class. When asked whether the design of the web is convenience to the users, 68% of all the participants agree that the design of the web is convenience to the users, 20% disagreed and 12% had no opinion on this matter. From these responses it can be concluded that the design of the web are satisfactory to the respondents. Most participants agreed that the web was easy to use. 76% participants agreed the web was easy to use and to understand. 16% participants had no opinion about the easiness of the web and only two participants said that this web was not easy to use. Participants suggested with the following suggestions for the improvements of the web condense information to provide faster access, make the navigation easier, place the **name and logo** on every page and make the logo a link to the home page, use **link titles** to provide users with a preview of where each link will take them, *before* they have clicked on it, write straightforward and simple **headlines and page titles** that clearly explain what the page is about and instead of cramming everything about a product or topic into a single, infinite page, use **hypertext to structure the content space.** In summary, about 70% of the participants agreed that the web will be a good reference for the students in measured drawing class. The participants agreed that the web will bring more convenience to the users. It opens new dimension for the learning process in polytechnic where the learning process will now change to the hand of the students. Time and place will not be a barrier for the learning process to occur. However more researches and discussions need to be done for the development of this new learning process

Discussion and Future Work

In this paper, the evaluation of the web has shown that the mobile learning can be a useful complement to the current computer based learning. Both the learners and the teachers will benefit from the mobile technology for convenient and instant access to education resources. With the rapid development of mobile technologies, mobile devices will be much more powerful than current ones. Then, they can support more attractive user interface and more functionality. Mobile technology may be an ideal instructional approach for building a learning community within technological based educational settings such as polytechnic in the near future. But the technical nature of this technology must be refined, modified and enhanced first. Additional qualitative and quantitative studies are also needed to substantiate the usefulness of mobile technology and to establish guidelines for integrating such tool into our learning process. Future of mobile learning is not discouraged; new efforts in this technology are in progress.

In the future the resolution of mobile learning enabled devices should improve as well as the display size. Moreover, if the mobile internet connection charges drop to a level affordable by the typical learners, such technology could be useful for both on-campus and off-campus students alike.

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