

Joint University of Texas Mobile Learning Initiative

Introduction:

The Colleges of Liberal Arts, Education, and Fine Arts, along with the Division of Instructional Innovation and Assessment (DIIA), have come together to develop a joint proposal for an initiative to promote and support mobile learning across the three colleges and the University in general. The goal of the collaboration is to leverage the work already done in the area of mobile learning and to combine resources, share lessons learned, and to minimize duplication of efforts.

Justification:

21st century learners differ from their earlier counterparts in significant ways. First, they are accustomed to continuous access to technology and media-rich environments. Second, most are expert in online communications in the form of chats, text messaging, and social networking. 2008 research data¹ indicate that well over 90% of university students own a mobile phone, almost 85% use text messaging on these phones, and over 30% of students access the Internet on their phones. Ownership rises each year and predictions are that mobile web access will become almost ubiquitous within the next few years. Building upon technologies that provide learners with opportunities to engage with content, peers, and instructors via powerful mobile devices that they already own offers fertile ground for creating engaging and transformative learning experiences.

Common Need:

Wireless mobile devices provide a powerful and ubiquitous platform that can be used to solicit information from or provide information to today's students. In the classroom, instructors can poll students using questions prepared in advance or created on the fly in order to gauge student understanding and to pace instruction. This allows an instructor to use real-time response data to decide whether to move on, to review a concept, or to direct students to engage with their neighbors to come to a shared understanding of the question at hand. In this way, such systems can effectively increase student engagement with the content as well as provide opportunities for collaboration with their peers. In addition, the ability for mobile devices to submit full text responses gives them an advantage over many dedicated response systems that can only accept responses to multiple-choice items. At a broader level, instructors could implement an ongoing course assessment process to gather feedback from students throughout the semester. On the delivery side, students could use mobile devices to check their grades, read class announcements, access course materials, view new assignments, and complete course-instructor surveys.

Specific Needs:

The proposal outlined here addresses a broad spectrum of needs across the University. For students in the College of Fine Arts, easy access to rich media content is of particular importance. They benefit greatly from being able to post and access image, audio, and video files on the fly rather than having to wait until they have an opportunity to sit down in front of a computer.

¹ College Students Online: Driving Change in Internet and Mobile Usage. Accessed March 5, 2009 at http://www.emarketer.com/Report.aspx?code=emarketer_2000524.

In the College of Liberal Arts, in-class access to course content and resources has been a major focus for the past decade. Thousands of students across all departments use digital resources designed and produced by faculty with staff support (for example, Francais Interactif, DASE, Texas Politics, and others). Three particular areas of need are the social sciences, foreign language, and classes with large enrollments. Instruction in the social sciences creates unique and unconventional opportunities for the use of polling systems that extend beyond basic feedback, by providing dynamic and interactive demonstrations of social science methods including instrument design, sampling, and other facets of survey data collection. In foreign language instruction, handheld devices provide opportunities for student-created media that can be uploaded to common areas (e.g websites, Blackboard, blogs, wikis) as well as for the distribution of already-existing media resources. In addition, the large number of large classes (100+ students) taught in the College of Liberal Arts makes using handheld devices to gather frequent in-class student feedback an important priority. In these large enrollment courses, most of which are typically introductory, lower-division courses, it is more difficult for instructors to monitor student comprehension. The new generation of mobile devices, like the clickers before them, hold out the potential to make better and more frequent judgments about how well students are keeping pace with class discussion and/or lecture.

For the College of Education, access to course content and communication tools outside of class is a top priority. Students who are interning in K-12 schools, who are members of teacher preparation cohorts that hold class off campus, or who are conducting site-based educational research spend significant amounts of time away from campus, often with limited access to district Wi-Fi networks. The new generation of smartphones provide them with a means to remain in close contact with their instructors and peers, to access information and resources, and to contribute to a variety of collaborative environments even when they are off campus.

DIIA's focus is to support classroom instruction across the University and to leverage its assessment expertise to evaluate learning outcomes and promote best practices. DIIA is not only interested in applications that provide mobile access to student services; it maintains as a top priority the development of applications for mobile devices that facilitate instruction and enhance learning in the classroom. DIIA will consult with its Faculty Advisory Council (20 faculty from all colleges and schools) to help identify needs outside of the college-specific projects outlined in this proposal. In line with its existing model for piloting technologies, DIIA will document and disseminate a report and follow up with workshops and seminars, if applicable.

Existing Projects & Practices:

Students and faculty in the College of Fine Arts frequently engage in the creation and use of audio and video media. Fine Arts has been an especially active user of Apple's Podcast Producer as a tool to facilitate the production and delivery of such media pieces. As an example, Theatre faculty will often arrange directing scenes in a classroom session, record the activity, process it into a podcast, and then distribute it for review and critique by the faculty and students involved. The Art Department engages in similar activities leading to media capture for incorporation into artwork. Music, not surprisingly, generates, distributes, and evaluates musical performances. Podcast Producer allows for an end-to-end workflow beginning with the video capture and ending with a completed media piece, posted for download, and announced via an RSS feed. The system can readily support the creation of media that could be distributed to and displayed on a mobile device.

The College of Liberal Arts has taken a lead role in the Digital Archive Services (DASE) project. DASE applications support the collection, cataloguing and serving of digital media, providing faculty and students with online access to hundreds of thousands of images, video, audio, and other resources. The College of Liberal Arts has a wide array of courses that utilize rich media, and they have supported the development of rich media across the College. Faculty have been recruited that have already started to develop materials and approaches that would be leveraged in the proposed project. The Department of Spanish and Portuguese and the Department of Government have already laid foundations for experimentation with handheld devices. Professor Orlando Kelm has a track record of developing multimedia course materials created by instructors and students - one of several projects underway in his department and also under the auspices of the Texas Language Technology Center (TLTC). Faculty members in the Department of Government have been active developers of several digital instruction resources including Texas Politics, the American Politics Resources website, the Policy Agendas website and tool, and the Latin American Law and Democracy site.

Supported by ITAC Vision Plan funding, the College of Education began piloting mobile applications in the fall of 2006. Initial efforts focused specifically on PDAs, such as PocketPC and Palm devices, and explored the potential use of commercial applications as well as custom applications developed within the College. One effort streamlined the process of collecting fitness data in the field and porting it to a spreadsheet where kinesiology students can undertake analysis. A second effort created a series of PDA-based explorations in fundamental statistics. Current work is exploring the organization and display of primary source documents via both PDAs and smartphones. The College is purchasing a set of 30 iPod Touch devices (funded separately from this initiative) to expand classroom implementation.

The COE also utilizes a suite of tools that support online communication and collaboration. These include university-wide services, such as Blackboard, but they also include a number of open source web applications that are customized for the particular needs of COE faculty and students. These include access-controlled blogs and wikis for classes and research groups, an online system for creating web sites, an electronic portfolio system, and an online video case-based learning tool. All of these tools could be effectively customized for deployment within the mobile environment.

DIIA supports many existing instructional services for students and faculty. Several of these services were supported by past ITAC Vision funds. One such tool, the Ongoing Course Assessment system, which allows faculty to solicit anonymous feedback about their classes from students throughout the semester, could be modified to support submissions from mobile devices. In addition, DIIA supports other student-oriented services such as the eGradebook, Blackboard, Course-Instructor Surveys, and Credit by Exam Petitioning that could be easily modified to enable access via mobile devices.

Deliverables/Outcomes:

At the end of the proposed project, the College of Fine Arts plans to have answers to the following questions about mobile learning for their faculty and students:

- Does rich media delivery to a mobile device improve/increase use of that media?

- Can we support more than one mobile platform using the same media? How does it work on the devices that the students currently have? How do we make it work?
- Do we have enough wireless capacity on campus to support mobile delivery of rich media?
- In a university with limited access to power in campus buildings, can small, power-efficient devices take the place of laptop computers with a much shorter battery life?

The College of Liberal Arts seeks to pilot the use of handhelds devices directly with students and their instructors, and assess the experience. Specific outcomes are as follows:

- Accomplish the development of modules that utilize mobile devices for future use by participating faculty.
- Pilot course redesign efforts that integrate mobile applications, including assessment of student responses and faculty experiences.
- Begin to develop best practices for the use of mobile devices in coursework to guide future use by faculty.
- Provide showcase models for future implementation based on assessment data and best practices, conveyed by faculty presentations in the Liberal Arts Friday Technology Forum.

Under the proposed project, the College of Education would undertake the configuration, testing, pilot, and evaluation of a distinct set of tools that will advance the vision described above by making a number of these services accessible via mobile devices. All of these will be accessed through a portal within a Moodle open-source learning management system that provides the ability to support the multi-class, multi-semester cohort model used in the teacher preparation programs as well as in several programs in Educational Administration. Specific deliverables for the project include:

- A scalable Moodle-based portal providing access to all other resources and configured to support individual classes as well as cohorts in which students take a number of classes together spanning three or more semesters.
- A Moodle add-on that will allow instructors to update and modify their course components via wireless mobile devices.
- Centralized access (via the Moodle) to WordPress blogs configured to be readily viewable and updatable via a variety of mobile devices.
- Centralized access (via the Moodle) to MediaWiki wikis configured to be readily viewed and edited via mobile devices.
- Centralized access (via the Moodle) to Laconica micro-blogging to support rapid communication and collaboration.
- A mechanism by which faculty can send out notifications and reminders via SMS (text) messages.

Each of these services has emerged from expressed interest on the part of faculty members across the college, a number of whom have already agreed to participate in piloting and evaluating the various components of the system.

DIIA is already investigating ways to make existing student services readily available on mobile devices. Working with the three partner colleges and consulting with the DIIA Faculty Advisory Council, DIIA will:

- Benchmark existing mobile applications used at our peer institutions.
- Coordinate focus groups of faculty and students to solicit input.
- Provide needs assessments of potential instructional services to be delivered.
- Modify existing student services to allow usable mobile access to needed information and data.
- Provide best practices for development for mobile devices.
- Evaluate the use in the classroom to determine if mobile devices can be used effectively with the current campus infrastructure.
- Evaluate the effectiveness of the services/tools as it relates to pedagogy.
- Gather information from pilot participants to project direction and needs in the short-term technology horizon.

Budget:

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| 30 iPod Touch devices | \$8,200 |
| Protective case | \$250 |
| Commercial mobile applications | \$500 |
| Student technical staff (Liberal Arts & Fine Arts) | \$2,900 |
| 0.5 FTE GRA (Education) | \$20,600 |
| 0.5 FTE GRA (DIIA) | \$21,000 |
| 0.5 FTE Senior Systems Analyst (DIIA) | \$28,000 |
| TOTAL: | \$81,450 |