Chapter XXIII
Teaching and Learning with Tablet PCs

Leo Tan Wee Hin
National Institute of Education, Singapore

R. Subramaniam
National Institute of Education, Singapore

ABSTRACT

This study explores the experiences of a secondary school in Singapore which was the first to introduce Tablet PCs to the entire cohort of its Secondary One (Grade 7) population. Except for physical education, the workshop aspects of design and technology, and the laboratory aspects of home economics, all other subjects are taught and learned using Tablet PCs. The implementation issues, including the business model which enabled 95% of the students to own their Tablet PCs, and the students' perceptions of this new technology for learning are explored. Results show that the use of Tablet PCs for education is viewed very positively by both students and teachers. Being among the very first (and very few) studies investigating the effectiveness of Tablet PCs for educational use, it is suggested that the findings from this study have some implications for other educational institutions considering the use of Tablet PCs for their students.

INTRODUCTION

The educational landscape has undergone tremendous transformations in the past decade, and is still dynamically configuring itself for its strategic positioning in the information age. Two factors that have greatly influenced this course of development are the availability of affordable personal computers and the ease of connectivity to the Internet. These are increasingly helping to transition the move from a reduction in teacher-centric pedagogy to increased learner-centric pedagogy, with implications for instructional methods to engage students in class.

That appropriate technological tools can enhance the effectiveness of classroom tasks for the teacher as well as open up new path-

ways for interacting with students are supported by a number of studies. Indeed, in recent times there has been a pronounced emphasis on incorporating instructional methods that encourage student engagement. This can create active learning environments for the meaningful assimilation of knowledge (Magolda, 1992). When technology-based instructional tools present lessons in interesting ways that capture student attention, possibilities for promoting further student learning are afforded (Macdonald, 2003). Some of the technological tools in this regard include electronic whiteboards (Smith, Higgins, Wall, & Miller, 2005) and PowerPoint presentations (Susskind, 2005). A more recent development is the Tablet PC, which promises to revolutionize education even further.

The Tablet PC is basically a next-generation PC with a slew of features. It is lightweight, portable, has a long battery life, possesses powerful processing capabilities, and can connect to the Internet via a wireless network. Other advantages include:

- It allows students to work from anywhere—class, library, or home—with the summative efforts having the potential to enhance cognitive gains in the learning process.
- With the use of digital ink, it becomes possible to handwrite notes, organize these in a searchable format, and integrate them with other applications software running on the Tablet PC.
- In classrooms and lecture theatres, the use of the linked audio facility in the Tablet PC allows voice to be recorded when taking down notes.
- Besides use of keyboard and digital ink, input can also be via voice commands.

Migrating to the Tablet PC regime affords schools an opportunity to do away with expensive cabling and equipment idling time in computer laboratories. Desktops PCs, with their attendant paraphernalia such as cables and network points, represent a significant investment, including recurrent expenditure.

As the Tablet PC is a very recent innovation, having been introduced only in January 2003, there is a scarcity of studies in the literature on its use for education. In fact, we are not aware of any studies in the mainstream journal literature in this regard. A few studies have been reported in conference papers, and these focused on its use for teaching computer science (Anderson et al., 2004) and mathematics (Golub, 2004). Positive feedback on their use is evident from these studies.

The objective of this chapter is to explore the experiences of one school in Singapore which was the first to introduce Tablet PCs to the entire cohort of its Secondary One (Grade 7) population. The implementation issues, including the business model that allowed 95% of the students to own their Tablet PCs, are discussed, and the students' views on the new technology are ascertained with the aid of an evaluation instrument specially developed for this study. Being among the very first studies on the use of Tablet PCs for educational use, it is suggested that aspects of this study can offer some lessons to other institutions considering the introduction of Tablet PCs for their students.

METHODOLOGY

Instrument Design

An evaluation instrument was designed to assess the effectiveness of Tablet PCs for use in

13 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/teaching-learning-tablet-pcs/20940

Related Content

School Multimedia Design Teams and Projects
Irene Chenand Jane Thielemann (2008). *Technology Application Competencies for K-12 Teachers (pp. 161-175).*
www.irma-international.org/chapter/school-multimedia-design-teams-projects/30170

The i2Flex Methodology: Definition, Praxis, and Conditions for Success
Maria D. Avgerinouand Stefanos P. Gialamas (2016). *Revolutionizing K-12 Blended Learning through the i²Flex Classroom Model (pp. 135-159).*
www.irma-international.org/chapter/the-i2flex-methodology/157584

Online Learning Communities: Enhancing Learning in the K-12 Setting
Chris Brookand Ron Oliver (2006). *Handbook of Research on Literacy in Technology at the K-12 Level (pp. 552-572).*
www.irma-international.org/chapter/online-learning-communities/20948

Developing 3D Case Studies for Authentic Learning Experiences
Joanne Lavinand Xin Bai (2013). *Cases on 3D Technology Application and Integration in Education (pp. 150-173).*
www.irma-international.org/chapter/developing-case-studies-authentic-learning/74409

Computer-Based Mathematics Education: Historical Excursus
 (2021). *Computer-Based Mathematics Education and the Use of MatCos Software in Primary and Secondary Schools (pp. 28-51).*
www.irma-international.org/chapter/computer-based-mathematics-education/260134