


Chapter 8

Understanding the Effects of Mobile e–Book Use Among Mathematics Postgraduate Students

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ABSTRACT

Mobile e-book creates new opportunities for the teaching and learning process. The trend in the academic circle shows that mobile e-books are more popular in business, management, engineering and medicine than in other areas, for example, mathematics and pure sciences. Hence, this study aims to understand the positive impacts of mobile e-book use on mathematics postgraduate students' research activities. The study was guided by connectivism learning theory. It employed a qualitative case study design. Eight mathematics postgraduate students participated in the study. Data were collected through semi-structured interviews and non-participant observations. Collected data were analysed using the constant comparative method in NVivo 11 software. The findings showed that mobile e-books can increase student-content interaction, promote student-head of research group interaction, assist in understanding a subject from different perspectives and change the way of reading or learning.

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INTRODUCTION

Technology is transforming nearly every aspect of society. Higher learning institutions are in the position of accepting and changing the use of technology to the benefit of their students. Instructional technologies are the main technology tools higher learning institutions use to maintain or improve the quality of education delivered with minimal cost. One of the main advantages of incorporating instructional technology in higher learning institutions is the transformation of the academic environment to one that is more student-centric. Student-centered learning emphasizes students' active participation in learning processes and their responsibility for learning to become an independent learner. This process leads to increasing student demand regarding educational resources and new teaching approaches (Kerimbayev et al., 2023; Lazaro & Duarte, 2023; Chen & Tsai, 2021).

Mobile learning has become popular in the current education climate, focusing on student-centered teaching and learning. Furthermore, the availability of Internet and wireless technologies supports the mobile learning process by providing a flexible learning environment and rich content. Mobile learning is expected to support a personalised, contextualised and interactive learning environment (Gumbheer et al., 2022). Mobile learning also provides timeliness and an attractive learning environment (Garzón et al., 2023; Jou et al., 2016). Hence, mobile learning offers an environment suitable to the students' preferences.

Mobile e-book is one of the technologies under the mobile learning platform. It enables students to access and read learning materials anytime and anywhere via handheld mobile devices such as smartphones and tablets (Lee, 2013). The current mobile e-book technology opens the door for new ways of learning by allowing access to information and synchronous communication between peers and among educators and learners.

In Malaysia, schools and higher learning institutions widely subscribe to e-books. In schools, Terengganu was the first state government in Malaysia to introduce e-books among primary school children. Then, the Federal government via the Centralised or Customised Education and Learning Exchange (CELEX), introduced e-books to school students between the ages of 6 and 17 around schools in Klang Valley (Asian Publishing Network, 2012). Meanwhile, private schools such as Fairview International Schools in Malaysia also introduced iPad projects to their students. Upper junior students from Fairview International Schools in Malaysia are encouraged to use iPads for their learning activities (The Expateducation, 2012/2013). Fairview International Schools are among the first private schools that introduced mobile e-books at schools, followed by other private and international schools in Malaysia, such as Rafflesia International School and Nexus International Schools. More public and private higher learning institutions in Malaysia also subscribe to

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