

## Chapter 14

# Implementing Online Assessment for Summative Purpose in an Electronic Engineering Course

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### ABSTRACT

*A computer-based approach of academic online assessment has been implemented in electronic engineering course in Universiti Tun Hussein Onn Malaysia (UTHM). The implementation of online assessment method is seen as an alternative to conventional assessment method used for years. Unlike the conventional approach, the online assessment does not require the students and lecturer to be in one place for the purpose of evaluation. The online assessment system enables the ease-of-use performance, functionality and flexibility in such a way that lecturers are able to ensure and maintain the objective of specified assessment. The purpose of this chapter is to present a first attempt in implementing the online assessment to first year students in electronic engineering course. This study was implemented to investigate the effectiveness of using e-learning platform as an assessment tool. The result obtained from online assessment is then compared with the paper-based assessment in term of students' performance and the difficulty of questions. It is concluded that the implementation of this online assessment is an effective means to hold an assessment, and thus, could become an alternative to the conventional assessment approach.*

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## **INTRODUCTION**

The concept of e-learning has been implemented for years and it is common to see the instructional materials are delivered through this approach especially in higher education level. Nevertheless, many academicians are still shy away from using online system as an assessment tool, hence the capability of the online system is underutilized. This also leads to waste of public money in local universities as the subscription of such system requires substantial amount every year. Unless the academic staffs start to fully utilize the e-learning system subscribed by the university, it is an obvious mismanagement of public money that should be avoided at all cost. It is one of the tasks as an academician to explore new method in teaching and learning, and in this case, the capability of the e-learning should be maximized as well.

## **STATEMENT OF THE PROBLEM**

This study is initiated to investigate the effectiveness of e-learning as an assessment tool in electronic engineering course. Apart from this main objective, other purposes of this study are to compare the performance of students with paper-based assessment and also to evaluate the difficulty level of online assessment. At UTHM, Blackboard Learning System (Blackboard) which is an online proprietary virtual learning environment system has been chosen as the platform to establish the e-learning system. Hence it is trivial for UTHM lecturer to utilize Blackboard as teaching and learning tool, providing online activity throughout the semester. However, its capability for online assessment to check on the performance of students is not fully tapped. The lecturers tend to limit Blackboard as a platform solely to present the course content. The reason could be due to lecturers who are complacent with the conventional way of assessing student's work. The purpose of this paper is to present UTHM first

attempt in implementing the online assessment on first year students in electronic engineering course. This paper is organised as follows, the third part is the general review of e-learning system as an assessment tool, the fourth part is the development process of online assessment in electronic course in UTHM, the fifth part is the result obtained from the assessment and the final part concludes this paper.

## **GENERAL REVIEW OF E-LEARNING SYSTEM**

### **Benefits of Online Assessment**

E-learning system is a general platform to hold online assessment although there are other efforts using web-based platform (Joglar, Martin, Colmenar and Martinez, 2009), (Ferzli and Karam, 2006), (Ming, 2006). Online assessment system is defined as an assessment system that assumes the role of students as inquirers who are actively engaged in the learning process, which in turn activates learning at higher-order thinking levels (Beebe, Vonderwell, and Boboc, 2010). Research indicates several benefits of using online assessment. Rich and Yihong (2010), and Ming (2005) express an obvious advantage of online assessment over the paper assessment. The researchers indicate that online assessment offers more flexibility to both lecturers and students. For students, the online assessment provides a flexible means in attempting the assessment and receiving prompt feedback. Online quiz can be anywhere as it provides a flexible test environment. As for the lecturer, online assessment saves time to grade quiz or test given to students. It also provides an effective way of grading a quiz, as such, the workload will automatically be reduced. Benefits of online assessment provide an effective way of formative assessment which can be done on regular basis, hence permitting students to evaluate their knowledge independently (Joglar, Martin,

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