MOBILE PEDAGOGY

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ABSTRACT

How can higher education leverage information technology to address the importance of social and geographical context in learning? This reflection paper begins with a review of the literature on learning technologies to identify the key questions of study. Building upon the missing links of pedagogy, context and process, the author proposes an alternative view of how academia can integrate what mobility has to offer. This contribution concludes with a vision of "mobile pedagogy" that underpins his current work in management education.

KEYWORDS

Mobility, Pedagogy, Learning Technologies, Management Education, m-learning

1. INTRODUCTION

Mobile pedagogy embodies a defining set of principles and methods that leverage social and geographical context in learning. Mobile pedagogy can potentially play a critical role in designing management education in encouraging students to appropriate the learning agenda, to transform classroom knowledge into usable competencies, and to elucidate and harness the power of professional networks. To reach this potential, advocates of mobile technologies will need to propose clear answers concerning its place inside, or along side, the core concepts of pedagogy.

Professional opinions diverge significantly concerning the impact of mobile technologies in learning. Four short years ago, Livingston (2009) noted that the near universal use of mobile phones among university students has had little to no impact on educational experiences and services. Earlier this year, Proulx (2012) suggested that universities are at a tipping point on which internet technologies have dramatically challenged the very nature of the classroom. Before commending or condoning either point of view, it is important to gauge the challenges and potential advantages of mobile technologies for students, instructors and institutions of higher education.

This "Reflection" paper explores the place of mobile pedagogy in the field of higher education. The work addresses four current challenges:

 − How can we operationally define "mobile pedagogy"?
 − How do current technologies leverage this concept?
 − In what ways has this vision challenged the traditional processes of higher education?
 − Which concepts and principles can enhance the value of this practice in the future?

We will begin with a review of current research on learning technologies to identify the key questions of study. We will then turn our attention to an alternative view of how pedagogy can refocus on what mobility has to offer. We will conclude with the tenets of our vision of "mobility pedagogy" that underpin the development of our AMATE™ platform as an interactive support for management education.

2. RESEARCH THEMES

If scholarly work on the use of mobile learning has not revolutionized the use of technology in education, it has contributed to our understanding of how IT can support the learning process. A quick review of research over the last two decades draws our attention to how mobile technologies have been used in support

distance, blended and/or course room education, how IT have shaped higher education, and how they reflect deeper "realities" of our social cultural systems.

Learning technologies are designed to support learning through the creation, deployment and management of appropriate technological processes and resources.[i] One central theme in the literature to date centers on the role of mobile technologies in the classroom. Kadirire (2009) defines mobile learning as a form of e-Learning which takes place anytime, anywhere with the help of a mobile device. Keskin and Metcalf (2011) note the example of MoLoNET that studied "the exploitation of ubiquitous handheld technologies...to facilitate, support and extend the reach of teaching and learning".

The major challenge facing this line of reasoning is identifying exactly which processes and resources mobile technologies are designed to support. As many authors have argued, it is difficult to identify where learning starts and ends. Walker (2006) points out that mobile learning is not about anytime, anywhere access but about learning perpetually and across contexts. Chan et al. (2006) suggest that the concept of seamless learning might be more appropriate to describe learning processes in which learners use mobile devices to navigate from context to another. Traxler (2007) concludes that the impact of mobile technologies could be better understood by focusing on taxonomy of use scenarios: technology driven mobile learning, portable e-learning, connected classroom learning, situated mobile learning, mobile training and remote mobile learning.

A second specific research theme, exemplified by Engestrom (1996), proposes that mobile devices are simply another example of how information technologies have shaped the contours of education. Textbooks, computers, and video equipment have historically both supported and defined the limits and possibilities of class and the classroom. Learning technologies today incorporate software, hardware, and Internet applications like wikis, blogs and social media. As a whole, information technologies have permitted the development of personalized learning styles, learning designs, and blended learning. How will the introduction of mobile phones in the classroom impact learning objectives and outcomes?

The precursors of mobile learning suggested the possibilities of mass personalization in distinct learning spaces mediated by hand-held devices. Norris & Soloway (2002) question the foundation of this "1:1" vision, pointing out that learners rely on a variety of technologies to support their learning styles. In the last decade, the notion of "seamless learning" has gained in popularity; mobile devices function as interfaces between learners and their different learning environments (Bentley, Shegunshi, & Scannell, 2010). ong (2012) advocates revising the notion of a personal 'learning hub' independently of one mobile device: each learner's profile can be stored and developed on a cloud based, device-independent learning platform.

A third research perspective has explored to what extent learning technologies have mirrored the broader foundations of dominant social cultural systems. Authors argue here that the introduction of technologies in the classroom is far from neutral; information technologies have simply reinforced the traditional views of control, context and communication that learning represents. Sharples (2005) underlines the over-riding concern with control: traditional learning technologies are most often designed around a specific curriculum to reach the professor's teaching objectives. Parsons et al. (2011) suggests that, far from decontextualizing education, learning technologies introduce context as a shell that reinforces the images of foundations of formal education. In this view, communication remains channeled between that of the instructor (whether it a real life or virtual professor) and the students that are largely shielded from the contradictions and uncertainty of the real world.

Other researchers have explored the dimensions of learning communities (e.g., MacGregor, Tinto, & Lindbald, 2001) and the interdependence of individual and collaborative learning (e.g., Kazmer, 2005; Skop, 2008). Yu (2007) suggests that the literature on mobile learning initially focused on transferring learning content onto mobile devices, a second generation focused on pedagogical, while the third generation explores the use of context-aware technology. Wong (2011) argues that mobile learning has tended to confine learners within the context of formal learning (teacher- or expert-planned learning materials or activities), whereas new insight can be gained in exploring how mobile learning stitches together the students' formal and informal learning in personalized learning experiences.

3. THE MISSING LINKS - PEDAGOGY, CONTEXT AND CONVERSATION

This discussion of learning, technology, and culture has neglected a number of questions that could enhance our appreciation of the subject at hand. What is the link between learning technologies and pedagogy? Can we talk about mobile learning without exploring the pedagogical implications on both teaching and the institution? Can or should pedagogy be decontextualized? How do mobile applications capture context, and how will this shape mobile pedagogy? Would mobile pedagogy be more relevant in suggesting that learning itself has become mobile?

Pedagogy

What do we mean when we refer to the importance of pedagogy? Formal definitions of the subject evoke the science, art or profession of teaching. The fundamental objectives of pedagogy entail the development of the human being, or at least the acquisition of clearly identifiable knowledge, skills or competencies. Obtaining these objectives requires elucidating the learning processes within which professors, students, and the technologies interact. Does mobile pedagogy refer to simply changing the technologies, or how technologies shape pedagogical context, processes and participants?

Park (2011) concludes that mobile applications have rarely been founded in established pedagogical theory. Trans-actional distance theory, as exposed by Moore (1997), provides one potential theoretical foundation in proposing that virtual communication is a form of self-action and inter-action. Jonassen (2000) claims that activity theory could provide a powerful framework for designing student-centered learning environments. Naismith et al. (2004) suggest that mobile practices can be explored through various paradigms including behavioralist, constructivist, situated and collaborative. Kang and Gyorke (2008) underline the insight of cultural-historical activity theory (CHAT), which suggests that artifacts, including language and technology, mediate the social aspects of human activity.

Context

University courses are often modern day examples of the Aristotelian unities reflecting strict applications of the harmony of time, place and action. If courses are building blocks of higher education, courses are built of classrooms, classes, professors and students. Class refers to a group of students who meet at a regularly scheduled time to study the same subject, and usually implies that they are taught together. A professor is literally a "person who professes", an expert in the arts or sciences, a teacher of high rank.[ii] In between the professors and students are a number of fine examples of technology: podiums, desks, pointers, and increasingly, information technology.

All activity is performed in both geographical and social context. Cole (1996) makes an important distinction between context as "that which surrounds us" and context as "that which weaves together". Learning thus not only occurs in a context, it also creates context through continual interaction. This duality exists in mobile learning between the student's learning environment and the context arising out of the constructive interaction between student and technology. This vision situates the learner inside a filtered "shield" in which the senses receive "meaningful" data. These contexts can be elucidated from the myriad of data within a student's reach in a number of ways: creating a supportive workspace, forming ad hoc social networks, or fostering meaningful conversation.

Conversation

When we introduce the notion of mobile pedagogy, we suggest that learning has more to do with how we capture context than how we design technology. The challenge in higher education today is that our context is increasingly mobile, regardless of the technology at hand. The foundations of learning are continually shifting as we move from one location to another, deploy new resources, and enter new conversations (Lonsdale et al., 2004, Sharples, 2005). Learning is not a neat transfer of information, but a complex and often-chaordic network of technology intermediated human relationships (Russell 2002). Professors are no longer the sole custodians of knowledge, the learning agenda focuses increasingly on conversation itself.

Education can be thought of as a directed, continual conversation. *Directed* in that education presupposes clearly defined learning outcomes for both the class and the students. *Continual* in that the learning experience neither starts, not stops, when the student enters the classroom. Pedagogy offers us the opportunity to structure and to enrich the language that ties each student to the context in which they work. As such, both the classroom and the professor shape the direction and the boundaries of conversation. Can we speak of mobile pedagogy without speaking of classrooms, instructors and content? The use of mobile

technologies offers academia an opportunity to extend the conversation, it offers a new way to experience, interact, and dialogue. It is not any more or less virtual than the University itself, it is a complementary avenue to understand context through conversation.

4. MOBILE PEDAGOGY

Information technologies can provide virtual windows through which students can view the realities of social behavior. Mobile interfaces can become platforms designed to enrich the interactions between those that produce information on one hand and those that consume it on the other. The ability of mobile technologies to capture both geographical and social context can offer students a filtering device to focus on the specificities of organizational dynamics. Realizing this potential has guided our own efforts in the AMATE™ platform for management education. [iii]

The AMATE™ platform integrates a number of design principles to bring both substance and structure to the concept of mobile pedagogy. We believe that mobile content should be consumable rather than exhaustive, keyed to students' study habits than to the standards of academic writing. Pedagogical content here is keyed to real world situations: the instructional design incorporates workbooks, games, and simulations that take advantage of mobile technologies unique set of functions and features. Continuous evaluation exercises are built into each support, reflecting both a student's previous work and community input. Taken together, we believe these principles provide a solid foundation for building a case for mobile pedagogy.

To conclude this "reflection paper", we will explore the tenets of this vision of "mobility pedagogy" in more detail. We suggest that mobile pedagogy should be consumable, and as such, educational content should take into account the study habits of the vast majority of students today. Reading habits have changed as the digital delivery of data, information and scholarly work has become increasingly prevalent. Graphics and video compete with the written word to inform and organize students' understanding of the world around them. The need to facilitate discovery of meaningful content has become a critical objective of higher education as information overload has become synonymous with the Internet Economy itself. In structuring and restituting content through transmedia authorship we can provide a key piece in the larger picture of pedagogy today.

In proposing that mobile pedagogy be applicable, we are implying that instructional design can integrate interactive workshop exercises, games, simulations alongside the subject of study to help students apply the content to the realities of their own professional challenges. The principles of activity theory, illustrating educational principles with experience, actions and practice can be implemented profitably on mobile devices. Student work, as well as instructor input, can be accessed anywhere, anytime and on interface. Feedback, not only from course instructors, but also from peers and subject experts, becomes a core principle of mobile pedagogy.

By integrating continuous evaluation into mobile pedagogy itself, we are proposing that institutions and faculty can use the unique characteristics of mobile devices to help students better situate progress towards education goals. The ability to transmit and then store student input on the "Cloud" allows students to both compare their results over time and to compare their results with the aggregates of target communities. Institutions can study the aggregate data themselves to get a better handle on the objectives, behaviors and outcomes of students over time. The ability to recall the data on demand can also be leveraged in teacher/student interviews in class or from a distance.

Learning becomes a truly social activity, where students can draw on the experience, suggestions, and proposals of their colleagues. Students demonstrate daily their affinity for their telephones, micro-messaging services, social media, and video archives. Mobile pedagogy can potentially harness these "intuitive" communication channels to enrich and extend class discussions as students talk to other students. Mobile devices can not only host these apps, but also capture the content that stimulated the desire to communicate. Mobile pedagogy can thus take into account student behavior, not just their outputs. Higher education institutions can glean invaluable data on how student and faculty interactions shape the learning process.

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[iii] AMATE™ is a social book publishing platform developed for management education. We are currently beta-testing the platform this year in two international IT companies, two business schools, and with four general public management titles.