E-Learning Using Video Lecture with Lecture Slides

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Abstract: this paper presents a web application for video lectures associated with lecture slides in E-learning framework. Currently, most of the Virtual learning environment (VLE) in higher education use textual material without multimedia. Thus, this paper describes the method of using both types of materials together, and the proposed system is based on the needs of students. In addition, the research explores the investigation of existing VLE systems of some Universities’ websites, then collecting students’ preference of learning approach. The results of implementing web application and students’ attitude suggest that it can improve the performance of all students and help disabled students.

Keywords: Video lectures; VLE; WEB application; students’ preference

1. Introduction

The increase of using web application has affected the educational operation by enhancing the approach of exchanging knowledge between students and tutors. However, the online learning method cannot be an alternative approach of attending lectures rather it completes it. This means students at Universities are required to attend a lecture physically in order participate, face-to-face exposure with a lecturer and interacting with their colleagues through study activates [1].

Most of Universities have utilized the VLE which is known Blackboard to deliver learning materials online to students. However, there is a lack of using media synchronized with lecture slides on existing VLE. This approach is not being used widely, hence the proposed system has been implemented to apply it within the University of Bradford as of study. There is proof that demonstrates enhance the performance of students who use the online lectures of learning [3]. The scope of study focuses VLE instances of system does not have media feature with lecture slides.

2. Motivations

There are sufficient reasons to provide video lectures with lecture slides. One of them is revision purposes by providing a lecture online for students as it is delivered in the classroom with form of communication with tutors and their colleagues. Furthermore, students can assess their understanding of the lecture contents. Another important motivation is disabled students who cannot attend a lecture they can watch it online. Moreover, online video lecture is a vital element in modern higher education [4].

Online lectures with discussion form gives an opportunity to students to learn and share knowledge in order to increase their understanding and learn from other’s mistakes. This approach also supports participation in exchanging understanding the lecture contents [5]. Additionally, accessing lecture contents online is an effective and flexible way of learning, which means students can review a lecture, read slides and they can pause a video and re-play it. Moreover, it is also the way of receiving the reflection of student on each lecture contents.

3. Features of e-learning over traditional classroom

Having E-learning system as additional to classroom brings beneficial aspects to teaching operation. These features include:

3.1 Accessibility:

Students who have access to the system can access it from any devices with the Internet connection. The difference between this way and traditional classroom is viewing and learning at any times even on holidays. This accessibility is an important tool to disabled students as well.

3.2 Sustainability

This means reducing the use of papers and carbon footprint, which have effect on the environment. With the reduction of impact on the environment participate in making our lives healthier and decrease spending on the educational operation.

3.3 Self-study Environment

Learning online is accessible anywhere the end user can enter up the system. The proposed system
supports self-learning with assessing understanding of a lecture contents and allow students to study whenever and wherever they are.

4. Laurillard's theory

Laurillard (1993) introduced conversational model of main four teaching and method, these four principles can be used by various type of educational media. Fig 1 illustrates the practical framework of learning, and the core elements of it are students and teachers with the relationship between them and technology. The theory classified the educational media as discursive, adaptive, interactive and reflective, and raised the matter about the ease of feedback, aims and supervision of students learning. This model can be transfer via E-learning approach particularly with conversation between lecturers and students through the comments form in proposed system. Applying this method with the use of technology such web application would be a practical way of E-learning as it supports the interaction and exchanging knowledge between students and lecturers. As shown in the fig 1 the Laurillard’s Conversational framework model comprises of discussion between teachers and students, interactivity form to get feedback on given tasks to students, reflection to build strong connection between students and teachers and improve any weaknesses of learning materials. This model is a critical aspect of learning, hence the proposed system focuses on creating a communication form between lectures and students for each lecture.

5. Methodology

A brief survey has been carried out to collect the preference learning method of students at the University of Bradford as a case study. Based on the response of students which supports the idea of providing video lectures online, the web application was implemented. The method used in developing the system is waterfall method with object oriented programming language. The system follows the structure of Bradford website in term of courses and modules belong each department. However, it can be adapted with any changes and applied to any higher education institutions or universities. With this method a lecture will be recorded by recording system and provided online with text document, also brief quiz for each lecture for student’s self-assessment. Fig 2 illustrates the method of developing the system.

6. Requirements analysis

Before implementing the system some elements has been looked at, which are necessary in any system. As William Horton (2003) pointed out the aim of E-learning is a learner rather than technology, which implies the starting point are learners and their activity that will be supported by the system [2]. Firstly, students as the end users of the proposed web application and how to make it supports the activities of users. This means identifying users and the activity they will perform through the proposed system.

The second aspect of analyzing phase is specifying the needs, which means defying the problem. Thus, the current state of VLE and how it can be improved with using media lead to define the objectives of the system. This is useful to keep the design usable and effective. The problem statement therefore is developing a web application for deliver a lecture contents including video on the interactive framework and apply that within the University of Bradford as a case study.
7. Implementation

The end users (students) will interact with designed interfaces that show all functions of the system. In the phase of implementation, the object oriented programing language (C#) was used with SQL server database. The end design is simple and effective for both contents management section and view page with keeping the consistency in layout for all pages. As Fig 3 show the lecture slides synchronized with its video and comments form in one page.

![Figure 3 View lecture contents page](image)

8. Conclusion

The system accomplished the required goals of the proposed idea with using media in VLE environment. The results show that combining video lectures with lecture slides in one framework gives additional features to VLE to deliver a lecture as it in classroom. This research suggested there will be improvement on the performance of students which can be tested as the effect of lecture video in E-learning environment. In addition, further work has to be carried out to enhance some aspects of the system such as the evaluating interactivity of it, keep updating the design layout and add any required functions.

9. References


