Strategies to Remove Barriers and Increase Motivation to Use the Tablet PC in Formative Assessment

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ABSTRACT

This paper investigates how engineering academics can be encouraged to integrate the use of the Tablet PC to improve student understanding of course content through formative assessment feedback. In particular, it looks at the barriers and motivators for using the Tablet PC. Based on the results obtained from studies conducted on the utilisation of Tablet PCs in preparatory mathematics courses, incorporation of the technology into engineering undergraduate courses would appear to benefit students. The Tablet PC is both an innovative and adaptive form of technology which is able to support the teaching and learning process. Through the recognition of the observed positives and negatives of Tablet PC application in other courses strategies will be implemented that remove the recognised barriers and provide benefits thus encouraging engineering academics to use the Tablet PC to provide feedback on formative assessment.

Keywords: Barriers, Formative Assessment, Motivators, Staff Engagement, Tablet PC

INTRODUCTION

Within the tertiary curriculum TabletPCs are becoming an increasingly important source for problem solving. Subsequently there is a need for lecturers to provide the interface between the “educational technology” of the classroom and the “technological literacy” demands of society. Formative assessment and prompt quality feedback are seen as the key to student engagement and success when studying by distance. “The importance of feedback provided through formative assessment is not only an important part of the learning process but is also reciprocal” (Dekkers, Adams & Elliott, 2011). Through the submission of the assessment, the student provides feedback to the lecturer, who in turn provides feedback to the student through marking and annotation.

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The incorporation of the Learning Management System (LMS), the Tablet PC and formative assessment feedback, enables lecturers to engage and efficiently support students, thereby improving student retention. Investigating how the Tablet PC has been employed to provide feedback through formative assessment to students in preparatory mathematics courses provides a basis for the Tablet PC to be incorporated into engineering courses. How to encourage academics to utilise the integrative use of the Tablet PC and formative assessment to improve the understanding of course content, thus fostering improvement to formative assessment feedback, which has been proven lead to increased student retention, remains an unanswered question.

This paper will explore the relationship between the Tablet PC and formative assessment and examine a range of teaching and learning strategies for the effective use of Tablet PCs appropriate for students’ study demands and application of the tool within engineering courses. In particular, meaningful teaching/learning contexts in which lecturers are able to effectively utilise Tablet PCs, engaging in a range of activities appropriate to the learning styles of the students and provide formative assessment feedback. The adoption of the Tablet PC, for marking, in combination with learning management systems will further facilitate a smooth transition to a paperless course environment. Optimally, the benefits obtained by integration of the Tablet PC in course delivery will be adopted by the wider university community.

WHAT IS A TABLET PC/WACOM SCREEN?

The Tablet PC is essentially a laptop computer that enables the user, through pen technology, to annotate (write) on the screen. Wacom Screen is similar to a TabletPC but needs to be connected to PC or MAC. There was much excitement surrounding the technology in the late 1980s, reaching a peak by 1991 (Jones, 2008). It was envisaged that this technology would eventually replace the mouse and keyboard, but they were difficult to use and the handwriting recognition was inadequate (Jones, 2008). Fortunately, improved computer technology has resulted in greater functionality with the newer versions. Tablet PCs are now lighter, more efficient and more affordable; processors are faster; resolution is finer; and the handwriting recognition software has been vastly improved (Blickenstorfer, 2008). Additionally, no attempt has been made to replace the mouse and keyboard in the current Tablet PCs and although handwriting recognition is still a feature, “digital inking” (allowing the user to annotate on the computer using a stylus or pen) proves to be its strength (see Figure 1).

TABLET PC IN THE TERTIARY CLASSROOM CONTEXT

Increasingly at CQUniversity, the use of paper has been replaced with the use of word processing software and submission of assessment is undertaken digitally through a learning management systems (LMS). Whole courses are now run electronically, this includes: student assessment submissions, marking of and returning of assessment, all course materials and video resources. The dominance of the flexible mode of study at CQUniversity requires the development of courses that can be delivered through a LMS. CQUniversity is not alone in this regard. According to MacKeogh and Fox (2009, p. 147) “one vision of the future of universities is that virtualisation and remote working technologies will enable us to study at any university in the world, from home”. As CQ University and other universities are pressured to implement eLearning technologies into mainstream higher education, the TabletPC provides the opportunity to achieve this.

The Tablet PC is both an innovative and adaptive form of technology which is able to support the teaching and learning process. The potential of this tool is evident and significant in terms of
Visualization Skills in Engineering Education: Issues, Developments, and Enhancement
www.igi-global.com/chapter/visualization-skills-engineering-education/64013?camid=4v1a

Quality Accreditation System for Indian Engineering Education Using Knowledge Management and System Dynamics
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