Mobile Learning for Humanities for Higher Education in Developing Nations:

Needs Assessment, Research Processes, and Expert-Level Solutions

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Date: 10.10.2010

Research Proposal

**Area of Research**

The advent of mobile learning has offers an untold opportunities for learning across both time, space, and context. While these mobile learning interactions are highly collaborative, highly contextual, and both complimentary and contradictory to formal education, they are incredibly complex exchanges that require further research. Mobile learning assumes that the learner is mobile, rather than the technology. While mobile technologies are certainly important in this definition of learning, they are not deterministic to the process of learning for the learning itself. They are devices of connection to information, to community, to additional layers of context and they can be appropriated as needed by the learner as they move between settings (Sharples et al, 2005).

Mobile learning applications can include classroom response systems, participatory simulations, and collaborative data gathering, among others. These applications revolve around the introduction and contextualization of learning at a novice level, but very few applications and projects target existing expertise. According to Frohberg, these applications do not support expert level learning as they have a lack of tools to reflect and process their knowledge, to record and share their insights with others, and to create material to work with a self-reflecting or cooperative process (2009, p. 322). This poses both an opportunity and a challenge for the marriage of higher education and mobile learning.

It is the intended goal of this research to explore the requirements for potential expert-level mobile applications for the non-sciences, specifically Literature, Cultural Studies and History. The target audience for these expert level applications will be university students at higher education institutions in nations classified as developing by the World Bank (http://data.worldbank.org/about/country-classifications). Specific subjects generally considered humanities-based are targeted not due to any inadequacies on the marriage of mobile learning and science; rather, these subjects are chosen primarily due to the absence of expert-level mobile learning frameworks and applications for university level education in both developed and developing nations. In short, very little research has been conducted to determine whether mobile learning in the humanities is a suitable vehicle for higher education in developing nations; a framework will be applied to assess whether this is indeed possible, whether mobile learning in these disciplines can support reflective, multimodal, and collaborative knowledge construction, creating work that can be disseminated and appropriated by the larger academic community. Further, Literature, History, and Cultural Studies do not ascribe to strict disciplinary boundaries much as the field sciences do and therefore offer a greater challenge to mobile learning in terms of scope and representation. These disciplines appropriate content from other disciplines when needed, are inherently multimodal in expression, and often non-linear in progression. This research will explore whether these core characteristics and requirements can be adequately expressed for the purposes of higher education with mobile learning.

**Literature Review**

To properly evaluate mobile learning in these chosen disciplines for expertise learning associated with formal higher education learning communities there will be two parallel frameworks used for evaluation, one related to pedagogical aspects of mobile learning and the other taking a more technological approach. It is the hope of this research that the combination of technological and pedagogical will produce sufficient evidence to determine the validity of mobile learning for higher education within the fields of Literature, Cultural Studies, and History.

Pedagogically, it will first be critical to explore the core requirements and needs of these disciplines as they related to formal courses of study in higher education. To do so will require an identification of the stakeholders compromising a sampling of the practicing community and a needs assessment for these disciplines in terms of functionality and critical processes central to these disciplines. These processes will be mapped to mobile learning technologies and pedagogically examined according the constructivist framework of instruction as advanced by John R. Savery and Thomas M. Duffy, which stresses the role of context and social negotiation of knowledge in instruction (1996). Mobile learning’s affordance for this context and social negotiation will be analyzed to determine its applicability to these disciplines in higher education.

Building on this constructivist pedagogy, the work of Jan H. F. Meyer and Ray Land in regards to threshold concepts, most notably in their work “Threshold concepts and troublesome knowledge: Epistemological considerations and a conceptual framework for teaching and learning “ (2005), will be applied to the mobile learning requirements of Literature, Cultural Studies, and History for higher education. These threshold concepts are specifically engineered into this research by including three separate disciplines, disciplines with some degree of overlap. Meyer & Land’s analysis of their role in developing “pedagogically fertile” and role defining shifts in learner’s understanding of their role as active members of the discipline has great application for higher education as being the vehicles for disciplinary understanding (2005, p. 374). Mobile learning’s ability to stimulate these threshold concepts for disciplinary understanding will be analyzed in this research.

Technologically, “Towards a Theory of Mobile Learning” provides an adequate mediation between learning and technology for higher education and will be used to measure mobile learning applications for higher education in the three chosen disciplines (Sharples, 2005). Sharples builds on the work of Pask (Conversation Theory) and Engestrom (expansive activity model) by establishing the technological layer of mobile learning, which represents learning as an engagement with technology, “in which tools such as computers and mobile phones function as interactive agents in the process of coming to know, creating a human-technology system to communicate, to mediate agreements between learners (as with spreadsheets, tables and concept maps) and to aid recall and reflection (as with weblogs and online discussion lists)” (2005, pg. 7). Further, the work of Sharples, Taylor, and Vavoula offers insight into an evaluation of any potential mobile learning solution for expert level systems in these fields, an additional layer of framework that can be applied to this research (2007). This work posits mobile learning in terms of its affordance for mobility, its coverage of formal and informal learning, its identification of learning as a constructive and social process, and the role of situated activity mediated by technology (2007, pg. 225). Any potential mobile learning solution derived from this research will be gauged based on its ability to satisfy these facets of mobile learning.

Sharples’ work will be used as an instrument to determine whether mobile learning for Literature, Cultural Studies, and History creates control (both the community of learners and their association with higher education), context (in terms of the learning activities and objects) and communication (in mobile learning’s ability to allow for communication both within the learning community and the ability to disseminate communication to the greater academic community). Adjacent to this analysis of context in mobile learning will be activity theory, the mediation of knowledge through tools, technology, and language. Mobile learning is especially suited to activity theory, this mediation of learning with technology and language, due to its focus on context and that learning objectives can be met through multiple contextual structures (E. Wali et al, 2008, 46). Mobile learning demands flexibility in contextual approach, a flexibility well suited to activity theory. The potential of mobile learning applications to support expertise level learning in Literature, Cultural Studies, and History will be examined according both these pedagogical and technological frameworks.

**Mobile Learning and Development**

Mobile learning offers nations classified as developing the opportunity to leapfrog a technological cycle by foregoing upgrading from a current computer based infrastructure of communications. This leapfrogging process opens opportunities for developing nations to bypass stages of “technology development and to stimulate social and economic development” (Davison, Vogel, Harris, Jones, 2000, pg. 5) As the ICT of greatest penetration in both the developed and developing world, mobile offers the greatest advantage in terms of leapfrogging a technological cycle. While the need for computing infrastructure still remains, it is mitigated by the appearance of mobile technology to lessen the digital access gap experienced in many developing nations.

To move beyond mere data collection and dissemination and towards reflective and collaborative knowledge creation in these non-scientific disciplines will require an adherence to the pedagogical approaches found in constructivist learning (Tetard, 2008). In this pedagogical approach, it is understood that knowledge is created through the interactions of experiences and ideas. This approach is well suited to mobile learning because mobile learning allows for experience-based learning *in situ,* an analysis of the object in learning in the context of the object itself. Context in formal mobile learning environments is a mediation between the agents involved. In short, the context is formed by the interplay of the tools (technology) employed, the tasks designed through institutional control, the community of practice (however informal and transient), the location and level of expertise of the learner, and their proximity to the subject of learning itself. Higher education, in this sphere, can provide community, tools, and context.

**Research Questions**

* What are the core processes of the disciplines of Literature, Cultural Studies, and History that would need to be represented in a mobile learning platform to map to learning outcomes associated with formal higher education courses of study?
* Can mobile learning provide tools that allows for these processes to be sufficiently met for higher education through core functionality and augmented reality applications?
* Can any developed mobile learning solution that meets the needs of these disciplines be executed and sustained in developing nations?

**Research Techniques**

The research methods employed for this research proposal will be varied to reflect both the qualitative and quantitative elements at work. At the core of this research will be a process and needs assessment for the fields of Literature, Cultural Studies, and History in higher education. This assessment and subsequent evaluation of the aforementioned frameworks for evaluation will be used to determine the usefulness of mobile learning solutions to support expert level learning for higher education. Further analysis will be directed towards their applicability towards developing nations.

1. Identification and communication with select faculty and students in Cultural Studies, Literature, and History. This will represent a sample community chosen with an eye towards representation and will include higher education from both the private and public spheres.

2. Once the sampling community is chosen and contacted, a survey will be prepared and administered. This survey will attempt to gauge the core processes and information needs for the chosen disciplines of

* Cultural Studies
* Literature
* History

This survey will gauge the core processes of these disciplines, including research workflows, resources consulted, collaborative activities, and research dissemination. Further to this process and needs assessment will be emotive elements to gauge receptiveness to mobile learning for higher education as well as perceived technical acumen of both faculty and the student sample population. The National Survey of Student Engagement: Conceptual Framework and Overview of Psychometric Properties will be consulted in the survey development stages (Kuh, 2001). This survey will be conducted with the above sample group at two stages (time intervals) to gauge the receptiveness of the higher education community towards mobile learning for Humanities-based education.

3. Mapping to Mobile Solutions-Assessment

Based on the survey results and any subsequent interviews conducted for clarification, an assessment will be conducted that will attempt to analyze the mapping of these processes, information and collaborative needs to mobile learning solutions. At this stage, the ability of mobile learning to fulfill these needs and processes will be analyzed according to the frameworks mentioned previously. Included in this analysis will be a recommendation to higher education as to the pedagogical appropriateness of mobile learning in Humanities-based education and design considerations for mobile learning developers. These design considerations will attempt to marry the pedagogical directives of constructivism (and the related tenets of threshold learning and troublesome knowledge) with the potential afforded by mobile functionality, including augmented reality and more. This analysis represents a core deliverable of this research and will be drafted specifically for wider dissemination to the academic community. This analysis will form the foundation of the formal dissertation.

4. Although not core to the purposes of this research, a collection of mobile applications related to expert based learning in Humanities-based learning in higher education will be maintained online. This will be an ongoing, transparent database of mobile applications, frameworks, tools, and related data. This collection will attempt to build on Frohberg, Goth, and Schwabe’s inventory of mobile learning projects (2009).

**Timetable**

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| Sampling | to start immediately | to be completed by end of Year 1 |
| Survey | to follow Sampling | to be completed during Year 2 (immediately following completion of Sampling) |
| Mapping/Assessment | to follow Survey | to be drafted by end of Year 2 |
| Dissertation | to follow Mapping/Assessment | to be completed by end of Year 3 |
| Database of Mobile Solutions | to run parallel to these activities | to be included as Index to Dissertation by end of Year 3 |

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