

E-Learning Hybrid Model

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Abstract

The use of e-learning in universities has been widely used and proven to be effective in supporting student learning activities. The scope of the e-learning feature differs from one university to another depending on the needs of the university concerned. In some universities e-learning is used in all learning activities from the beginning of study to final semester examination assessments and even thesis examinations, outdoor practice exam assessments also use the e-learning system because the e-learning used will combine all student learning outcomes including results. thesis examination. The problem is found when the thesis examiner lecturer must immediately enter the results of the thesis examination at that time after the thesis test is complete or the lecturer must enter the examination results in the field. In the web-based e-learning system, lecturers have difficulty because web-based e-learning has low mobility in its use, especially during the conditions mentioned above. The purpose of this research is to help lecturers or instructors enter the test results right away using mobile technology. The result of this research is e-learning that combines web-based systems and mobile-based systems or hybrid models

Keywords

E-learning, web base system, mobile base system

1. Introduction

E-Learning can be used at almost educational levels from elementary to tertiary education because the learning process can be created more effectively and efficiently. E-learning is also used in non-formal institutions such as communities and education for career advancement which is part of knowledge sharing in companies, The difference in education level is one of the factors that distinguishes the features used in e-learning because the need for knowledge and learning processes is different at each level of education.

Higher education is the highest level of formal education where the knowledge transfer process is not only limited to theoretical knowledge but a lot of practical knowledge that the learning process and assessment of learning outcomes must be carried out outside the room when it also requires high mobility requires mobile learning. Thus, web site-based e-learning combined with mobile learning becomes a solution for education in higher education

The purpose of this research is to help higher education combine website-based e-learning which is used in statistical learning activities and mobile learning which is used for learning activities with high mobility. The result of this research is a hybrid e-learning mode for higher education

2. Literature Review

2.1 E-Learning

The term e-learning contains a very broad meaning, so that many experts describe the definition of e-learning from various points of view. E-learning can be used as an innovative approach to distribute good design, learner-centered, interactive learning, and facilitate a learning environment for everyone, at any time using attributes and resources (Khan, B. ,2005) . From a variety of digital technologies as long as the learning material is suitable for open, flexible learning and learning environments According to the three experts, e-learning has several elements of what, how and why (Clark,2003). Meanwhile, e-learning offers new opportunities for instructors and students to enrich the learning and teaching experience through a virtual environment that supports not only the delivery but also the exploration and application of information (Holmes ,2006). E-learning online learning which defines online learning as an open and distributed learning environment with pedagogical tools, internet, network-based technology, to facilitate learning and build knowledge through action and interaction (Dabbagh,2005). E-learning is learning that can be done anywhere and anytime, depending on the needs of human resources (teachers, lecturers, instructors, and students) who carry out these e-learning learning activities. From some expert opinions, it can be concluded that e-learning is an innovative approach to distributing good design, student-centered, interactive, and learning for everyone, anytime using attributes and sources from various digital technologies as long as

Several components that must be known if an institution wants to implement e-learning, namely(Khan, B. ,2005):

- 1) Learning design;
- 2) Multimedia components;
- 3) Internet equipment;
- 4) Computers and tool storage;
- 5) Connection and service providers;
- 6) Power / program management, planning software resources, and standards; and
- 7) g. Connection services and applications.

There are three key components of online learning in collaboration to promote the meaning of learning and reciprocity, namely (Dabbagh,2005).

- 1) Pedagogical models or ideas;
- 2) Education and learning strategies; and
- 3) Pedagogical tools, or online learning technologies such as the internet and network-based technology

2.2 Mobile learning

The joining of movable computing and electronic learning: available resources anywhere you are, robust exploration competences, rich communication, dominant provision for real learning, and presentation-based valuation. Electronic Learning self-determining of place in time or space (Quinn,2001).

Another describe m-learning by the scope of the mobile infrastructure : “M- learning should be limited to learning on procedures which a woman can bring in her bag or a man can bring in his portable (Keegan,2005) and some learning delivery where the only or leading technologies are handheld or laptop devices(Traxler,2005)

2.3 Model

The model serves to explain an object so that it can be understood more easily and some research uses models with these objectives such as models for SME IT governance (Inayatulloh, 2020), the TAM model for SMEs(Inayatulloh, 2020), models for infectious disease warning (Inayatulloh, 2015) , models for new business models (Inayatulloh, 2016) , models for local election block chain(Inayatulloh, 2020) and CSF Cloud for SME(Hartono, 2020)

3. Methods

Figure 1 explain the research method. Research was conducted at several universities that have used e-learning to support online learning activities. The first step in this research is to identify user needs that have not been met by web-based e-learning.

After the problem is found because the user's needs are not fulfilled, the next step is to find alternative solutions to meet the user's needs. After mobile learning is determined to be a solution to meet user needs, then identifies the need for implementing mobile learning.

The next step is to build a mobile learning model by combining with existing e-learning systems. The final step is to build a web-based and mobile-based e-learning hybrid model to support learning needs in higher education

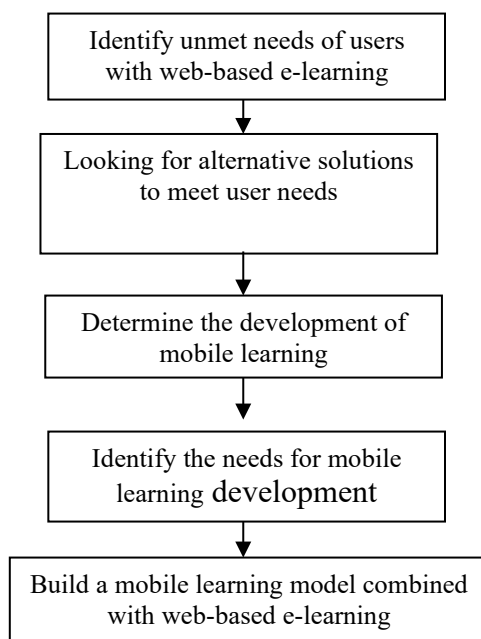


Figure 1. Research method

4. Results and Discussion

Figure 2 explain e-learning hybrid model. The e-learning hybrid model is designed based on observations in universities where e-learning is designed consisting of 2 main parts, namely e-learning web base to support student lectures and mobile learning to support lecturers in carrying out their duties such as providing outdoor study assessments, thesis assessments and learning activities outside using smartphones to access mobile learning.

Figure 2 describes a learning model that combines e-learning and mobile learning with the following explanation:

- 1) The components of e-learning consist of an LMS or learning management system for the web base system, a firewall to protect the learning system and database. E-learning can be accessed via the internet network if it is outside a campus and can use a LAN or Local Area Network if it is on campus. Users can also use Access Points from the local network if the user is in a campus environment
- 2) The mobile learning component consists of a mobile web server, LMS mobile base learning and a firewall to protect the system. The mobile web server is directly connected to the main e-learning system database
- 3) Learning is divided into 4 sub-sections, namely Topic, Forum, Assignment, Library and thesis. The assignment sub-section is a feature that lecturers can use to input exam results outside the room via a

mobile phone. This is also the main feature that is useful for lecturers when entering thesis examination results.

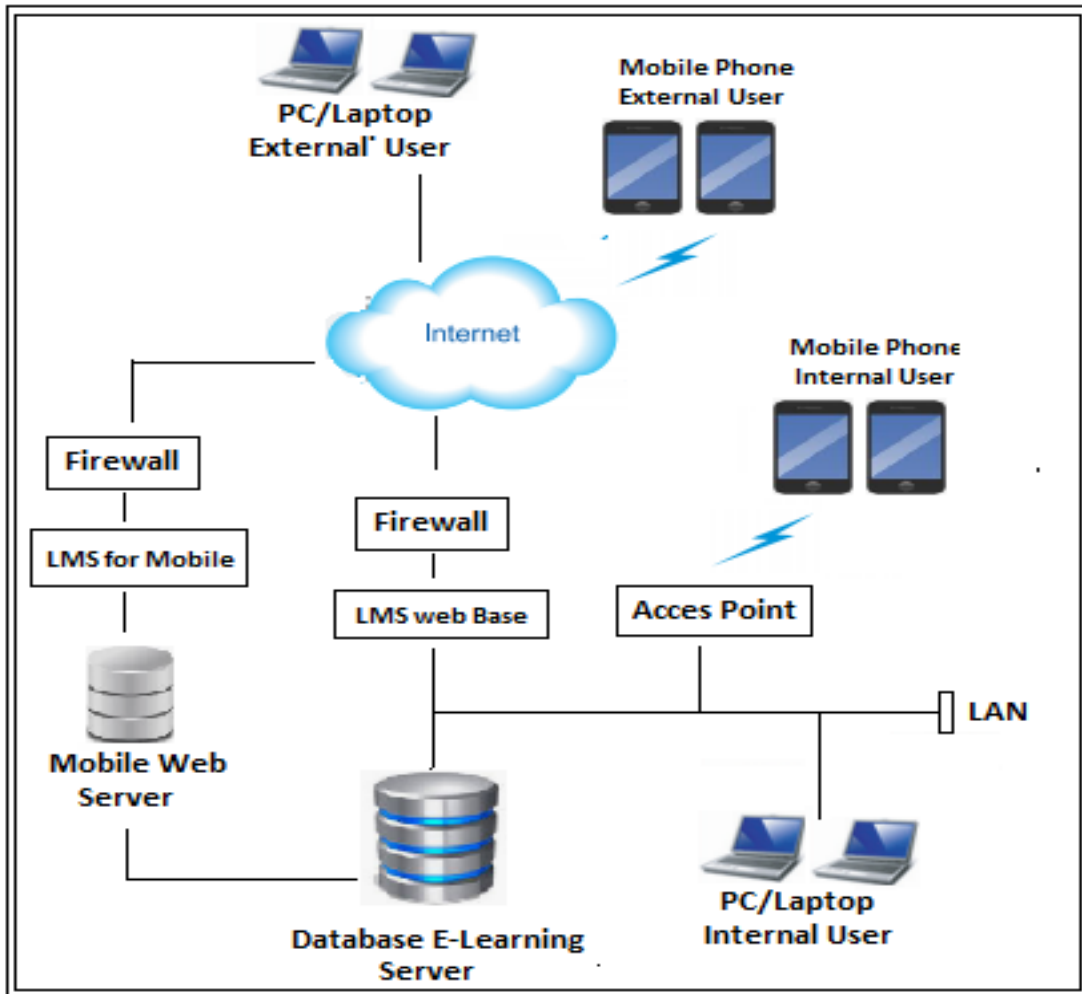


Figure 2. E-learning hybrid model

Figure 3 until 5 describe example display for mobile learning higher education

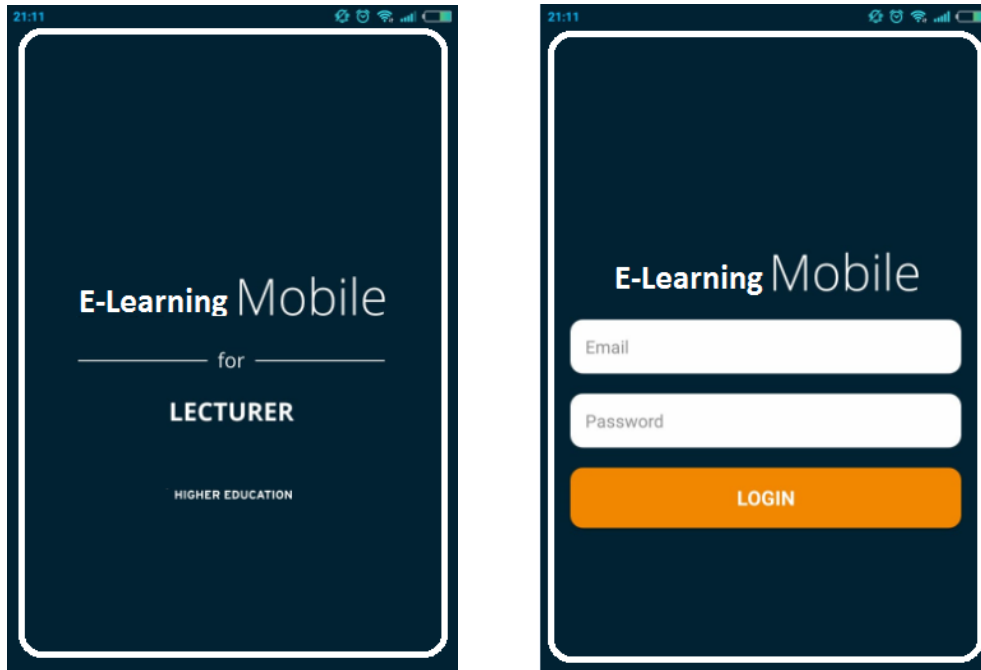


Figure 3. First display

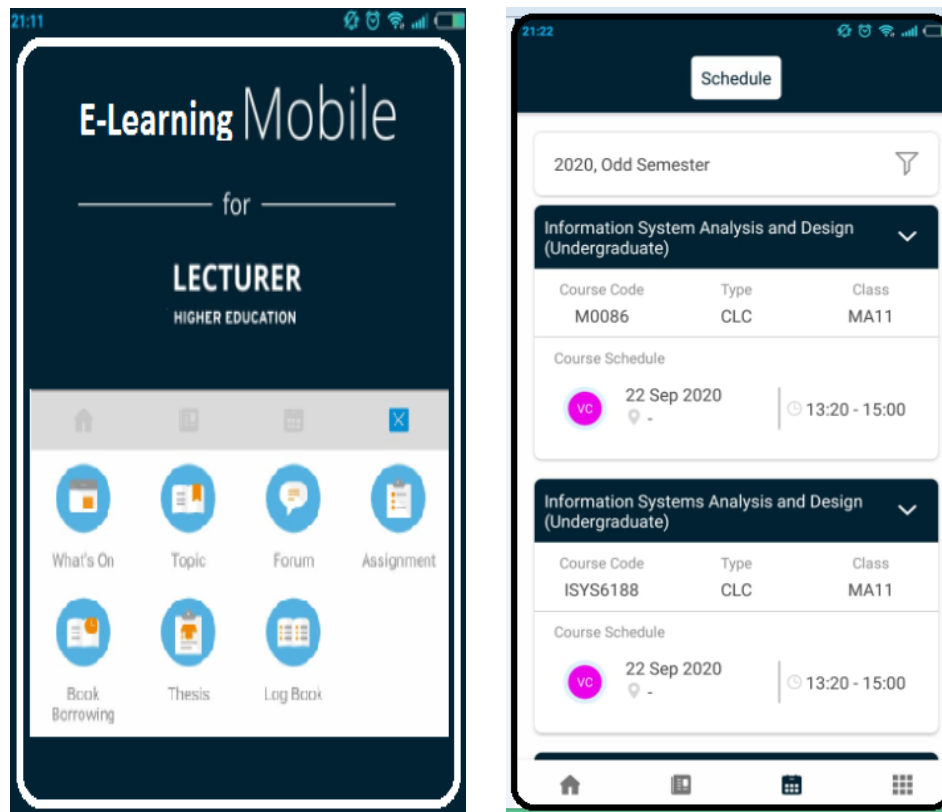
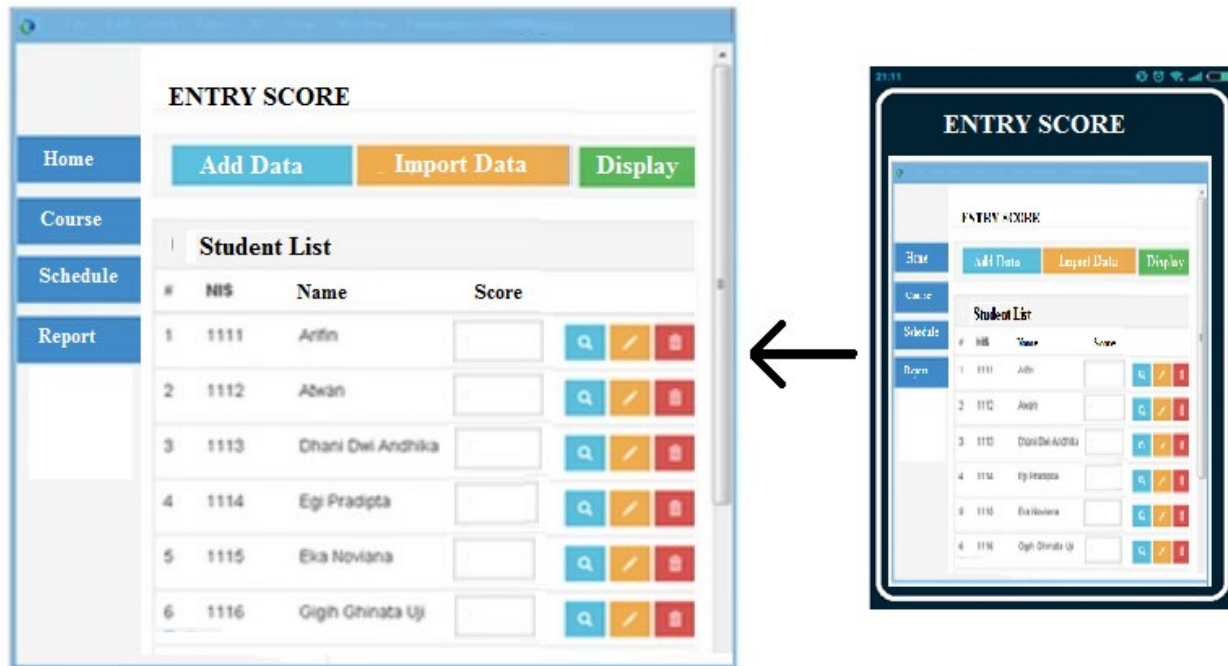


Figure 4. Schedule display

Figure 5. Entry score display



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Biography

Inayatulloh is a candidate doctor at Bina Nusantara University's Doctor of Computer Science. Since 2000, Inayatulloh has been a lecturer at Bina Nusnantara University, school of information system. I am experienced in system development in several companies such as garment, petroleum, retail and others. Scopus indexed publications have been produced with topics related to information systems such as e-learning, e-SCM, e-CRM. E-government, block chain and others

Indra is a Master of Information Systems at Bina Nusantara University, he's currently active as Faculty Member at Bina Nusantara University, School of Information Systems. Since 2006, Indra has been a Senior Consultant for Big Data applications at several Ministries in Indonesia such as Ministry of Industry, Ministry of Forestry and Ministry of Communication and Information. He was also founder and former Board Member of dot Asia Organization (.asia) from 2003 to 2006, and former Managing Partner at .id (ccTLD-ID/country code Top Level Domain-Indonesia) from 1997 to 2006. Several Scopus indexed publications have been made with topics related to Information Systems, such as e-Government, e-Learning, e-SCM and e-CRM.