Increasing Student Engagement and Retention using Mobile Applications: Smartphones, Skype and Texting Technologies

CUTTING-EDGE TECHNOLOGIES IN HIGHER EDUCATION

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INCREASING STUDENT ENGAGEMENT AND RETENTION USING MOBILE APPLICATIONS: SMARTPHONES, SKYPE AND TEXTING TECHNOLOGIES

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PART I
ADOPTION OF MOBILE APPLICATIONS: SMARTPHONES, SKYPE AND TEXTING TECHNOLOGIES

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NEW PATHWAYS IN HIGHER EDUCATION: AN INTRODUCTION TO USING MOBILE TECHNOLOGIES

Laura A. Wankel and Patrick Blessinger

INTRODUCTION

The chapters in this book focus on three key areas of innovation in teaching and learning in higher education today: smartphone devices, texting applications, and multipurpose, multimedia mobile communicative applications such as Skype. Today's educators have at their disposal a wide array of digital technologies that enable them to enhance the teaching and learning process. These technologies, coupled with more valid and reliable learning theories, are revolutionizing the way we teach and are altering our notions of what it means to learn and live in a post-industrial, globalized world. Both individually and socially, these new mobile technologies are becoming increasingly popular and useful as educational tools across a wide range of disciplines as a means to engage and retain students. If used appropriately and purposefully, these mobile technologies are well suited for the increasingly interconnected and interdependent world we live in and they provide educators with another set of tools by which to enrich the teaching and learning process and educational outcomes (Kukulska-Hulme, 2012).

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Peters (2005) notes that as the cost associated with these technologies comes down, they become more widely used in society and this prevalence helps to facilitate social change by creating new ways to interact with each other. These technologies include new hardware devices such as smartphones and new software applications such as Skype. In addition, this mass diffusion of mobile technologies is being driven by a convergence of technologies that increasingly allows these technologies to interconnect and communicate with each other in a more seamless way. As such, the traditional boundaries between phones and computers and the Internet are becoming more and more integrated. For instance, traditional mobile phones now act more like computers, and traditional computers now act more like phones. Voice, data, and video continue to converge across these platforms with the Internet as the common medium of exchange.

However, these mobile technologies do not just allow us to do our jobs more efficiently and more effectively, they also provide educators with many new possibilities and opportunities to enhance and transform how we connect and interact with our students and our colleagues. As such, they provide us with a means to greatly expand our notions of learning and our notions of the purpose of education, providing us with a potentially broader definition and scope of teaching, learning, and education. The challenge then becomes how do we embrace these new opportunities while, at the same time, continue to maintain the ethos of the academy (e.g., academic freedom, pedagogical pluralism) and continue to maintain a high level of academic quality (e.g., academic integrity and rigor, professional development).

Hwang and Tsai (2011) define mobile-learning (m-learning) as the use of mobile technologies that facilitate learning. M-learning is also defined by Winters (2006) as any form of learning that is mediated through mobile devices and defined by Alexander (2004) as any form of learning that is utilized by nomadic learners. As such m-learning can be viewed as a formal and informal set of contextualized and situated learning activities that are mediated by mobile technologies. This broad definition can be a good starting point for drilling down into the specifics of who, what, where, when, why, and how of mobile technologies in an educational context. So, regardless of whether m-learning is seen as an extension of e-learning or as distinct from e-learning, the notion of the facilitation of learning is crucial since it connotes the idea that these technologies are enablers and tools that create new possibilities. This broad definition connotes the idea that better learning (i.e., more enriched, more meaningful, more purposeful, more authentic) is the main outcome of their use. As such, these tools help to

create a more open-ended teaching and learning environment that helps to overcome some of the traditional barriers and boundaries of space and time that result from the fixed space and time constraints of physical classrooms and fixed technologies like desktop computers.

So, with this broad definition in mind, this book presents several studies that illustrate how these mobile technologies are being used in a variety of educational settings and applications as active, "just-in-time" learning tools that have the potential to enable greater levels of engagement among students. As such, technology-enriched instruction that uses mobile technologies can support instructors in creating more interactive participation and a wider array of more meaningful learning activities. In addition, m-learning can support more authentic forms of learning where learning is not solely compartmentalized to strict time and space boundaries (Herrington & Herrington, 2007). As such, these technologies have the potential to support more democratic, more flexible, more autonomous, and more ubiquitous forms of learning, as well as supporting both formal and informal types of learning (Vavoula, Pachler, & Kukulska-Hulme, 2009).

M-learning tools are being used together with a larger set of teaching and learning tools and strategies to (1) increase student access and new ways of engaging with educational courses and learning activities, (2) enhance learning by making it more natural, flexible, and dynamic, and (3) support lifelong learning that is better suited to contemporary lifestyles and work-life demands. Thus, a key element of these tools' power resides in their ability to facilitate anytime, anywhere learning that is not restricted to externally imposed space and time constraints. M-learning environments provide both the instructor and student with another means to foster more dynamic and flexible teaching and learning environments. These tools can be utilized in both undergraduate and graduate level courses and in many different course contexts and learning contexts.

However, it should be noted, as with all technologies, that the uniqueness alone of these technologies is not sufficient to engage and retain learners. As with any teaching and learning technology or approach, these technologies must be used in a purposeful and meaningful way and they must be integrated within a relevant theoretical framework that is appropriate to the teaching and learning context (e.g., institutional mission, educational level, type of course, course objectives, learning outcomes). Using valid and reliable pedagogical methods and learning principles and theories is vital since they form the basis for predicting human behavior and expected learning outcomes. Again, as with all technologies, in addition to relevant and established theory, it is also imperative to be cognizant of the

epistemological, ontological, and phenomenological basis that are germane to utilizing such technologies.

ADOPTION PRINCIPLES

Two key principles emerge from the findings of the chapters in the adoption section of the book that help to frame the book's contents for mobile technologies:

1. Mobile learning environments should be viewed as global communities in which access to learning is not restricted by externally imposed space and time constraints but rather where flexible learning is valued and practiced by both instructors and students and where learning (both formal and informal) and academic engagement occurs across all space and time boundaries (e.g., political, economic, social, physical).
2. Anytime, anywhere learning environments have the potential to foster a greater sense of immediacy, interactivity, and authenticity due to their built-in flexibility, and learner self-efficacy and learning autonomy can be increased by fostering self-regulated learning (i.e., more control over one's own learning), by promoting situational learning (i.e., time and space conditions that are more suitable to the needs of the learner), by cultivating a diversity of learning contexts (i.e., contexts that are authentic and meaningful to the learner), and by nurturing more dynamic and spontaneous learning opportunities (Kukulska-Hulme, Sharples, Milrad, Arnedillo-Sanchez, & Vavoula 2011; Sharples, 2000; Traxler, 2009; Winters, 2007).

These principles are indicative of the growing need to seamlessly interact with others in a post-industrial, globalized, networked world that is characterized by interdependence and interconnectivity. Educational institutions and faculty should take the lead in preparing students for life in this rapidly evolving world. Thus, these technologies provide the potential to open up access to learning for a larger number of students who may not be able to overcome the constraints and boundaries imposed by traditional classroom settings, including fixed e-learning environments. In this sense, m-learning environments can be used to mirror the real-life demands of students without sacrificing academic quality. All else being equal, m-learning has the potential to increase educational access and engage students in more flexible and self-regulated ways. The use of Skype and other mobile technologies can provide a useful way to enhance learning (Davis, Germonprez, Petter, Drum, & Kolstad, 2009).

If the course is designed properly using appropriate design principles and facilitated using appropriate mobile technologies that are used in a purposeful manner, these types of mobile technologies can create learning environments that use both synchronous and asynchronous modalities. In other words, the question is not whether the synchronous modality is better than the asynchronous modality but how can both modalities be used in an integrated and purposeful way to enhance the overall learning process. Ferratt and Hall (2009) suggest that using both modalities can enhance teaching and learning. The flexibility of m-learning can therefore provide an effective way to foster individual engagement and group collaboration across traditional boundaries and barriers. Using these technologies can also better prepare students to work more effectively in an increasingly interdependent and interconnected mobile world.

In short, m-learning provides another opportunity to increase teaching and learning effectiveness. It helps to untether teaching and learning from the confines of the physical limits of space and time such as the notion that meeting at a specific time and place each week is the only way and the best way to teach and learn and that one type of learning, such as listening to a lecture, is the only or best way to learn. In fact, there are many ways to teach and learn (both formally and informally) depending on the context and situation. So, with these types of technologies, the focus shifts from traditional space and time considerations which may (and often do) impose unnecessary constraints on learning to more authentic and experiential forms of learning where the focus is on the learning needs of the students. Thus, if designed properly and integrated into the course in a purposeful manner, mobile technologies can provide today's learners with a more sustainable and practical means to augment their learning experience, especially since today's learners are increasingly accustomed to using mobile technologies as a normal part of their lives. As such, higher education institutions should continue to adapt to this digital world in ways that better suit the contemporary lives of learners.

APPLICATION BENEFITS

As illustrated in the book chapters of the application section, these types of learner-centered m-learning environments support

1. contextual and situational learning where learning naturally occurs across home, work, and school domains in a multiplicity of complex

situations and contexts, and where context is constructed by the complex interplay of situated interactions;
2. open-ended and flexible learning, in both formal and informal ways, where learning is flexible and more naturally distributed to suit the context and the needs of the learner;
3. distributed and ubiquitous learning where the responsibility for learning and the locus of control of learning is distributed across learners, instructors, mediating technologies, and knowledge resources;
4. sustainable and self-regulated learning that fits better and more naturally with learning that occurs across the varied life stages of learners, where learning is a natural life-long activity; and
5. personalized and authentic learning that is personally meaningful to each learner and more conducive to how today's learners engage with their life-world environments.

In other words, learning tends to be more effective when learning is more meaningful and relevant to the ways students (and faculty) live their lives (personally and professionally). In short, the question becomes: How do we construct more effective learning spaces such that given that a large part of learning takes place outside the formal classroom setting? Most learners today are continuously mobile, highly networked, and make use of mediated communication technologies. This contemporary lifestyle often transcends traditional space and time boundaries, and as such, the mediating technologies we use as a normal part of our contemporary lives are transforming the ways in which we work, live, and learn. Thus, the role of teaching and learning is also shifting from a passive uni-directional instructional paradigm where the locus of control resides exclusively with the instructor to a more active multidirectional networked teaching and learning paradigm where the locus of control is more distributed. In this emerging paradigm, we must reconceptualize the meaning of learning within the context of the post-industrial age. Mobile technologies are playing an increasing role in the evolution of this emerging paradigm.

THEORETICAL FRAMING

By looking at m-learning from different perspectives, the authors of this volume operationalize mobile technologies in the spirit of social constructivism and activity theory, which are supported by the learning theories of Vygotsky, Leontiev and Luria (1968). Constructivism is an educational

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