Chapter 3
Adopting Mobile Devices in Classroom:
An Empirical Case Study from Indonesian Teachers

Chockalingam Annamalai
SEAMEO RECSAM, Penang, Malaysia

Wahyudi Yososutikno
SEAMEO RECSAM, Penang, Malaysia

Ng Khar Thoe
SEAMEO RECSAM, Penang, Malaysia

ABSTRACT

Worldwide, Mobile phone technology is increasing at a remarkable rate. Mobile technologies (m-technologies) allow students to gather access and learn beyond the classroom. They are an integral part of human's lives today, including children in some societies. This chapter addresses issues related to the mobile phone evolution in Indonesia, pedagogical effectiveness of using it in educational context with empirical study on Indonesian teachers' perception of the aforementioned in the classroom for science and mathematics learning. The useful research evidence of the value of ICT in education thereby serves as empirical basis for the formulation of ICT policy in educational institutions, particularly ICT integration in instruction.

INTRODUCTION

Mobile technologies (m-technologies) are integral part of human's lives today in many parts of the world as they are powerful tools for communication and learning in the technology era. Learning via mobile technologies or mobile learning (m-learning) is increasingly gaining attention especially in the societies with limited access to Internet facilities such as Indonesia and South Africa. According to literature, not only is the Internet subscriber base in Indonesia significantly lower than in its Association of Southeast Asian Nations (ASEAN) counterparts (see Figure 1), it is also lower than the ASEAN average. Internet growth in Indonesia is also lagging behind as can

Figure 1. Internet subscriber in ASEAN countries (From ICT infrastructure in emerging Asia. Policy and regulatory roadblocks, Sage Publications (2008). Retrieved from http://www.idrc.ca/openebooks/378-2/#page_141).
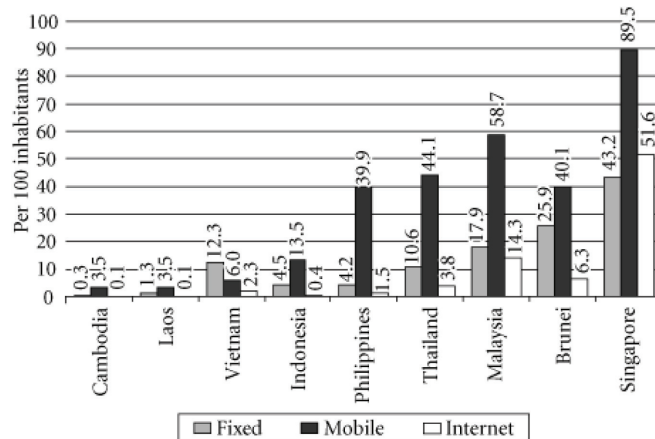
be seen in Figure 2 (Samarajiva & Zainudeen, 2008). Thus it is not surprising that m-learning is defined as "Knowledge in hand" by Brown & Metcalf (2008) as it facilitates the delivery of education or learning, foster communication, conduct assessments and provide access to performance support or knowledge.

This chapter deliberates on the broad definitions of m-learning with identification of various controversial issues and problems of practice as reviewed from literature. Elaboration will be made on the mobile phone evolution in Indonesia and the pedagogical effectiveness of using it in educational context. The findings from the empirical case study on Indonesian teachers' perception towards mobile learning in the science and mathematics classroom will also be reported with discussions on future trends. The useful research evidence of the value of ICT in education thereby serves as empirical basis for the formulation of ICT policy in educational institutions, particularly ICT integration in instruction.

The organization of this book chapter is divided into six sections: Section 2 (Background), Section 3 (Literature review), Section 4 (Research methodology), Section 5 (Finding and Discussion)

and Section 6 (Conclusion). Section 2 describes the background of related research on mobile phones and its pedagogical effectiveness. Section 3 discusses literature review. Section 4 discusses research methodology such as sample size, instruments, data collection and analysis. Section 5 elaborates findings discussions & conclusion drawn. Section 6 offers research implications and limitations. Finally, this chapter comes up with recommendation on formulation of ICT policy towards the usage of mobile devices in classroom.

BACKGROUND

Mobile learning (m-learning) is defined by Quinn (2000) as the intersection of mobile computing and e-learning: Accessible resources wherever you are, strong search capabilities, rich interaction, powerful support for effective learning, and performance-based assessment. Wei & Lin (2008, p.5251) defined m-learning as all forms of education in which the teacher and the learner are physically separated from one another by space and by time. A new m-learning architecture will support creation, brokerage, delivery and tracking of

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