Chapter 5
Mobile Technology and Learning

Benjamin Deaton
Anderson University, USA

Josh Herron
Limestone College, USA

Cynthia C. M. Deaton
Clemson University, USA

ABSTRACT

With an awareness of the unique characteristics of an increasingly mobile world and referencing socio-material mobile learning frameworks, this chapter will provide an overview of the initial stages and growth of mobile learning. The authors also discuss university initiatives to support mobile learning, and examine the implications of mobile technologies for teaching and learning. Additionally, the chapter will introduce a case study detailing the Mobile Learning Innovation at Anderson University (SC) and highlight its impact on the teaching and learning culture on its campus.

INTRODUCTION

Mobile technology is receiving growing attention in education just as it has in other realms of society—from media to business to healthcare. Educators and researchers have to critically examine its impact from a perspective that considers equally the social and material aspects of a mobile learning environment. Undoubtedly, the growth in the numbers of mobile device users changed the manner in which we communicate, access, and discern information (Pew Research Center, 2012).

As referenced, the integration of mobile technology in a number of aspects of our lives is becoming commonplace. Although such devices have been around for quite some time, including the Personal Digital Assistant (PDA) and flip phones, smartphones and tablets have picked up even more attention due to their increasing functionality and capabilities. A Pew Research Center report (Anderson, 2015) notes that almost 70% of US adults own a cell phone, double from just four years ago. Too, tablet owner-
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ship has almost reached 50% of US adults while sales of laptops and desktops have slowed or declined (Anderson, 2015).

In 2016, Benedict Evans, co-founder of the venture capital firm Andreessen Horowitz, posted an updated presentation titled “Mobile is Eating the World” as part of an annual review on the role of mobile devices in society and business. Evans notes that mobile has scale in the technology industry that is unprecedented with smartphones and tablets at almost half of the consumer electronics industry. In fact, half of all online traffic in the United States occurs through a mobile app (Evans, 2016). With mobile dominating the technology industry and impacting a number of industries (e.g., in e-commerce since half of browsing and a third of purchasing occurs on a mobile device), we must examine the role that mobile devices will play in learning as a unique digital medium than tethered computing devices such as laptops and desktops.

The mobile society described in the previous paragraph has made an impact on teaching and learning, too. EDUCAUSE, an organization dedicated to advancing higher education through information technology, recently released findings from a multi-year study that found device ownership at a high and trending higher but the full potential was yet to be realized (Chen, Seilhamer, Bennett, & Bauer, 2015). The researchers identified the main mobile learning issue as not one of device ownership but of effective use and practices by students and instructors. They urge continued research in the emerging area and that faculty and students need comprehensive support to effectively use the devices to improve teaching and learning. Researchers and institutions have been doing just that as outlined in the two parts of this chapter. The first part of this chapter examines the initial developments and ongoing research concerning mobile learning, and the second part details mobile learning initiatives at a variety of higher education institutions.

MOBILE LEARNING FRAMEWORKS

The field of educational studies increasingly includes research on the integration of technology, developing into areas of study such as learning sciences or digital media and learning. This shift in educational studies that many are terming a socio-material framework has included an equal focus on the individual student and the technology, not prioritizing one over the other (Fenwick, Edwards, & Sawchuk, 2012). Mobile devices, in particular, play a role in this type of research and on educational practices as they either spur a change in mobile-friendly practices or traditional practices are impacted negatively by the use of devices.

Much of the early research on mobile learning stemmed from the field of computer science. Thus, much of it focused on hardware and software, competing with the educational studies frameworks of focusing on the individual student. From these competing techno-centric and student-centric frameworks, new theoretical and pedagogical frameworks are emerging that take into account the unique implications of mobile technology based on a socio-material framework that recognizes the symmetry between the student and the device.

One spurring factor for the creation of mobile learning studies was the realization that mobile technology is unique from stationary devices. A seminal mobile learning researcher, Yeonjeong Park (2011) noted the unique attributes and affordances of mobile devices in education. Further, in her essay “Mobile Learning: New Approach, New Theory,” Helen Crompton (2013) argues for an m-learning theory to account for the differences from what she describes as tethered learning. Crompton compares