

Blended Problem-Based Instructional Model via Facebook Application on Mobile: Are You Ready for m-Learning?

Watcharapol Wiboolyasarin

Abstract—Nowadays, many are accessing social networks from mobile devices rather than from desktop computers, Facebook is currently the most commonly-used online social network among people and becomes the most-used mobile app in the U.S. by introducing a controversial new mobile interface, Facebook Home. The Facebook app now represents our smartphone-centric lives which should be applied in education. This paper will then illustrate the development of Blended Problem-based Instructional Model via Facebook Application on Mobile. The procedures of this paper were divided into two phases: The first was to study conceptual framework of related literatures, included blended problem-based learning, and Facebook application. The second was to develop the Blended Problem-based Instructional Model via Facebook Application on Mobile. The end results have shown that this model consisted of eight steps, 1) Preparing (F2F), 2) Identifying (Online), 3) Analyzing (Online), 4) Searching (F2F and Online), 5) Creating (Online), 6) Testing (Online), 7) Gathering (F2F), and 8) Evaluating (F2F and Online). One last word must be said that with the use of Facebook application on mobile devices, learners can learn anywhere and at any time.

Index Terms—Blended learning, problem-based learning, Facebook application, m-learning.

I. INTRODUCTION

M-learning or "mobile learning" refers to a subset of e-learning, educational technology and distance education, focusing on learning across contexts and learning with mobile devices. It is any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies via different application on smart phones, especially using Facebook application as a communication tool for educational purposes. Then why must be Facebook application? This paper will argue that *Facebook* is a social utility that connects people with friends and others who work, study and live around them. People use *Facebook* to keep up with friends. As of February 2011, Facebook has more than 500 millions of users around the world. 50 percent of total users actively login the site every day. Users spend a total of 700 billion minutes per month on Facebook. More than 200 million users have mobile connection to Facebook. There are about a billion of locations (pages, groups, activities, and etc.) in Facebook where users interact with each other. An ordinary user is connected to 80 groups, activities or society

pages and shares an average of 90 contents per month. More than 30 billion of contents per month are shared by users [1].

It is a fact that Facebook is the largest social network with the biggest audience compared to similar media, particularly because it enables people communicate with their friends and exchange multimedia-based information conveniently. Hundreds of people, unaware of each other's, may gather around a particular purpose via this social network and they may even decide to act together. Many individuals increasingly spend more time on this new medium. Despite it is generally accepted and as a social network, Facebook could also gain a unique position as a learning technology applied in many important pedagogies.

Problem-Based Learning (PBL) is one of student-centered pedagogies in which students learn about a subject through the experience of problem solving. Students learn both thinking strategies and domain knowledge. With this Facebook Application, Instructors could design and develop the blended problem based instructional model for active students by setting the goals as to help the students develop flexible knowledge, effective problem solving skills, self-directed learning, effective collaboration skills and intrinsic motivation. In other words, with the use of Facebook application on mobile devices, learners can learn anywhere and at any time.

II. BACKGROUND

A. Blended Problem-Based Learning

Problem-based learning is an authentic learning activity that is motivating and requires students to work together in groups to solve a problem. Students think through how they will approach the problem, divide up tasks and regulate their own progress. This learning method usually begins with an open-ended problem around which student groups organize their studies. The students discuss the problem and work together towards a solution by sourcing and using learning resources. Problem-based learning is based around sets of activities that can take place sequentially or concurrently and sometimes iteratively. These activities are reflective and constructive, raising students' awareness and skills in solving complex problems. Littlejohn and Pegler (2007) [2] illustrated three stages within the blended problem-based learning process:

The initial planning stage involves students defining their own learning objectives and setting tasks. This stage could be supported using e-tools that support iterative project planning. These project planning tools would enhance collaborative planning, since all students would have access to project

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plans at all times.

TABLE I: THE SYNTHESIZED PROCEDURES OF PROBLEM-BASED LEARNING [3]-[6]

Kolmos et al. (2007)	Khlaisang & Koraneekid (2009)	Satiman, Bunlue, & Sithiwong (2009)	Sutanchaiyanonta (2003)	Author
1. determine concept and general principles with courses	1. prepare	1. identify fact or information	1. understand vocabularies and their meanings	1. prepare student by informing data or facts
2. describe learning results for problem	2. offer problem	2. show idea for solving problem or possible cause	2. identify problem clearly	2. identify problem clearly
3. brainstorm and summarize complicated problem into ill-structure	3. identify and analyze problem	3. seek for additional learning issues	3. analyse problem	3. show ideas or analyze problem
4. divide problem into phases	4. create learning issues and seek for information	4. plan or plot how to get information for solving problem	4. determine hypothesis related to the problem	4. plan, search, or study additional information
5. develop instructional suggestion	5. synthesizes and test information		5. arrange hypothesis as importance	5. create hypothesis
6. assist learners to identify resources	6. summarize principle from solving problem		6. write learning objectives	6. synthesis and test hypothesis
	7. evaluate		7. seek for additional information from other sources	7. gather all conclusions and approaches from test
			8. gather and synthesis all information as well as check hypothesis	8. evaluate
			9. summarize conclusion and principle learning form problem	

While developing solutions, students could create their own resources and integrate these self-generated materials with those provided. This process is best supported by content management tools, such as databases or repository tools, which are essentially central storage spaces.

During final testing and evaluating stages, peer discussion and reflection may help evaluate the effectiveness of the solution. These discussions could take place face to face or could be supported by communications tools.

All this requires us to synthesize the procedures of problem based learning from many educators applied and extended results as shown in Table I.

B. Facebook Application as a Communication Tool

Continuing on, four communication tools on Facebook Application are able to use in this instructional model as following:

1) Chat or group chat

One can start a chat by selecting an online avatar of his friend in contact list or create a group chat by selecting two or more online avatars and then type any message, send, and wait shorter for reply (Fig. 1).

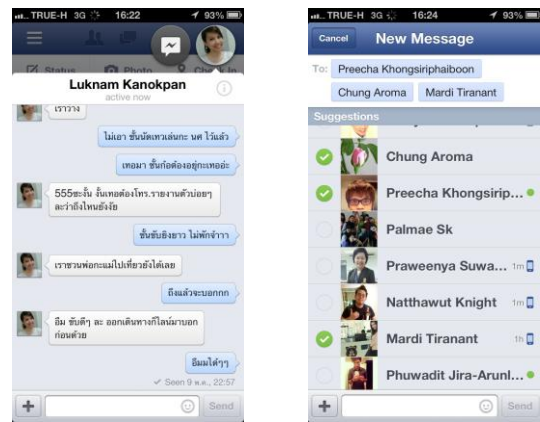


Fig. 1. Chat and group chat.

2) Wall post

One can start a new topic by selecting status on his profile or another, writing any message or topic, and then posting. Other users who see your topic will write replies in a comment box. Wall Post can be used as a web board which has a function to inform news and exchange information and allows everyone to visit and one can set a question and express opinion on Facebook (Fig. 2).



Fig. 2. Wall post.

3) Note

One can write a note by selecting Note, write a Note, then typing title, body, selecting privacy level and publish. Note can be used as a blog which is a discussion or informational

site published on the Facebook and consisting of discrete entries or Note (like a personal diary) typically displayed in reverse chronological order (Fig. 3).

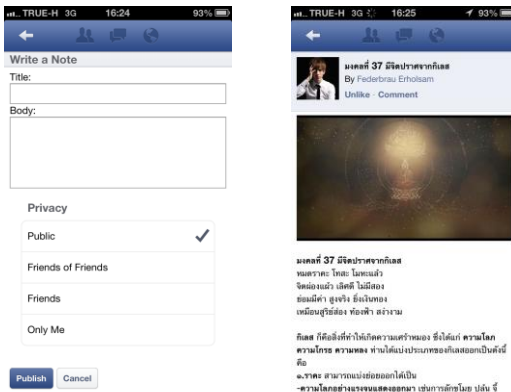


Fig. 3. Note.

4) Message

Similar to Chat or Group Chat, One can write any message with various purposes to one or more friends but not urgent issues to instantly reply. Message can be used as an e-mail which is a method of exchanging digital messages from an author to one or more recipients (Fig. 4).



Fig. 4. Message.

III. BLENDED PROBLEM-BASED INSTRUCTIONAL MODEL VIA FACEBOOK APPLICATION ON MOBILE

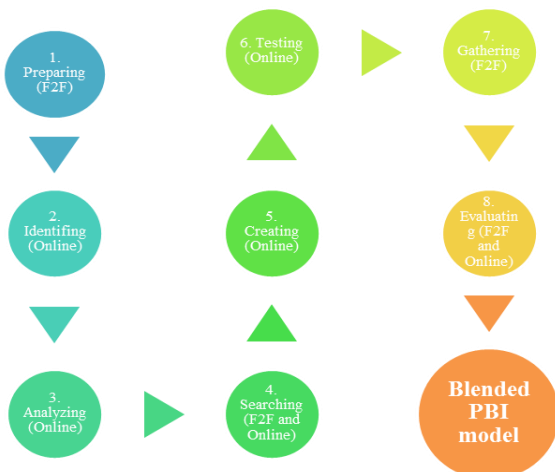


Fig. 5. Blended problem-based instructional model.

We arrived at the initial conclusion, another idea worth considering is the result from the background above; a blended problem-based instructional model was carefully designed and developed as shown in Fig. 5.

Most importantly, author gathered and integrated Principles, methods, and four communications tools, from Blended Problem-Based Instructional Model as well as Facebook Application on Mobile as presented in Table II.

TABLE II: PRINCIPLES AND METHODS OF BLENDED PROBLEM-BASED INSTRUCTIONAL MODEL BY USING FACEBOOK APPLICATION ON MOBILE

Principles and Methods of Blended Problem-based Instructional Model	Using Facebook Application on Mobile
<p>1. Preparing (F2F) Instructor describes objectives, learning activities, evaluation, and online communication tools on Facebook</p>	Instructor creates “Group” on Facebook website for his course, then posts problem situation and question for learners to analyze. Next, Instructor informs objectives, learning activities, and evaluation approach, then introduces online communication tools on Facebook.
<p>2. Identifying (Online) Students study problem situations and introduced question in order to be approaches for analyzing</p>	Students study situations and question in Group that instructor created on Facebook via their own mobile devices.
<p>3. Analyzing (Online) Students plan to work together, then analyze and solve problem</p>	Instructor creates “Chat” or “Group Chat” on Facebook for students to work together and tells them that when they faced some trouble, they could send instant message to him.
<p>4. Searching (F2F and Online) Students study, search, collect data from various resources which instructor provided or from online system</p>	Students in each group separate to collect data, evidences from various resources even in classroom, library, websites, data bases, and etc. Later, they write all information on “Note” in group.
<p>5. Creating (Online) Students predict answers by using own knowledge and experience before sharing with members in group, then creating hypotheses from knowledge sharing or evidences.</p>	Students discuss each other with posting on “Wall Post”. First student writes a hypothesis and others reply, share, or write new hypotheses.
<p>6. Testing (Online) Students cooperatively analyze all data in order to test their hypotheses</p>	Student then discuss all hypotheses and share their opinions as information appeared on “Note”.
<p>7. Gathering (F2F) Students summarize knowledge, principles, and how to solve problem and share their aspects to other groups in classroom</p>	Students summarize their analyzed ideas to be approach for solving the problem. In addition, They can also share ones to other groups in classroom.
<p>8. Evaluating (F2F and Online) Instructor evaluates students’ works based on their participation and work, then gives feedbacks</p>	Instructor evaluates students’ works and let them know feedbacks together in classroom or write comments on their Note or “Group Chat”.

IV. CONCLUSION

Facebook is one of Social Media which is a current strength and becoming very popular in online social everywhere in the cyber world era, today Facebook has demonstrated the viability and effectiveness of communications in the ubiquitous learning which can occur anywhere with the influence of computer technology on creating a spider web network or World Wide Web (WWW) that a lot of variety of users use social media in different purposes. If they brought about Facebook application’s potential and advantage to use as M-learning in an educational system, it could be trusted that the benefits of the

new educational communications system were very valuable and optimal performance. In addition, one of the most beneficial aspects of problem-based learning is that students are taught the discipline needed for self-study and self-motivation. Not only will students have the skills to study and research on their own, but they will also find the enthusiasm and determination needed to get through their assignments. Students also learn how to productively communicate with each other in order to work as a group and to learn from one another via Facebook application on mobile devices. They are encouraged to take responsibility for their own groups and must cooperate with each other at anywhere and anytime if they wish to do well in their assignments.

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Watcharapol Wiboolyasarin was born in Bangkok, Thailand on September 4th, 1986. The author graduated from Ramkhamhaeng University, Thailand on October 2005, a B.A. with a major in English and minor in mass communication and also from Chulalongkorn University, Thailand on March 2009, a B.Ed. (secondary education) with two majors in Thai language and educational technology (1st class honor).

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