

# E-learning Model Design using Social Network and Internet Messenger

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## ABSTRACT

Utilization of information technology in learning is a new challenge for education in Indonesia. The widespread use of information technology all over the world can also be seen in the educational field. More and more e-learning tools are invented and shared through the Internet. Eventhough in Indonesia the number of e-learning users is relatively still very small.

The intensive use of Social Network and Internet Messenger by the students becomes an opportunity for exploiting the media to conduct various activities, especially the interaction between lecturers and students. Student interest in accessing the forum and other distance learning facilities is currently low. However, by integrating new learning model that utilizes internet popular application, we expect students to have more chances to be introduced to e-learning activities.

## Keywords

E-Learning, Social Network, Internet Messenger.

## 1. INTRODUCTION

The increasing widespread use of technology in supporting human life becomes incredible phenomenon at this time. By utilizing an appropriate technology, things that are not possible become possible and the difficult becomes easier, including its use in education. Utilization of technology in education enables the interaction between lecturers and students outside the classroom without having face to face, but virtually.

These days, conventional education system still a mainstay for education, especially higher education. Utilization of technology is still considered very low, especially for courses in electronic or better known as e-learning. There are many facilities that have been developed by several vendors to support e-learning activities, or by utilizing other public services, such as forums.

Another well-known media which can be used for e-learning is MoodleTM. As a software for managing e-learning, it's good enough, because of well-equipped of facilities. But the media interaction among students and lecturers is still considered not ideal for an interactive lecture.

Basically, with all internet applications today, despite some weaknesses in each application, are sufficient to be used as e-learning. Beside the weaknesses of application media, the problem is how to increase student interest in learning activities. Almost all of students these days, have the same interest in using social networks and internet messenger. The phenomenon that occurs is an interesting thing.

## 1.1 Objectives

Two objectives are going to be achieved in this research, i.e.: (1) to assess the existing media to be used in e-learning, and (2) to design e-learning model by harnessing the most popular media today.

## 2. THEORETICAL REVIEW

The rapid development of Internet technology can not be separated from a variety of innovations and breakthroughs are made to facilitate various activities.

### 2.1 The Evolution of Commercial Applications on the Internet

With the commercialization of the Internet in the early 1990s, we have seen an explosion of commercial applications. These applications evolve through four major phases: presence, e-commerce, collaboration, and integration.

	Presence	E-commerce	Collaboration and Interaction	Integration and Services
<b>Emphasis</b>	Eyeballs (human review)	Revue, expansion	profit	Capabilities, services
<b>Type of transaction</b>	No transaction	B2C, C2C, C2B, G2C, e-CRM	B2B, B2E, supply chain, c-commerce, G2B	Portals, e-learning, m-commerce, i-commerce
<b>Nature</b>	Publish information	Process transaction	Collaborate	Integrate, provide services
<b>Target</b>	Pages	Process transaction	Digital systems	Digital environments
<b>Concentrate on</b>	Web sites	Web-enabled existing systems, dot-coms	Business transformation consolidation	Internal and external integration
	1993-1994	1995-1999	2000-2001	2001-2005

Figure 1. The evolution of the Internet over time.

### 2.2 E-Learning and Distance Learning

There can be some confusions between e-learning and distance learning since they overlap each other. Therefore we begin with brief definitions.

E-learning refers to learning activity supported by the Web. It can either be done inside classrooms or everywhere, as a support to conventional teaching, not only when students work on the Web at home or in the classroom but also in virtual classrooms, in which the entire coursework is done online, called as distance learning.

Distance learning (DL) refers to situations where teachers and students do not have to meet face-to-face. It can be done in different ways. The oldest mode was correspondence, where all communication was done by mail. As early as the 1920s the radio was added to support DL. Then came voice cassettes, videotapes, and TV for delivering lectures. Students communicated with professors by “snail mail,” telephone, and faxes. A breakthrough occurred when the CD-ROM was introduced, since they are a sophisticated media that enabled self-testing and feedback. Finally the Web provided a multimedia interactive environment for self-study.

### 2.3 Benefit of E-Learning

In theory, there are many benefits to e-learning: Self-paced and self-initiated learning have been shown to increase content retention (Urdu and Weggen, 2002). Online materials offer the opportunity to deliver very current content, of high quality (created by content experts), and consistent (presented the same way every time). Students in e-learning situations have the flexibility of learning from any places, at any time, and at their own pace. Finally, some learners in both educational and corporate settings appreciate what they perceive as the risk-free environment offered by e-learning, in which they feel more free to express themselves than in a face-to-face learning setting. In corporate training centers, learning time generally is shorter, and more people can be trained due to the faster training time. As a result, training costs can be reduced by 50 to 70 percent (Urdu and Weggen, 2002), and savings can be made on facility space as well.

E-learning provides a new set of tools that can add value to traditional learning modes. It does not usually replace the classroom setting, but enhances it, taking advantage of new content and delivery technologies. The better the match of content and delivery vehicle to an individual’s learning style, the greater the content retention, and the better the learning results. Advanced e-learning support environments, such as Blackboard and WebCT, add value to traditional learning in higher education.

### 2.4 Electronic Chat Rooms

Electronic chat refers to an arrangement whereby participants exchange messages in real time. The software industry estimates that millions of chat rooms exist on the Internet. A chat room is a virtual meeting place where groups come to gab. Chat programs allow you to send messages to people who are connected to the same channel of communication at the same time. It is like a global conference call system. Anyone can join in the online conversation. Messages are displayed on your screen as they arrive, even if you are in the middle of typing a message.

The chat rooms can be used to build a community, to promote a commercial, political, or environmental cause, to support people with medical problems, or to let hobbyists share their interests. Since many customer-supplier relationships have to be sustained without face-to-face meetings, online communities are increasingly being used to serve business interests, including advertising.

### 2.5 Commercial (public) portals

Commercial (public) portals offer content for diverse communities and are the most popular portals on the Internet. Although they offer customization of the user interface, they are still intended for broad audiences and offer fairly routine content, some in real time (e.g., a stock ticker and news on a few pre selected items).

## 3. CURRENT SYSTEM ANALYSIS

Classroom teaching methods are still considered as the best method of teaching today. This proven method is still the most widely applied in both Indonesia and abroad. Basically the utilization of existing technology, teaching methods can be improved with the use of e-learning media.

### 3.1 Conventional Method (class room)

Conducting classroom learning requires a high degree of discipline, because it is a scheduled activity and place should arranged before. Conventional learning model can be seen in figure 2.

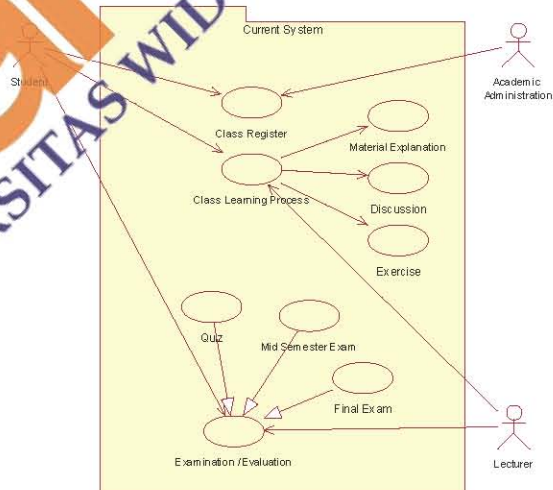


Figure 2. Class room

Students wish to follow a specific course required to register, and after getting the schedule, new students can follow the lectures in class. Explanatory material, discussion and delivery tasks, those things are usually done during the process of teaching and learning in the classroom. At the appointed time, the student will be evaluated against the results of learning by joining exams. There are three exams that can be done by the lecturers who can be a quiz, mid-semester exam and final-semester exam.

As an embodiment of the classroom conditions in general, designing e-learning will always refer to current existing mechanisms system.

### 3.2 Forum (Groups)

A discussion forum is a gathering place for various groups with the same interests. The facilities in this media could be used in e-learning process. In figure 3 we can see how the forum used as a medium of learning. Students who already have an email account can enroll in this forum. Once enrolled, the student can read the latest information from the lecture and can join the discussion about the topic given and can also upload and download materials. One common limitation is that many of the forums do not provide media chat. So the discussion that occurred at the forum will be responded after the members get an email sent by other members. The interaction process by utilizing an email through the forum would be very monotonous and boring, because it takes a long time to share information.

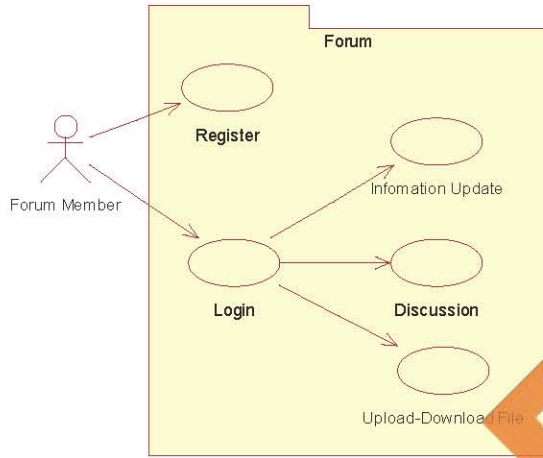


Figure 3. Forum

### 3.3 Learning Management System (LMS)

Continues improvement in developing a system is need to provide the various kinds of services and facilities that are adequate for e-learning. The capabilities development of e-learning or better known as the learning management system has been constantly updated and improved. The mechanism of action of the Learning Management System applications can be seen in figure 4.

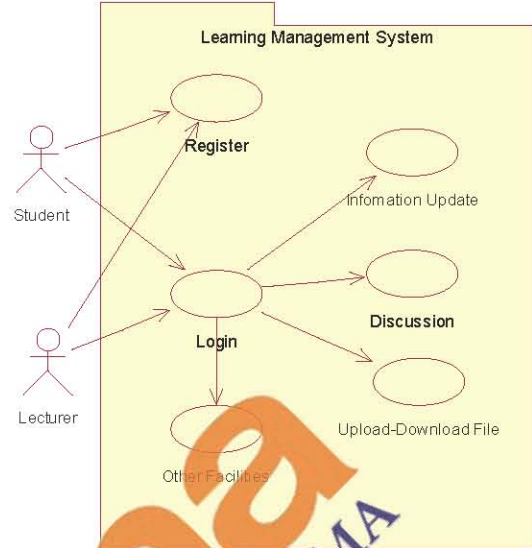


Figure 4. Learning Management System

Lecturers and students who want to be able to use this system must register first. Each account will have different capabilities within the system. After having an account on LMS, teachers will conduct the lectures, and then students can enroll in courses. Information about the implementation of lectures will be updated regularly and can be accessed by members of the LMS. Not only between students and lecturer can conduct the discussion but also for higher level. However, there is one limitation of the existing LMS, that the facilities for conducting the chatting between students and lecturers is considered not enough yet.

Although Moodle has provided adequate facilities for e-learning activities, the users of this media is still low all over the world, especially in Indonesia. It can be seen in the figure 5 below that the use of Moodle in the countries with dark gray are better than light gray.



Figure 5. Moodle Population

#### 4. E-Learning Model Design

Nowadays, internet is very popular and could give significant changes in the use of internet technology today. In addition to the perceived changes, the total number of users of the application and the increment is very unusual

##### 4.1 Popular Application: Yahoo Messenger (YM)

Yahoo Messenger™ is one of the products from Yahoo that becomes the most popular chat applications today. Various facilities available in YM are developed very rapidly compared with the initial appearance. YM utilization mechanism can be seen in the figure 6 below.

Before you can use YM, users must have an email account at YM or yahoo mail, and then they can use various facilities that are available in YM, beginning from the setting, the Web Cam, Call, Chat and file sending. Strong support, continuous improvement, good infrastructure and full support from Yahoo as a founder, makes YM as one of the most popular internet messenger these day

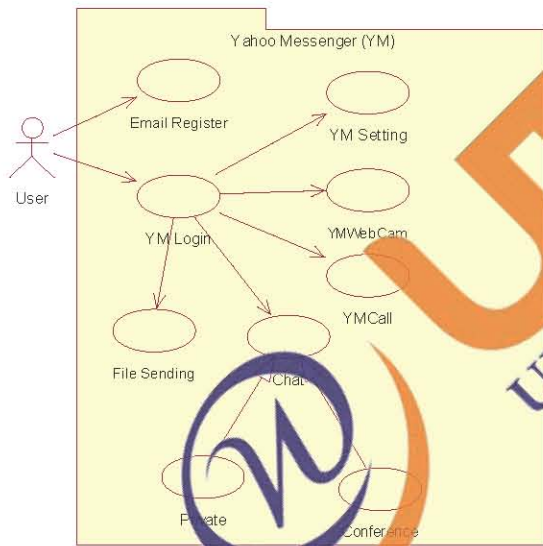


Figure 6. Yahoo Messenger

By using chat services on YM, it can be used as a medium of discussion just like in class discussions, sending file, picture or any data or even video file.

The discussions conducted not only limited to 1 class like a big discussion, but can also be performed for each group with a lecturer as moderator. This process needs quite lot of attention and concentration, but it will be very useful for students who do this interaction if they are supported with adequate documentation to get the process evaluation.

##### 4.2 Popular application: Facebook

Facebook™ is one social networking (SN) application which is very famous today. The development and utilization of these applications throughout the world are an interesting phenomenon in the Internet world today.

Basically, the mechanism to use facebook is quite easy, users who want to utilize this facility are required to have an email account like yahoo, gmail, and others. Once registered, users can immediately take advantage of existing facilities in this application. Facebook has an interesting interfaces, good facilities, provides convenience to interact with a groups of friends or fans.

This fans facilities, basically can be used for setting the teaching and learning processes for e-learning activities. Because one of the facilities of the fans is good enough to make a media event and invited the members of the fans to interact on events that have been determined. Facebook utilization of mechanical outline can be seen in the figure 7 below

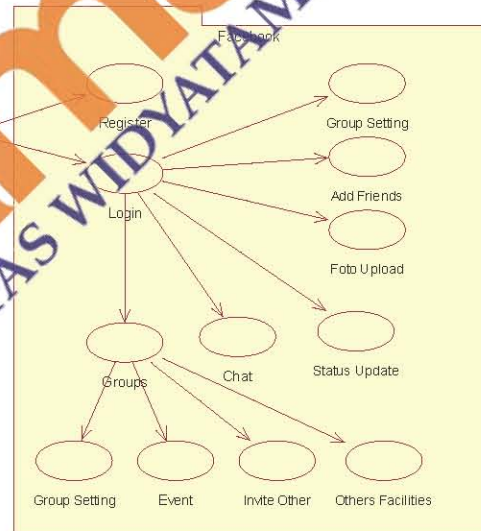


Figure 7. Facebook

##### 4.3 Internet Application Usage

The utilization and development of applications on the internet have changed quite rapidly. In table 1 below, we can see how the number of users and the growth of various applications that have been discussed in earlier sections.

**Table 1. Internet Application Usage**

**Internet Application Usage**

Application	Region	Ratio/Grade/Growth
Forums (Yahoo Groups)	World	decreasing
	Indonesia	na
	Bandung	na
LMS (Moodle)	World	34,846,708/-/-
	Indonesia	na
	Bandung	na
Internet Messenger (YM)	World	94,300,000/+30%
	Indonesia	-/6th/-
	Bandung	-/4th/-
Social Network (Facebook)	World	400,000,000
	Indonesia	14,681,580/4th/1536.7%
	Bandung	-/5th/-

**Sources:**

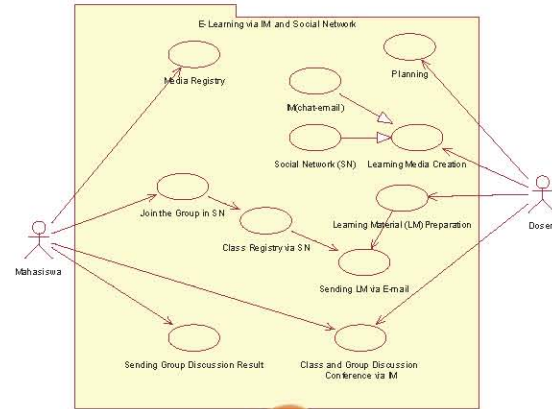
- [www.google.co.id/trends](http://www.google.co.id/trends)
- <http://www.facebook.com/press/info.php?statistics>
- <http://www.niddburcher.com/2009/12/facebook-usage-statistics-by-country.html>
- <http://moodle.org/stats/>

In the table above we can see the usage of multiple applications on the internet begin to decline even the application quite good, for example forums and LMS. For Internet Messenger (YM) and the Social Network (Facebook) user in fact has increased both worldwide and Indonesia.

**4.4 Proposed E-learning Design (Yahoo Messenger & Facebook combined)**

Based on the results of the study of these applications and the amount of current usage, We can see a significant increase in the amount of use of Internet applications, such as Internet Messenger (Yahoo MessengerTM) and Social Network (Facebook) but not the LMS. Although The applications for the Learning Management System (LMS), which is owned by Moodle is sufficient for e-learning activities but there is a phenomenon that this application is not interesting enough to be used in e-learning activities, especially in Indonesia.

The existence and consolidation of facilities in this application, could represent the activities conducted in classroom. The implementation of the activities in classroom can be delivered through SN, whereas for the delivery of content and discussions, in a classroom or in a group can be conducted via IM. E-learning design by utilizing 2 application such YM and Facebook can be seen in the figure 8.



**Figure 8. E-learning Design**

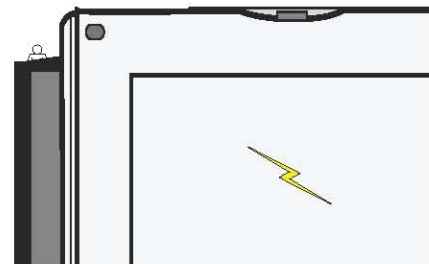
The existence and consolidation of facilities in this application, could represent the activities currently lecturing in class. Activities for implementation of activities in class lectures can be delivered through SN, whereas for the delivery of content and discussions, whether in a classroom or in a group can be conducted via IM. E-learning design by utilizing 2 application such YM and Facebook can be seen in the figure 8.

The proposed design has nine activity steps that is described in table 2

**Table 2. Steps of New Learning Design**

No	Activity	PIC	
		Lecturer	Students
1	Plan on e-learning class	✓	
2	Learning media creation (on Internet Messenger/IM and Social Network/SN)	✓	
3	Media Registry (IM and SN)		✓
4	Join group or fans in SN		✓
5	Class Registry via event in group (SN)		✓
6	Learning Material Preparation	✓	
7	Sending Learning Material via IM/email according to class registry	✓	
8	Class and Group Discussion Conference via IM	✓	✓
9	Sending group discussion result		✓

The design of learning activities infrastructure is quite simple, but the connection speed to internet is very important as well, especially if the users wish to use mobile device to perform these learning activities. Infrastructure that is used can be seen in figure 9.



**Figure 9. Infrastructure**

#### 4.5 Discussion: Application Problem of Proposed E-Learning

With a variety of breakthrough technologies currently available, it is possible to conduct e-learning for extra mural learning process. It should be planned carefully as it may face possible legal and educational regulation problems. Internal educational institution as well as directorate for higher education should be assured as the new communication and delivery design will not distract the regulation on distant learning activities.

### 5. Conclusion & Suggestion

In the implementation of research activities, there are some things that can be concluded and suggested for readers and other researchers.

#### 5.1 Conclusion

Based on the results it can be concluded as follows:

1. There are various Internet applications that can be used for e-learning activities, and It is open for teachers to use a combination of existing applications, so that teaching and learning activities can be made more attractive and fun..
2. E-learning instructional model utilizing the Internet messaging applications (Yahoo Messenger) and Social Network (Facebook) can be used as an alternative solution of e-learning activities today.

#### 5.2 Suggestion

Based on the results of research conducted, it is an open opportunity to make breakthroughs in the future:

1. Although a variety of bureaucratic and regulatory constraints still be a consideration, but in my opinion, creating conditions conducive to learning is more important. Various models of learning that utilizes a variety of technology today, it would be possible.
2. With a variety of existing facilities, various initiatives could be taken to increase students' desire to learn. The high interest of students to utilize the existing Internet applications can now be an opportunity for teachers to be able to collaborate and discuss with interesting way.

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