Using Mobile Technology to Empower Student Learning

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Introduction

Today, cell phones are an integral part of the genre commonly known as mobile technology, which encompasses cell phones, personal digital assistants (PDA), iPod Touches, iPads, and numerous other devices. Devices of this nature have connectivity that allows for access of information and both synchronous and asynchronous communication (Clough, Jones, McAndrew, & Scanlon, 2008; Traxler, 2010). We exclude laptops from the mobile device category because of issues of weight and battery life.

Mobile technology has “nearly infinite possibilities for education, networking, and personal productivity” (Lunsford, 2010, p. 66). Clough et al. (2008) stated,

With such near-ubiquitous market penetration, mobile devices have attracted the attention of researchers and educators through their potential both as learning tools that support and enhance the learning experience and as a disruptive device with the potential to interrupt and distract. (p. 359)

The near ubiquitous access of these mobile technologies may be the cause of a shift in thinking among educators in higher education, bringing distance or e-learning to prominence because of the technology’s “ability to create and sustain communities of learners” (Garrison, 2011, p. 1). Mobile devices allow for an extension of learning beyond the traditional classroom setting, whether physical or digital. The communication and data capabilities of the devices disrupt traditional classroom boundaries and move the classroom outside of the norms of space and time (M. El-Hussein & Cronje, 2010; Yeonjeong, 2011).

Mobile Technology in Higher Education

Though many in higher education see mobile technology as a disruptive influence, one that hinders education rather than enhancing it, mobile technology is quietly gaining a place among distance educators as an effective tool for bringing diverse communities of students together (Garrison, 2011; M. El-Hussein & Cronje, 2010). Palloff and Pratt (2007) indicated that social presence is an essential element of community building. This “social” presence is defined as “the person we become when we are online and how we express that person in virtual space” (Palloff & Pratt, 2007, p. 28). Mobile devices allow individuals to post, comment and share information – to expand their social presence— regardless of geographic location or time (Engel & Green, 2011). With these technologies, individuals are able to contribute to their online presence at any given moment. In fact, mobile devices can go so far as to grant a “sense of continuous availability” (Koole, McQuilkin, & Ally, 2010, p. 61) to students in an online community.

In addition to opening new avenues of communication and strengthening social presence, the nature of distance in the online classroom is negated by the use of mobile technology, which can “amplify the
flexibility of distance and online learning, reducing the significance of geographic location, all the while increasing that of contextuality” (Koole et al., 2010, p. 60).

**Contexts of Mobile Learning**

Frohberg (2006) attempted to place mobile applications according to the learning context in which they are used: free context, formalized context, digital context, and informal context. By doing so, he presented a model that others could build upon and use as new applications are developed. In a free context application, context is not relevant for the learning activity. In other words, environmental and situational elements do not affect the learning activity. Fee context applications include administrative applications, course management applications, calculators, dictionaries, and similar applications.

Frohberg (2006) defined the formalized context for mobile applications as “learning within a well-defined curriculum, being offered by some educational establishment and led by some central actor, i.e. a teacher, tutor, moderator, and the like.” The relevant, contextual environment is the classroom either traditional or virtual (Frohberg, 2006). This could include the use of an audience response application, like polleverywhere.com, for gathering data from the students in the online environment. In addition, social networking tools, like Twitter, could be used in a formalized context for communication and community building. Applications like Twitter can give the learning community insights into the thinking of the community at a particular moment in time (Engel & Green, 2011).

The use of mobile technology in the digital learning context is purely screen based and fully designed as an educational tool. Simulations and microworlds fit this context and are constructivist in design (Frohberg, 2006; Naismith, Lonsdale, Vavoula, & Sharples, 2005; Patten, Arnedillo Sánchez, & Tangney, 2006). “Educational microworlds allow learners to construct their own knowledge through experimentation in constrained models of real world domains” (Patten et al., 2006, p. 298).

Not many of these types of simulations exist at this time due to the limitations of screen size and memory of the devices (Patten et al., 2006). However, new applications like geocaching and foursquare actually allow individuals and groups to become part of the simulation.

Elements of the digital context can flow over into the physical context. When simulations in the digital context break into the physical realm, they begin to impact students in a new way, a way that becomes physical learning. This is a leading component of mobile learning where “the role of mobile technology is to enrich the physical environment in innovative ways” (Frohberg, 2006).

**Benefits of Mobile Learning**

Informal learning, learning outside of the classroom, is foundational to true lifelong learning (Frohberg, 2006). Mobile technology is one bridge that can aid individuals in becoming informal and thus lifelong learners. Mobile technology “can be used within formal and informal learning contexts and therefore are a tool which may bridge life-wide and lifelong learning” (Beddall-Hill & Raper, 2010).

Because mobile technology is blended into people’s everyday lives, it is the ultimate support for informal learning as it can be used at any moment, regardless of location and time (Naismith et al., 2005). The very mobility of mobile technology allows learners to roam and explore concepts freely without constraint -- to manage information, wherever they are. Newer applications on smart phones allow students to search the web based on a picture taken on their phones. Other applications use augmented reality to share information about a location or object. “Mobile technology has a high potential to support this management function in mobile settings, leaving a much higher flexibility, spontaneity, and ad-hoc adaptability than analog settings” (Frohberg, 2006).
Despite the benefits of using mobile technology in appropriate contexts, higher educational institutions, like their secondary counterparts, have yet to embrace mobile technology as an essential part of pedagogical practice (M. El-Hussein & Cronje, 2010). A variety of reasons exits for this. Ubiquity is one driving element for the lack of adoption of mobile technology (Engel & Green, 2011). However, as previously discussed, the majority of college age individuals do own a cell phone if not a smart phone. Furthermore, the Pew poll indicates that minorities are even more likely to use the data and communicative applications of smart phones than non-minorities (Smith, 2010). Another drawback of mobile technology is interactivity and screen size. Market forces have addressed these issues. With the advent of tablets like Apple's iPad and Motorola’s Xoom, screen size and usability of lightweight mobile technology increased to a more usable size (Yeonjeong, 2011).

Beyond these physical limitations, others claim that safety and academic integrity issues brought about by mobile technology are too important to ignore; therefore, the technology should not be used as part of pedagogy (Engel & Green, 2011). We agree that these issues are important and should be addressed. However, they should not be reasons to keep mobile technology out of instructional practice. Guidelines should be created by institutions governing the use of mobile technology that supports their pedagogical use while giving guidance with how to deal with violators of academic integrity and student safety rules.

Mobile technology is not a fad or trend of technology that will eventually go away. “Mobile learning is the harbinger of the future of learning” (Keegan & Fern Univ, 2002). Mobile technology has the potential to change learning and teaching as we have known it. The use of this technology can empower students to become true informal learners that carry that knowledge through a lifetime of practice. Higher education stands on the edge of a great precipice of change—change brought about by mobile technology.

References


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