Conceptual Framework: A Mobile Software Model for Web Based Learning

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The Asian Conference on Society, Education & Technology 2016
Official Conference Proceedings

Abstract
This article presents an innovative project using a mobile software applications technology for a Web Based on-line learning. Currently, mobile devices are very more widely used in our society as we have seen the large number of delivered mobile devices in each year. Therefore, we proposed the adaptive new technologies in an education, a better learning. Learners can be study anywhere on networks. With a rapid development of wireless networking technologies and an innovation in mobile devices, a mobile learning has become another learning area. In addition, applications technology for an on-line learning using the mobile software design is an Information Flow Diagram (IFD) model. It is a model of an application structural design of a prototype via the mobile learning on the web. This diagram will be the main interaction with learners and designer according to user requirements. System designers can more easily understand the system design. Other than simplify the design system this can reduce the number of symbols used in the system design. There have Interface Flow Diagram (InFD) describing the steps taken in a graphical interface in the system design. This objective of this research was to understand the design of mobile applications software based on web learning system using information flow diagram (IFD) model. The purpose is guiding principles and tools for mobile software design of the system. The current status of this research is on developing phase.

Keywords: Mobile software design, Information flow diagram, Web-Based learning

1. Introduction

English language in Thailand is one the most important languages to the study. The studying of English language could help development of the countries. The instructional media for learning used in education is so important. The device is used as an instructional media of instructions to make the learners understanding the lessons more and more. The study has been developed to modern and current situation. The learners interested studying in using a social network. The instructional medias are available on the computer network system that will be the most important role. Therefore, in current situation, the study will be learning via an electronic media for instance CD-ROMs, the Internet, the Intranet, an Extranet, TVs and satellites. Electronic learning (E-learning) is the use of a communication technology as an instructional media of a learning. It can promote learning with effectiveness, especially the Internet coming into studying, and broadcast content through the network system.

E-learning is an important instructional media of instructions. It allows learners to access lessons efficiently. There is the ease of learning, because the system is connected to the device as the main component. Learners can learn without time limits, quickly for lessons and save transportation cost. In addition, learners can learn through any communication device. There don't need to go to a place of learning. The device does not require identification. These types of instructional medias have variety of forms, for instance, a Computer Assisted Instruction (CAI), a Web-Based Learning and however, with the advancement technology of evolution devices includes mobile device.

Mobiles are a portable device that can connect to the wireless data. It works like a computer. For the most part there have multiple exchange contact information with your computer. And most importantly, mobile device can add functionality by virtue software mobile. Hence, an instructional media has been developed from computer learning to mobile learning.

Many definitions exist of a mobile learning in the field. One definition of a mobile learning is the use of electronic learning materials with built-in learning strategies for delivery on mobile computing devices to allow access from anywhere and at any time (Lcarn, 2014). Mobile learning can help learners acquiring knowledges by providing them with digital information and learning materials. Hence, a mobile learning has the advantages of convenience, expediency, and immediacy. Users of mobile learning system will be also effectively promoting learning and motivation, and increase the effectiveness of an education (Xie, & Huang, 2012).

I have had the opportunity to work in a telecommunications company. The company is an Internet service provider in Thailand. For employee training, it is actually the important task of the company. There are new employees and have increase in each month. As a result, trainers and employees will be busy to work every day. In addition, in the classroom for training with a limited space and cannot train many employees at the same time. We would like to solve the problem of their training. The idea is to develop a research training, learning by an electronic equipment, because

learning will be much easier. It can save time and place. Employees can start getting into learning every time.

Hence, I have the idea of a structure designing prototype used an instructional media on a Web Based mobile learning on the design of an Information Flow Diagram (IFD) model. It is a prototype model of an application structural design for the mobile learning on web. The diagram will be the main interaction with learners and designers according to user requirement. System designers can more easily understand the system. Other than simplify the design system, this can reduce the number of symbols used. There have Interface Flow Diagram (InFD) describing the steps taken in a graphical interface in the system. This objective of this research was to understand the design mobile applications software Web Based on-line learning system by Information Flow Diagram (IFD) model. The current status of this research is on developing phase.

2. Related Work

Khan has defined the course Web-Based is a teaching program for hypermedia that teaching by taking advantage of the features and Internet resources to make learning meaningful, promoting, supporting to learning in every way (Khan, 1997).

Kidakan has defined that a teaching on the web in any education may be able to use a Web portal for a school in the media of multiple dimensions, or just offering some information to the teachers, as well as take advantage of the communication on the Internet, such as the written response, in the post and the live text and voice. (Marithong, 2000).

Adisak has defined e-learning (Electronic learning) is to learn its electronic means that e-learning was interpreted differently by their experience, and each one of them. An e-learning is to use technology as a tool in the development of all the time. The progress of technology for the written definition of E-learning is the technology, especially the Internet to promote learning to teach. (PhuangSombat, 2013).

E-Learning is a teaching style or any form of the broadcast content through an electronic media such as CD-ROM, the Internet, Intranets and Extranet or the TV or Satellite etc. The studies of this nature have been introduced into the market in Thailand for a while as a computer aid assistant of learning. An instructional web (Web-Based learning), an online learning (on-line learning) are distance learnings via satellite or through online learning with videos and so on (Technology-based learning, 2001).

Geddes has defined the m-learning that is to acquire knowledge and skills. There is a technology of a portable category wherever and whenever. These results in a change in behaviors that can be classified into four categories for accessing at any time. It creates an environment for learning (Context). The m-Learning helps people to learn from wherever there is a place to learn. For example, the instructors can be at any time, collaborate between students and an instructor anywhere and anytime (Geddes, 2006).

Martin, Andueza and Carro have defined The teaching of mobile phones have a different context from the education, because the educational via mobile phones on the key instruments is the phone with a small and has been limited to learn from a

mobile phone, it will be subject to the character of the school that has used mobile phones. However, it is convenience to use an equipment (Martin, Andueza, & Carro, 2006).
Monchai has believed that a teaching through a phone or a mobile learning (M-learning) is a part of an e-learning. A mobile learning is yet another avenue of an electronic media to support a distance learning that is a new way to the study to be in line with the new approach, and propose a freedom to study the lessons learned through the screen of mobile phones or portable computers (Thainthong, 2004).
Amphol has defined that software design is a design technique. The system design brings users in the form of a brush before creating the actual product. There are specific requirements of design and the ability to apply knowledge of software engineering used in the design. Creating a draft of a service delivering to a qualify as well as programs that are designed to have no errors, must match the intended use commodity and will need to make users felled more satisfied processes of the software design. The software design process will look to run repeatedly. The system needs to be analyzed in the past. Both functionality and data components of the system convert to the design requirements. The terms of design comply with the requirements and can be used to communicate with the programmers (Amphol, 2006).

A mobile is a mobile communications equipment used to carry. This will be used as the basis of the phone. Also it works like a computer because the device is portable; its features are small, lightweight, low power consumption. It currently serves in several exchange contact information with computers. Software design is the design of the system software. The software is designed to help users, and works to meet the needs of users. The software design must be designed to match the job description of various software that have worked out differently. Each software design aims to make software works better in different manners. Some structural features of the software incorporate but operates differently. It could make to determine a control of software architecture (Mobile Software Design, 2004).

From the literature reviews, we have found that many online learnings demonstrate the technology's evolution from education. An online learning has developed from an instructional media of a web-based learning on the computer system, then a web based learning on mobile devices. However, software design for an instructional media discussed above might not serve the needs of an instructional creation. Therefore, this research will be a new approach to design a mobile software that can provide a prototype model of a mobile software design to match the general objectives of the most uses.

3. Proposed Framework

We propose the conceptual framework that composes of two layers: an information flow diagram (IFD) layer and an interface flow diagram (InFD) layer as illustrate in figure 1. An information flow diagram (IFD) is a diagram that show an information of receiving input data, output data, actions. Diagrams can present interfaces to describe the form of symbols.

The environment of the system describes processes that will take place on each screen, and what steps of the system perform during the execution. The diagram also shows the correlation of interaction databases. With a screen that an information is

used, users can get information of each screen in the system. Symbols uses in the diagram composed of user interface, data store, and data flow.

An information flow diagram (IFD) layer composes of symbols as the following:

- User interface uses for the user interfaces on one screen. This describes the main data input and overall results in the screen. It must include the number and name of the screen specified by the user interface. Rectangles will represent as a sign. Names and numbers and the description contained inside.
- Data store is a symbol. The database is associated with any user interface associated with each screen. The screen uses and interact the data from any database. It uses a table symbol to represent a data store, and contains the name and number of the table in the symbol specified by the number does not need any sort. However, it must be unique.
- Data flow represents the orders of sequence for interactions of users. The transmission between each user interface is used to display by the symbol of the arrows. The arrows point to the destination of the data and a sentence explains it.

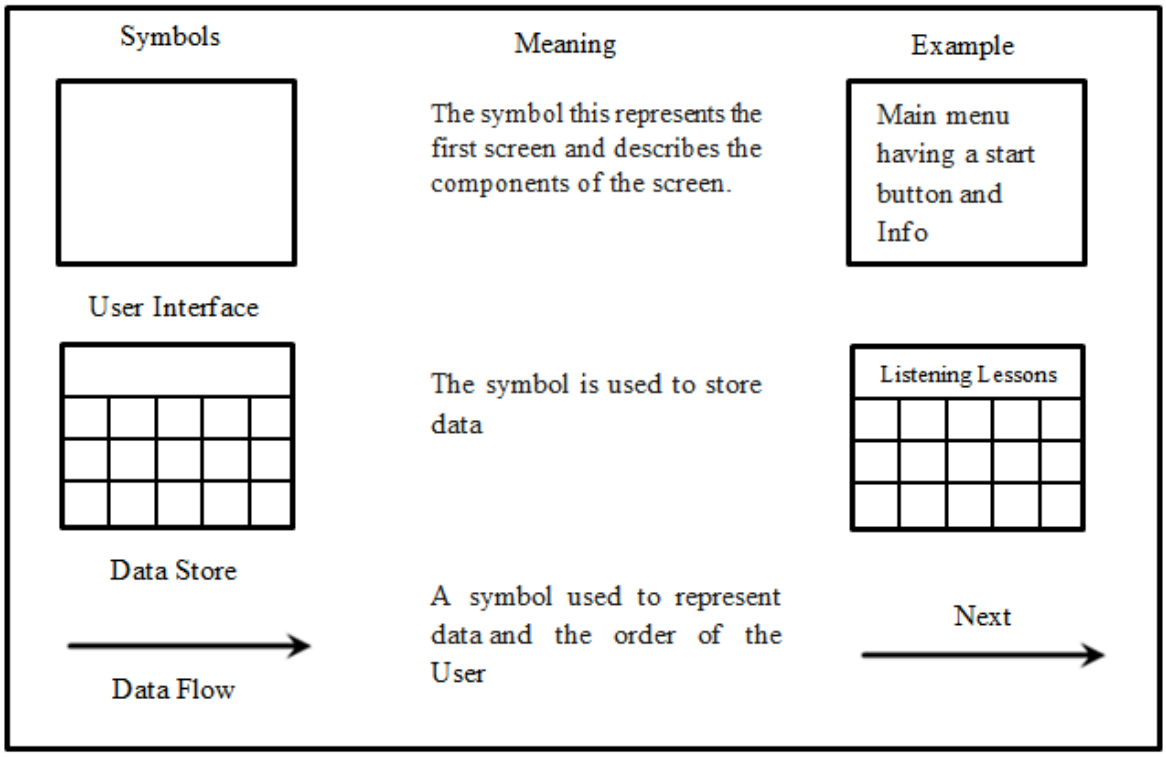

Fig.1. Proposed Conceptual Symbols used in this system.

An information flow diagram (IFD) layer composes of symbols that explains the system steps will execute on each screen and determine the validity of the processes running on the system. This information will be used in the interface flow diagram in the next step, to describe the work and the relationship of each screen in view of the graphics in interface flow diagram (InFD) layer.

As illustrates in figure 2, an interface flow diagram (InFD) layer is a diagram that shows the flow of information at a high level consisting of interfaces with the users. This gives an overall picture of the system even more. It composes of three elements that will demonstrate the relationship between user interface and the database.

- User interfaces are important to show that each screen has some elements. There are cases where some user can interact with the system and what the system interacts with users. The system should make a similar user interface in a graphical form. The shape depends on the size of the user interface is actually used.
- Data store is a symbol of the database associated with a user interface showing between each screen and the database.
- Data Flow uses to show the flow of information between the user interfaces or between user interfaces and data store, using the arrow represents the flow of information queries. The arrows point towards the end of queries of the users and have labeled statement that interact with the system.

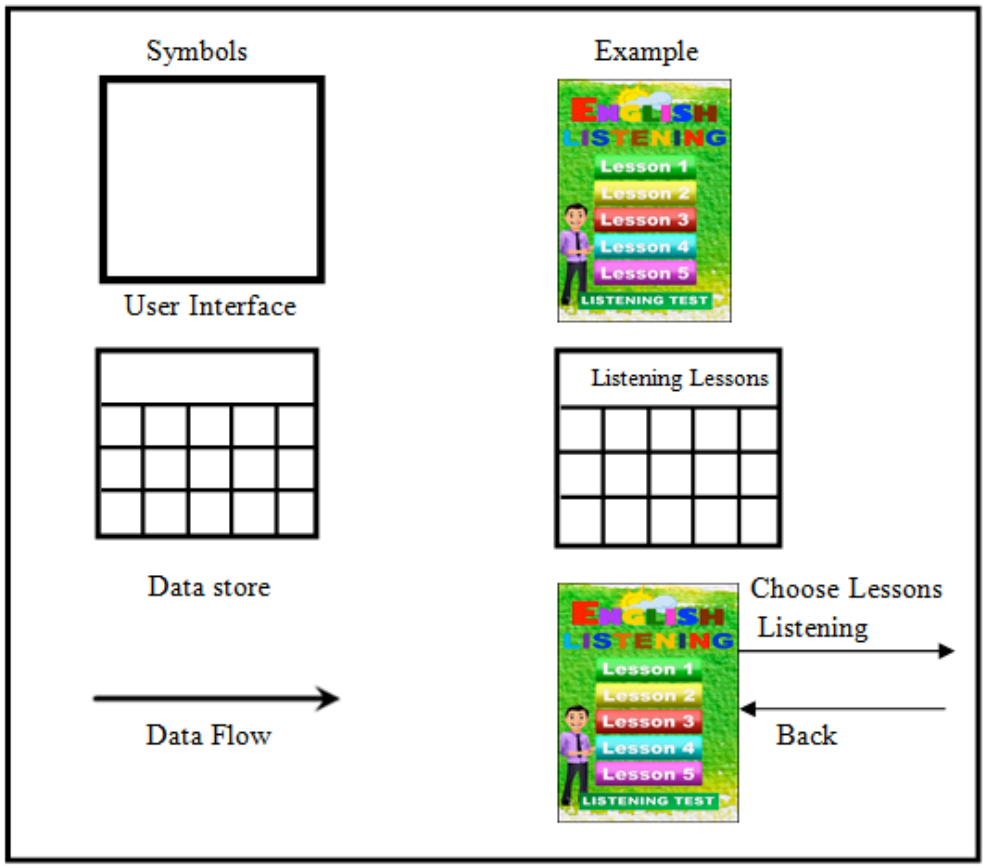

Fig.2. Proposed Conceptual Interface Flow Diagram used in this system.

From the mentioned above, this research is a conceptual framework model of application structural design of a prototype via the mobile learning on web. We have designed a prototype structures to English learning. This conceptual framework is designed of the system. There are design and explain given user to contact the system direct. There are explaining process one process of each screen how it works, as well

as information on results and action, within the screen. Users will be able to interact with the system design. The model can represent the overall process of the system including the flow information, the ordering of user's interactions within the system from screen to another screen in graphics user interface (GUI). An information flow diagram (IFD) of English learning can use to deploy and develop for any mobile learning.

However, the research has conceptual framework used to design the layout display Information Flow Diagram (IFD) will be shown as part of the infrastructure, Information and coordinate communication between the computer and the user include all processes, no separation and support for accuracy. The clarity and flexibility of the system allows the user to understand system overview screen is designed to highlight the part contacting the user as primary. It does not matter what the information will be received into the system or process. There are works with the information into the system, but are interested in just how users will interact with the system. However, there is nothing that interacts with users when users interact with one occurred on a particular screen. Information Flow Diagram (IFD) will be to encourage the reduction of the number of relationships that do not relate to each other out of the process in the system, such as a process 1 Process display command information flow between the user and the screen will display the users run only, which reduces unnecessary and the relationship of the individual processes in the system out. The symbolic relationship between a user and a screen with a database that is used to design the underlying structure of the system is clear, straightforward and no symbol, too using the data can communicate with each other in each process.

4. Conclusion

This research paper proposes a mobile software model using an information flow diagram to demonstrate how to develop a web based learning. The model has many benefits for mobile software designers and developers. It improves expressional ability in a mobile software design. The model also assists an instructional media, development, and technological advances for m-learning. There are many medias of instructions in mobile web based learning to enhance a learning efficiency. Learners can be learned easily, quickly, anywhere, and anytime. M-learning has been collecting critical content, bring the issue to determine the exact cause, and solve problems the current situation. There are the design and development of a new mobile information system. Our technique is a conceptual framework designing for a mobile prototype of learning and teaching. The underlying structure and design are simple and clear, according to the software engineering design as well.

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