

# Chapter 38

## Mobile Technology as a Learning Tool: Use and Effects

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### ABSTRACT

*This study investigated students' actual use of mobile technology (MT) as a learning tool and identified their perceptions towards the effects of using MT on the learning process. It also examined the impact of students' academic major on their use and perceived effects of MT. The relationship between MT use and its effect on learning was explored as well. To this end, a quantitative study of professional diploma students' perceptions of MT was carried out. The results revealed that students use MT in a variety of ways, and they perceive it as primary valuable tools to supplement their learning. However, the nature of MT use is unpretentious in scope. The results also indicated that students' academic major significantly impacted their use and perceived effects of MT. In addition, significant correlation was found between the use and effects of MT.*

### INTRODUCTION

The emergence of near-universal access to mobile technologies (MTs) such as cell phones, personal digital assistants (PDAs), digital cameras, portable media players, smart phones, and tablets has potential to open up new avenues to improve the quality of teaching and learning (Mockus, et al., 2011; United Nations Educational, Scientific and Cultural Organization {UNESCO}, 2012). Mobile devices provide teachers and students convenient

and immediate access to up-to-date information. The use of these tools allows them to easily and freely learn, communicate, and share information (Mockus, et al., 2011).

The literature appears to provide encouraging feedback regarding the use of MT in education. Advantages of MT include improving students' engagement and collaboration; reducing computer costs; enhancing situated learning; and extending the place and time of learning (Allen, 2011; Chen, Chang & Yan, 2012; Churchill, Kennedy, Flint &

Cotton, 2010; Hsieh, Jang, Hwang & Chen, 2011; Klopfer, Squire, & Jenkins, 2002; ; Kolb, 2011, Naismith, Lonsdale, Vavoula & Sharples, 2004).

In contrast, Brand and Kinash (2010) argue that the effect of MT on learning has yet to be determined. For instance, Chu, Hwang, Tsai and Tseng (2010) indicate that students might feel motivated when using MT, but, their educational achievement is still unsatisfactory. Further, some educators and students see MT as a disruptive tool that is not useful and increases distraction from learning (Gong & Wallace, 2012; UNESCO, 2012).

The inconstant and limited evidence about the effects of MT on learning, and the probability of increasing students' positive perceptions of mobile learning over time (Brand & Kinash, 2010) present a need for more research to explore the actual use of MT and its effects on learning. Therefore, this study was set up to investigate students' use of MT as a learning tool, to identify their perceptions towards the effects of MT on their learning, and to examine the impact of students' academic major on their use and perceived effects of MT in specific context and setting.

## **LITERATURE REVIEW**

The near ubiquitous access of MT has attracted the attention of educators to seek ways to become more efficient and effective in their efforts to prepare their students for the demands and challenges of a globally competitive society through utilizing MT as educational tools (Clough, Jones, McAndrew & Scanlon, 2008; Sachs & Bull, 2012). Mobile technologies enable learners to learn anytime, anywhere, transforming e-learning into mobile learning (m-learning) that has emerged as an innovative learning approach which takes advantage of the unique features of mobile devices to improve teaching and learning and create and sustain communities of learners (Garrison, 2011).

MTs are spontaneous, informal, contextual, portable, ubiquitous, pervasive, and personal. These features of MTs have the power to support learning that is more situated, experiential, and contextualized within specific domains (Kukulska-Hulme & Traxler, 2005; Kukulska-Hulme, 2009). If appropriately employed, MTs can benefit students by providing instant instructional materials and interaction (Corbeil & Valdes-Corbeil, 2007). Even on school campuses, the traditional classroom can be transformed into a digital laboratory with available and cost effective mobile devices (Chen et al., 2012). Klopfer et al., (2002) describe several features of MT that produce unique educational benefits, namely; portability – can carry or move the device with ease; social interactivity – can use the device to collaborate and exchange information with others; context sensitivity– can use it to collect and gather real or simulated data that is appropriate to a specific location, environment, and time; connectivity – can use it to connect to data collection devices, other devices, and to a network; and individuality – can provide scaffolding for learners that is customized to the individual's need.

Naismith et al., (2004) summarized the educational affordances of mobile technologies as following:

- Moving learning from inside the classroom to outside the classroom in which focus will be on the learner's real or virtual environment.
- Promoting learners to make meaningful connections to resources and other people.
- Empowering learners to become investigators of their own environments through the ability to instantly publish their observations and reflections as digital media.
- Enabling learners to easily capture and record events in their life through context-aware applications to both assist later recall and share their experiences for collaborative reflection.

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