Preparing Mobile Learning Strategy for Your Institution

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ABSTRACT

This paper offers a practical guide to the creation of an m-learning strategy for an educational institution. It provides steps and recommendations for a successful and sustainable m-strategy. This summary of lessons learned includes a brief account of successes, failures, and barriers experienced by a mobile learning practitioner.

Author Keywords

Mobile learning strategy, m-strategy implementation, steps to adopting mobile learning

INTRODUCTION

Researchers and scholars seem to agree that mobile learning is one of the key innovations changing the landscape of higher education and the expectations put on educational institutions (Bates, 2012; EDUCAUSE, 2012). Universities and colleges are expected to respond by integrating m-learning practices and technologies into their programs. They have to ascertain that their overall academic strategy includes objectives and plans to integrate m-learning across the organization. This challenges the academia to reimagine the teaching-learning relationship, its overall context and the corresponding processes and outcomes.

This article offers recommendations on how to design and implement a mobile learning strategy at a college or university. It provides a brief account of the steps and components of the grand plan as experienced by an m-learning practitioner and refined based on practices of other m-learning strategists. The m-learning strategy and enabling tactics presented here could be applied at a micro level to individual educational projects; however, this article illustrates a high-level plan of action that evolved over two years to provide a macro-strategy for integrating m-learning across a college. The plan includes processes, resources, frameworks, as well as other outputs and requirements needed to progress to the desired state of mobile learning at any similar institution. Put together by a faculty member who was charged with the tasks of designing an institutional mobile learning strategy, this practical model has been attuned to the unique educational and organizational context of the college. Nevertheless, it is a replicable approach which accommodates any organization's strengths, weaknesses, opportunities and threats.

BACKGROUND

When the process, reported in this article, commenced in the summer of 2011, the college, similarly to the majority of North American organizations (Ally & Palalas, 2011), was planning to eventually implement m-learning; however, it was not actively pursuing that goal at that point in time. With a couple of isolated m-learning research studies scattered across the institution, only faculty directly involved in the projects were exploring the merits of m-learning and its applicability at the college. Started as a "grassroots movement", the persistence of the involved mobile learning practitioners coupled with the documented success of their m-projects, attracted some interest amongst the top executives which led to the recognition that the college needed a well-thought-out mobile learning strategy. Considering the very limited resources tasked with designing the strategy, the first step was to identify the existing mobile learning expertise and connect the fragmented m-learning efforts from various academic programs.

As a result of many inquiries and ad-hoc meetings, findings from the four disconnected m-learning studies at the college were finally drawn together to provide a glance at the actual mobility needs as well as the preparedness of the faculty and students. These findings highlighted the fact that the widespread adoption of many things mobile in other areas of everyday life did not translate to a widespread understanding of m-learning and what it entailed for the teaching-learning relationship. The trend toward mobility was not necessary reflected in the curriculum design or faculty professional development. Informal learning patterns of our students and some faculty might have changed, however, that had no effect on curriculum or teaching. With mobility growing rapidly outside the academia, it was our learners who were bringing m-learning into the classroom and persistently introducing its capabilities. Surveys conducted by the original m-learning studies confirmed that the college students used their mobile phones and tablets in ways that would augment classroom learning. There were also signs of student learning habits shifting toward more chunked-up spaced learning supported by ad-hoc information access and frequent communication exchanges. Social media and mobile tools available through portable devices seemed to affect the learning patterns of our busy adult students. Accordingly, student mobile learning expectations were growing; so was the curiosity of some faculty and administrators at the college. These were only some factors pointing to the need of exploring the adaptation of mobile learning at the college. The next step was to conduct a thorough needs assessment as part of the organized efforts toward a comprehensive mobile learning strategy that would align with the organization-wide academic macro-strategy. It is worth noting that the discussed m-strategy

encompassed both mobile learning and mobile performance support at the college, which are related but not synonymous (Berking et al. 2012).

DEVELOPING MOBILE LEARNING STRATEGY: AN INCREMENTAL PROCESS

It was, indeed, essential to work out and articulate a clear path to how mobile learning could be implemented as an integral part of the college-wide academic strategy and its long-term plan. A strong business case had to be built addressing a number of elements including, amongst other information, the targeted educational problems and potential solutions, their scope and context, current state, deliverables such as outcomes, planned benefits, key stakeholders and areas impacted, the roadmap to these outcomes containing required activities, schedules, supports, resources, and costs, as well as a number of controls and metrics to monitor the success of the undertaking.

It quickly became evident that the development of the m-learning strategy had to be incremental. To prepare the foundations for change management, we had to first identify peer champions and with their help propagate examples of how m-learning could enhance student success and satisfaction as well as augment teaching practice. Like laying down bricks, the groundwork was constructed from short-term m-learning tasks and projects leading to immediate measurable results which were easier to demonstrate and argue. These efforts to gradually win the support of faculty and management were combined with the systematic steps to raise the awareness and understanding of what mobile learning meant in the specific educational environment. Overall, the following six iterative phases were instrumental to the design of a compelling m-learning strategy: (1) a needs assessment, (2) collection of empirical evidence and feedback, (3) feedback exchange and communication, (4) ensuring adequate infrastructure and enterprise systems (including technical support), (5) training/professional development, as well as (6) the development of the actual m-learning strategy document. The resulting m-strategy document needed to encompass the following core elements:

- The definition of mobile learning in the specific educational environment;
- The pedagogy of mobile learning (the pedagogical and instructional design principles that distinguish m-learning from other pedagogical approaches);
- The institutional background and context;
- The key goals (the targeted problems, solutions, and benefits);
- The vision and scope of change (key stakeholders and areas impacted);
- The college-wide governance of mobile learning;
- The standards, policies, and procedures governing mobile learning;
- The implementation details including the detailed plan, timelines, activities, deliverables, resources, costs, and the alignment with the organization-wide business plan;
- Training and Professional Development;
- Analytics and evaluation (formal mechanisms to measure activity, participation rates, impact, student satisfaction);
- Technical support and services;
- Communications mechanism (a centralized strategy for communicating with users regarding m-learning);
- Investment plan to support the execution and sustainability of mobile learning.

CONCURRENT PHASES OF THE EVOLVING M-STRATEGY

The six phases of planning and formulating a solid blueprint for organization-wide adoption of m-learning were not organized in a linear fashion. They all occurred simultaneously thus allowing for the optimal utilization of scarce m-learning resources and time. Moreover, the iterative approach enabled an agile evaluation of the feedback drawn from all the activities and, in turn, strategizing of the subsequent steps. For the sake of brevity, only key observations concerning each phase are summarized in the following sub-sections and presented as recommendations.

Needs Assessment

Informed by the previous mobile learning projects and literature, this phase aimed to explore the gap between the current and desired state of m-learning at the college. It is essential to establish whether there is a true need for mobile learning and whether the organization and its stakeholders are actually ready to implement it. The best place to start would be to first agree on what m-learning means in the organization, what educational problems it could address, and what potential benefits can be anticipated. Evaluate the merit of m-learning by exploring what unique problems can be solved by mobile learning rather than other pedagogical approaches. Consideration should also be given to what enablers, challenges and risks can be expected.

Resource requirements (physical/logistic, technological, human, and monetary) are another significant aspect. What resources are required to deploy and sustain m-learning as well as to integrate it seamlessly into the e-learning/computing strategy of the institution. Are they available? Consider, for instance, the availability of mobile programmers, designers, subject matter and mobile learning experts at your institutions. It is vital to realize that mobile learning necessitates dedicated resources that include expertise in m-learning design, development and facilitation, which is not equivalent to e-learning expertise, just as m-learning is not synonymous with e-learning. Therefore, while ensuring a smooth incorporation into the existing e-learning framework, identify the unique resources and trajectories that mobile learning necessitates.

Another important issue is that of the target audience and their preparedness for a mobile learning solution. We examined our audience through online surveys, interviews and focus groups. These were conducted twice over the period of three years to analyze the portable device usage and mobile habits of the students and faculty. In addition, to be aware of global trends, the results were compared with national and international findings such as EDUCAUSE reports.

While examining the educational and technological context, one of the key inquiries should be into the current state of the IT infrastructure including the Wi-Fi network as well as the opportunities and barriers of the LAN and wireless framework. On-going dialogue with the IT department is a source of invaluable answers and ideas. Their expertise is also helpful in conducting the m-learning analytics (measuring what mobile software, hardware, operating systems, how many users, what mobile sites are used). Not only do these metrics help to measure success against the m-learning strategy objectives, but they also provide a better understanding of trends and changes. Likewise, metrics from the institution LMS may facilitate decisions on how to incorporate new m-learning solutions into the existing framework.

Yet another key area for investigation is whether to create or reuse the existing learning content and mobile applications. To leverage some of the existing materials, by redesigning and repurposing them to suite the mobile context, the appropriate content has to be determined through systematic in-situ exploration. Similarly, the plentiful applications and uses of mobile tools have to be researched on an on-going basis in the context of its future use and the m-learning pedagogy. This function of the needs assessment phase extends over to the evidence gathering activities.

Feedback and Evidence Gathering

"Mobile learning challenges teachers to examine how mobility relates to their teaching aims, methods and subject matter" (Kukulska-Hulme & Jones, p. 65). Collecting empirical evidence of the uses of m-learning and gathering feedback along the way are vital to laying the groundwork for incremental m-strategy. In hands-on mobile projects, it is the students and their professors who determine best practices for replicable applications and procedures that are desirable and feasible in the unique educational contexts. In line with good innovation practice, it is recommended to run several m-learning pilots evaluated in realistic settings and thus answer the questions of who, when, how and why mobile learning. To ensure sufficient understanding of the broader organizational context, rather than individual courses, it might be helpful to organize a number of smaller research projects and pilots across various faculties (well-planned and rigorous, following established pilot selection and completion procedures) and avoid too many lengthy studies. There is an obvious merit to longitudinal research but for the purpose of m-strategy creation, the focus is on prompt dissemination of findings and consequent adjustments of the strategy. Moreover, m-learning is characterized by rapid changes to the technology landscape necessitating a responsive approach to the design and selection of educational materials and tools.

In order to provide a richer insight into the various facets of mobility, projects should be selected to represent diverse contexts and needs. They should include evaluation of existing mobile tools, materials and artifacts, as well as creation and curation of such resources. Different mobile delivery/content distribution/app provision mechanisms as well as maintenance and governance strategies should be tested. Content strategy and pedagogy issues have to be addressed. The changing roles of all actors involved in mobile learning also deserve a close examination to enhance the readiness of the stakeholders. The mobile projects at the college, for instance, included a new student orientation scavenger hunt app (built and evaluated by the students and faculty), use of existing Augmented Reality apps (to augment hands-on learning), repurposing mobile recorders to support in-class activities, creation and distribution of podcasts and e-books (both by learner and faculty), testing Blackboard mobile apps, designing and creation of a mobile system to teach ESL (a cross-departmental study), using tablets for evidence collection during field practice, the evaluation of backchanneling and polling to augment classroom learning, and a number of other projects. A research→design→develop/repurpose→ deploy→evaluate→disseminate model was employed. Both students and faculty were participating in all the studies with all design, development, and evaluation activities being incorporated into the course curricula. Measurable results of the pilots were presented vis-à-vis strategic objectives and communicated across the college.

Feedback Exchange and Communication

Formal and informal feedback exchange in addition to cross-divisional communication fuels all major decisions and plans regarding the m-strategy. It enables sharing of research findings, concerns and solutions. It connects all m-learning experts and projects across the institution, and keeps the stakeholders in the loop. In order to maintain consistent interest in the m-learning developments, the information-reflection-documentation-sharing process has to be supported through a number of synchronized communication channels. The college, for instance, used for that purpose a combination of a website dedicated to the mobile initiatives, email, Facebook page, m-learning ambassadors (self-selected faculty members representing various departments), ad-hoc meetings, and regular meetings of a mobile learning reference group representing all departments and teams that were instrumental to crafting and implementing the m-strategy (faculty, students, IT professionals, innovation in teaching and learning representatives, senior executives, chairs, legal/copyright experts, accessibility specialists, as well as the marketing group). All in all, the face-to-face meetings proved to be the most effective way of resolving issues and making headway in deploying m-learning.

Regular project updates and mobile news, including an m-learning primer and case study descriptions, were summarized in a concise format and presented as an actionable blueprint with guidelines on how to integrate m-learning into the curriculum. One of the chief questions addressed in all communications was "what's in it for me?" and "what are the benefits for students?". While spelling out the benefits and the unique affordances of mobile learning, it is also essential to focus on long-term benefits to the organization and its stakeholders such as student satisfaction and retention. It is equally important to discuss the broad context of the adoption of m-learning, including the necessary infrastructure, procedures and policies that should be thorough, tested, and flexible enough to accommodate the rapid changes in the m-learning scene. That technology debate deserves a separate attention which becomes the focus of the following phase.

Infrastructure and Enterprise Systems
The starting point for this phase is the appraisal of the existing infrastructure in the face of m-learning requirements. This not-so-straightforward task often requires strong support and buy-in from the IT department. It might also lead to the restructuring or updating of the current framework, as it did in the case of the college. The main goal is to ensure a state of technological readiness and an m-learning ecosystem that incorporates at the minimum (1) a system that provides access to m-content, helps create and maintain the content (including the integration with the current LMS), (2) performance and technical support, (3) a mechanism of device procurement and provision (with BYOD being the latest trend), and (4) related procedures, policies and licenses. When building your own institutional apps or even selecting existing apps, a mobile app management (MAM) tool might have to be considered to help with the distribution, update, management, and provision of the apps. In addition, a mobile device management (MDM) system might be helpful with the setup, allocation, monitoring, integrating, and supports for mobile devices deployed across the organization. Most importantly, this phase wouldn't be complete without ensuring a widely accessible wireless connection in classrooms, staff work stations and public areas, an adequate bandwidth capable of supporting mobile applications, as well as availability of the appropriate hardware and software.

Training and Professional Development
Consistent with effective professional development (PD) tactics, training in m-learning pedagogy, instructional design, tools and application should be offered to all interested personnel. Our PD initiatives encompassed f2f tutorials, webinars, materials on the m-learning website, emails pointing to relevant links and resources, as well as presentations at college-wide events. A two-day mobile app boot camp inviting both students and faculty was the highlight of the PD activities. It stressed a need for opportunities to learn about m-learning and examine it through hands-on experimentation.

M-learning Strategy Document
It is imperative to create and document a solid vision that you can communicate to executives, faculty, the IT department, instructional design and development teams or a vendor. The m-strategy document, apart from the core elements mentioned above, has to include the essence of learnings accumulated through the research and evidence gathering activities. In order to establish processes, timelines, and funding options for the institution-wide implementation of the m-strategy, one has to work closely with managers and top executives. This dialogue will not be fruitful if no concrete evidence of the benefits is available and if the decision-makers are not involved early-on in the strategy creation process. Lastly, collaborate with other educational institutions and industry partners to design the optimal solution and plan.

THREE KEY PITFALLS TO AVOID
This article wouldn't be complete without at least signaling the challenges inevitable in the process of adopting m-learning. The top three pitfalls to avoid would be (1) not fully appreciating the need for dedicated m-learning resources and infrastructure, (2) not fully committing to the m-learning objectives but merely following a mobility trend, and (3) not taking the risk of adopting an innovative approach.

CONCLUSIONS
This article offered recommendations regarding a successful creation and uptake of m-learning strategy. Six phases essential to developing a future-oriented m-strategy have been discussed and examples of their application offered. It is a hope of the author that future m-strategies will produce learning that focuses not on grades but experiences, not on content consumption but content creation, not on being taught but on engaging learning that leads to individualized knowledge construction and self-development paths.

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