Chapter 13

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

Antony Dekkers  
Central Queensland University, Australia

Prue Howard  
Central Queensland University, Australia

Nadine Adams  
Central Queensland University, Australia

Fae Martin  
Central Queensland University, Australia

ABSTRACT

The Tablet PC has been employed to provide feedback through formative assessment to students in preparatory mathematics courses at Central Queensland University for close to a decade. A study conducted in 2011 on formative assessment and feedback given via the Tablet PC within these courses conveyed extremely positive outcomes (Adams, Dekkers, & Elliott, 2012). Approximately 90% of the 140 students surveyed found the feedback beneficial to their learning and that assessment was returned, on average, within two to four days. These findings would indicate that these methods should be adopted into mainstream higher education courses (Adams, et al., 2012). Building on the research and experiences of staff involved in the use of the Tablet PC to provide feedback on formative assessment in preparatory mathematics courses, strategies to implement and improve these practices in undergraduate engineering courses are investigated in this chapter.

INTRODUCTION

It is well accepted that distance study is increasing in higher education and that in many countries over the past thirty years, distance study has moved into the mainstream of higher education. Formative assessment and prompt quality feedback are seen as the key to student engagement and success when studying by distance. 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 to lead to increased student retention, remains an unanswered question.

This chapter explores the relationship between the Tablet PC and formative assessment and examines 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.

TECHNOLOGY AND HIGHER EDUCATION

There has been increasing use of information communication technologies (ICTs) in all aspects of society. The rapid rate of technological change has resulted in universities using the online learning environment as a means of course delivery (Fleming, 2010). “Improving the quality of learning is no light undertaking and does not happen just because teaching goes online. A high quality learning system with real potential for improving student performance would entail a quite substantial investment—human, intellectual, financial…” (Skilbeck, 2001, p. 62). Subsequently there is a need for lecturers to provide the interface between the “educational technology” of the learning and teaching environment and the “technological literacy” demands of society. “Things (most commonly tools) are therefore rendered useful to humankind, within the framework of fitting tool to purpose” (Millwater, 1988, p. 3).

Individual impressions are shaped by the nature and form of the technologies used to encode and decode experience. The technology conveys the critical and dominant information through its role in influencing the views, ideas and attitudes of the user. This principle is significant in the development of programmes which need to consider both the affective and cognitive domain of students’ learning. A multi-sensory approach would provide a variety of mediums appropriate to a range of learning styles and allow students the opportunity to interact with the technology at their own level. This approach would involve providing a range of age old media and also the defining technologies of our times in order to foster and perhaps enhance the ways of thinking generated.

Effective integration of technology into classes can have many positive effects, including improved attitude and increased engagement with content, but these positive effects are dependent on how well the technology is used (Ozel, Yetkiner, & Capraro, 2008). 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 universities are pressured to implement eLearning technologies into mainstream higher education, the Tablet PC provides the opportunity to achieve this.