# DEVELOPMENT OF LIVE LEARNING SYSTEM USING MULTI INTEGRATED APPROACH

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***"To my beloved my father Mr. Abdallah Al-Sabawi and my mother Mrs. Basima Ahmed, to my two elder brothers Muhanned and Omar, as well as to all my sisters. I would say to them, I am very proud of you, thanks for your encouragement, supportive situations. Conversely, to all my best friends Mohammed Al-Ali, Mohammed Hasson, Omar Ismail, Omer Ahmed and Yahya Qusay, thank you for being faithful and helpful. It is also nice to mention our sweet memories"***

***To my supervisor, Dr. Othman Ibrahim your good deeds will always be remembered.***

***lastly, To all my fellow friends,***

***thanks for everything...***

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# ABSTRACT

The development of education network, including distance education and distance learning, has been dominated by the utilization of information technology recently. Furthermore, learning process in educational environment has rapidly grown up. There are increased numbers of the students especially in Malaysian institutions, a lot of responsibilities and requirements waiting for the lecturers towards teaching and learning field which are being the most obvious problems in UTM. As in Skudai campus, lecturers got difficulties to be in systematically touched with their students in order to conduct such classes due to the lack of time and fulltime schedules. Therefore, the time and distance are considered as the main problem in learning process in UTM. To overcome the previous mentioned problem, the purpose of this study is to come up with a new online designed system, which can help the student and lecturer to be able communicate effectively in UTM. The new designed system would provide the lecturers and professors the ability to conduct their classes and courses in distance with the target learners. E-Learning lessons are generally designed to guide students through information or to help students perform in specific tasks. Information based e-Learning content is to be accessible information to the student. As a conclusion, all the activities that should be completed in Project I and II have been completed successfully. The way of preparing and designing all models has been done with structured activities. Hopefully, the expected result from this study is could give the overall benefits for this institution can be reached.

# ABSTRAK

Perkembangan jaringan pengajaran, termasuk pembelajaran jarak jauh dan pengajaran jarak jauh telah didominasikan oleh penggunaan teknologi maklumat kebelakangan ini. Selain itu, proses pembelajaran dalam suasana pembelajaran telah berkembang dengan pesat. Terdapat peningkatan dalam nombor pelajar khususnya universiti di Malaysia. Terdapat banyak tanggungjawab dan keperluan yang menunggu para pensyarah dalam bidang pembelejaran dan pengajaran yang menjadi salah satu masalah yang jelas di UTM. Seperti di kampus Skudai, terdapat pensyarah yang berdepan dengan masalah untuk berinteraksi secara sistematik dengan para pelajar untuk mengajar dalam bilik kuliah kerana kekangan masa dan juga jadual yang penuh. Maka, masa serta jarak merupakan masalah utama dalam proses pembelajaran di UTM. Untuk menyelesaikan masalah yang diterangkan, matlamat projek ini adalah untuk menghasilkan sebuah sistem tanpa talian yang baru, yang boleh membantu para pelajar dan pensyarah untuk berkomunikasi secara efektif di UTM. Dengan rekaan sistem baru ini, para pensyarah dan profesor boleh mengendalikan kelas dan kursus dalam jarak jauh dengan sasaran pelajar yang patut. Kursus atas talian adalah direka khusus untuk pelajar mendapatkan maklumat atau membantu para pelajar dalam melakukan kerja yang spesifik. Kandungan e-pembelajaran berasaskan maklumat merupakan maklumat yang boleh didapati oleh para pelajar. Secara kesimpulannya, segala aktiviti yang perlu diselesaikan dalam Projek 1 and 2 telah diselesaikan dengan berjaya. Cara menyediakan dan mereka segala model telah dilakukan dengan aktiviti berstruktur. Keputusan yang dijangka hasil dari projek ini diharapkan boleh memberi kebaikan kepada institusi ini.

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# CHAPTER I

# PROJECT OVERVIEW

## 1.1 Introduction

The rapid development of technology, especially in educational technology area which significantly changes each minutes and time, has strongly connection with the involvement from its community itself. The development of education network, including distance education and distance learning, has been dominated by the utilization of information technology recently.

The Internet is revolutionizing all parts of society and its impact on education give a great opportunity for the developers to introduce new methods of learning and teaching. The Internet has created extraordinary opportunities for widespread electronic delivery of information and services. Education is become a ubiquitous service delivered over global networks with the promise of being accessible anytime and anywhere.

With the growing popularity of distance education and online programs the education is becoming easy and easy for the people anywhere in the world. As one of the important component of higher learning , e learning is a type of open or flexible learning, introduces the new method of teaching and learning, and an imperative strategy in the educational reform creates new borderless learning environment, opportunities and bring dramatic changes in the global educational landscape. E learning facilitates the access of greater numbers of people and improves student learning outcomes and has the potential to contribute to their lifelong development and their well-being which is the ultimate purpose of education. E learning has been implemented in every field and all forms of education. Malaysia implemented the first computer system in 1966. Since then, the Government has introduced a variety of initiatives to facilitate the greater approval and diffusion of online learning to improve capacities in every field of business, manufacturing, and education in general life. These measures include the enhancement of education and training programs, provision of an environment favorable to the development of online learning, provision of incentives for mechanization and computerization, and the creation of venture capital funds.

Information technology aims to improve performance and flexibility in education by the intelligent application of technology and hopes to increase the effectiveness and efficiency of teaching and learning process. The live learning and teaching is one of the aspects of e-learning which has entered a golden age of rapid development.

One of the methods used in implementing e-learning system is the web conferencing system (WCS), it is used to conduct live meetings or presentations via the internet.

Rapid advancement in Technology makes the web conference accessible to abroad participation; it reduces the cost of travel for the lecturers and enables the faculty to invite a much bigger group to participate in the event including administrative assistants and technical staff.

Another type of e-learning is the WEB-based seminar; it is a workshop or lecture delivered over the web, such as webinars, webcast, or other methods where there will be interaction between the audience and participation.

The term Web castused:

i. To send live audio or video programming over the Web, It is the Internet counterpart to traditional radio and TV broadcasting.

ii. To send selected Web-based information (text, graphics, audio, video, etc.) to Internet users based on individual requirements.

This project will discuss about Live learning and teaching (web conferencing) and its usage in learning in the case of FSKSM the project will focus on the multi integration of live learning system.

## 1.2 Background of the problem

There are increased numbers of the students, in the universities in the world in general and in Malaysian universities in particular, a lot of responsibilities and requirements waiting for the lecturers towards teaching and learning field, thus, many organizations and institutions provide different forms of training and

instruction to their employees or learners. Typically they provide needed training by sending people to school, holding in-house training classes, or providing manuals and self-study guides. In some situations it is advantageous for them to use e-learning or other forms of e-learning instead of the traditional training. Other times it is disadvantageous. As with anything else, there are benefits and limitations, as well as pros and cons. There are many advantages to online and computer-based learning when compared to traditional face-to-face courses and lectures. Our focus here on UTM campuses generally and particularly FSKSM major, both in KL campus and Skudai campus. Many of the lecturers are located in KL campus and have to teach their students in Skudai campus.To handle this distance and time problem between the lecturer and student, the integrated system which can be Communication Bridge between lecturer and student needs to be developed.

In learning process, distance factor can be handled by implementing asynchronous e learning, furthermore there is necessary to implement synchronous e learning (Live learning) to be the portal in time factor of learning process (Figure 1.1).

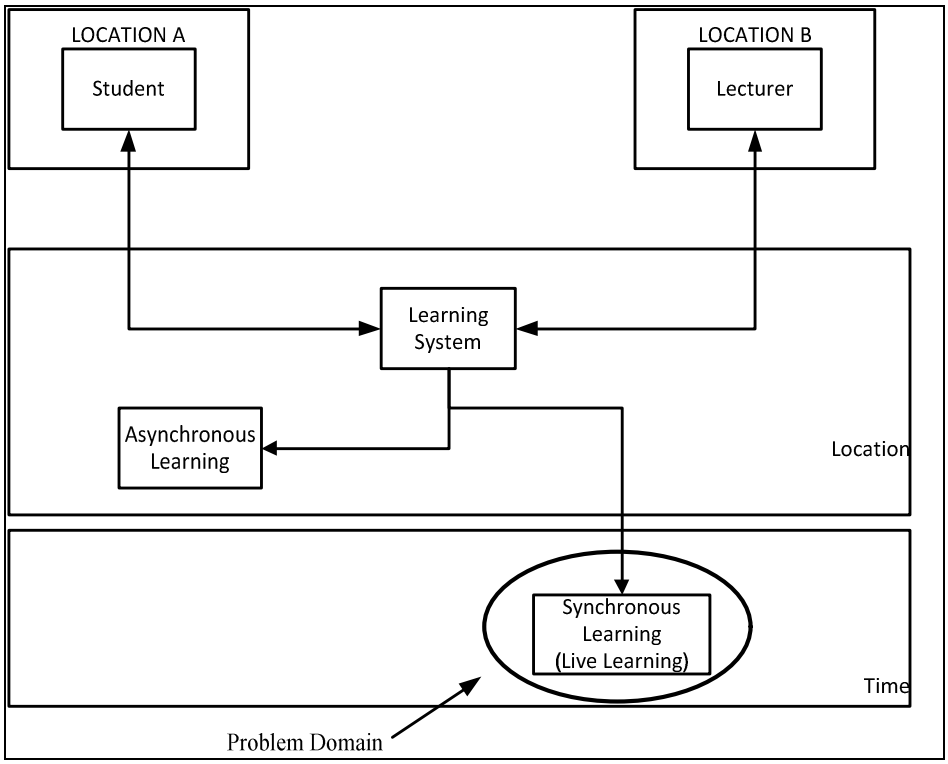


**Figure 1.1:** Problem domain of the study

## 1.3 Project Objectives

The objectives of this project are as follows:

i. To analyze the requirement of learning process between lecturers and students.

ii. To design integrated module for live learning system as multi integrated approach (multiple functions in system that utilized to make the solution of some limitation, in this case the limitation are mentioned in problem statements).

iii. To develop web based live learning system for FSKSM learning activities.

## 1.4 Scope of the Project

The Scope of the project will focus on developing web-based live learning for University Technology of Malaysia in FSKSM. The scope of this project also describes the features of Live learning itself as listed below:

i. The system is developed by analyzing the requirement of learning process in the context of Lecturer and UTM student (Especially in FSKSM).

ii. Research finding will presents the designation of prototype system by using UML and GUIs design.

iii. The prototype system will be developed as real time web based application.

iv. The management of current learning process (UTM e-Learning) should be integrated in the live learning system.

v. The prototype system has functioned as synchronous portal which allowed students and lecture to communicate visually in a classroom (created in the live learning system).

vi. The prototype system can be integrated with external hardware as a supporting tools in live learning such as : web camera, microphone and printer.

## 1.5 Problem Statement

This project is conducted as an attempt to find the answers to some problems, relating to education such as Electronic Learning, particularly "Live Learning and Teaching". The main question of this project is “How to develop web based live learning system to meet the requirement of UTM students and lecturers?"

i. How to analyze the requirement pattern of learning process between student and lecturer in FSKSM-UTM

ii. How to design integrated system for learning process which contains of time and distance factors

iii. How to develop web based live learning system to meet the requirement of UTM students and lecturers.

## 1.6 The importance of the project

The expectation of live learning implementation is bringing some effective and efficient process to the element of university according to online learning process. The project will brings some benefits of the system for the university, lecturer and students.

### 1.6.1 University

i. It will increase the university reputation in using ICT (Information Communication and Technology).
ii. It will decrease the expenses that come from lecturers' transportation among the campuses.

### 1.6.2 Lecturer

i. The system will improve the involvement students for visiting their virtual classroom and webinar.
ii. It will give motivation and enhances of awareness in using live learning for their teaching and learning.

### 1.6.3 Students

i. Alto of benefits can be for the student himself such as makes the student more practical to use live teaching system,
ii. make the student able to share the knowledge with other students on the other campus as long as it is input and output speech
iii. It will be more interesting for him to be in an academic conference.

## 1.7 Uniqueness of the project

i. The system accommodates the needs of real time learning process between students and lecturers.

ii. The system contains management of subject, student, assignment and virtual class.

iii. The virtual class contains 3 main frames which are: Camera frame, Board frame and Chat class frame.

iv. The system contains Three main components based on its usage which are :

- AJAX (Asynchronous JavaScript and XML)
- Sound Streaming.
- Video Streaming.

## 1.8 Organization of the Project

This project comprises of five chapters and is organized as follows:

Chapter 1 discusses the project background of the problem, problem statement, objectives, scope of project, followed by importance of the project and outline. Chapter 2 gives an introduction of e-learning, the literature study about e-learning, significance of e-learning , the study related to the live learning methods, elements of structure of e-learning and live learning , different software used for live learning is also discussed in this chapter. Chapter 3 discusses the methodology that will be adopted to develop the system. The design and analysis of the system is the

subject in Chapter 4 which introduces the initial finding of the system design based on SDLC (Software Development Life Cycle) and containing UML design along with GUI design. Chapter 5 has discussed about the system development and explained the part about the system developed which is containing live aspect to support learning process between student and lecturer. In class module, there are several modules which are supporting the interaction such as live chat, webcam streaming and then slide streaming. The management of lecturer, student, administrator and subject has been shown in the system. This chapter is ended with testing phase. In this study, testing phase is using blackbox methodology which is allows user to test the system architecture without code knowledge. User can test the system by verifying its functional module. In the chapter 6, an organizational strategy has been proposed to assist the institution how to adjust the system and its environment. Finally in chapter 7, this study has been summarized and come out with future works.

## 1.9 Chapter Summary

As a conclusion, this chapter describes brief introduction about the project and how the project is going to be implemented. The problem background and statement of the problem has discussed in part of this chapter to explain why this project has been proposed. The project objective, scope of the project, Importance of the project, Uniqueness of the project and also the organization of the project has also been pointed out. The expectation is that, by conducting the project successfully, the objectives of the project can be achieved.

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