



Exploring Mobile Learning: Part One of the mLearning Series

April 2009

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This series of papers on mobile learning is
being co-sponsored by BlackBerry® and
Desire2Learn Incorporated.

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As we become an increasingly mobile society, isn't it time to integrate mobile options into learning and campus life? Some forward thinking institutions are already moving in this direction, but it should be a point of discussion and consideration for all – even in this difficult economic period.

Let's look at why it is important; what mobile learning is today – and can be tomorrow; some specific examples; and considerations to get started.



Why Should We Care?

A recent survey by the Pew Internet & American Life Project predicts that by the year 2020, most people across the world will be using a mobile device as their primary means for connecting to the Internet. Already these devices are becoming indispensable tools in many disciplines, while the line is blurring between the mobile smartphone and the computer most everywhere.

In the new 2009 Horizon Report, mobiles have moved into the “Time-to-Adoption Horizon: One Year or Less” from two to three years timeframe in 2008:

“The unprecedented evolution of mobiles continues to generate great interest. The idea of a single portable device that can make phone calls, take pictures, record audio and video, store data, music, and movies, and interact with the Internet – all of it – has become so interwoven into our lifestyles that it is now surprising to learn that someone does not carry one. As new devices continue to enter the market, new features and new capabilities are appearing at an accelerated pace. One recent feature – the ability to run third-party applications – represents a fundamental change in the way we regard mobiles and opens the door to myriad uses for education, entertainment, productivity, and social interaction.”



“The future is mobile devices that are connected. They are going to be the new paper and pencil.” (Soloway, 2009)

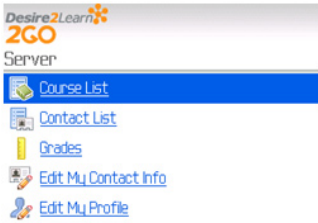
A recent IBM study found that “over half of today’s desktop computer users are willing to trade the PC for a smartphone for Internet use.” They predict that by 2013 the mobile Internet user base will be up 30 percent to 5.8 billion users.

At the Mobile World Congress in February, the 2009 Mobile Youth Report was released. It confirmed the importance of mobiles to youth in that today they spend \$270 billion a year on mobile – 10 times more than the entire global recorded music industry – and that youth are spending more on data and less on voice. In the report, youth are defined as teens (12-17), students (18-22) and young adults (23-27).

But it is not just about the ubiquity of these devices. It is what the experience of always-on access can bring to learning. Elliot Soloway, from the University of Michigan, has been working with mobile devices in K-12 and believes that cell phones are powerful computers that can do just about everything laptops can do at a lower cost. In February 2009, Soloway stated, “The future is mobile devices that are connected. They’re going to be the new paper and pencil.”

In February 2009, the Canadian province of Alberta and Athabasca University announced an important five-year mobile learning initiative. The Minister of Alberta Advanced Education and Technology notes that “Whether in a classroom or at a coffee shop, we want to help more Albertans to pursue post-secondary opportunities that fit their needs.”

Students will likely be using mobile devices when they enter the workforce and need to be prepared with these skills. Mobile devices are already being used in the workplace with excellent results. Referring to a 2007 pilot mobile learning project with three compliance courses, in May 2008, Kristofor Swanson, the global HR mobile strategy lead at Merrill Lynch said, “Using BlackBerry smartphones to deliver learning has been so effective that participants now take their courses in about 45% less time, saving about four to six hours in lost productivity per annum. These employees have also scored higher on competency exams than their colleagues studying in a traditional online format.”



*It is about the learner being mobile and having access **not anytime, anywhere, but all the time, everywhere.***

What is Mobile Learning?

There are a number of definitions of mobile learning including the following from Wikipedia: “Learning that happens across locations, or that takes advantage of learning opportunities offered by portable technologies.”

It is about the learner being mobile and having access not anytime, anywhere, but **all the time, everywhere.**

It is about **user choice**. If they prefer to work on a desktop, they still have that option, but since today’s mobile devices are as powerful as yesterday’s desktop they can choose to work when and where it is convenient. A U.K. student recently referred to his mobile device as a “21st century pencil case full of my digital tools.”

It is not necessarily about eLearning light or a stand-alone offering, but capabilities that should be included in all forms of a student’s campus experience. Mobile access should be an integral part of the campus technical infrastructure.

Who Is Doing What?

Where are mobiles being used today? Some current uses and a few actual examples include:

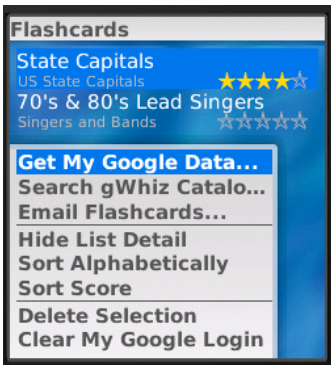
Learning

- Delivery of learning materials, including transcripts, audio or videos of lectures for review
- Self-assessment and quiz aids
- Access to assignments and syllabi
- Creation of user generated content for sharing or later referral

One of the largest current initiatives with smartphones is at Tecnológico de Monterrey in Mexico. In 2008, incoming freshmen (5,500) each received a BlackBerry smartphone. Many applications are being developed by the institution to utilize on campus, in class and to learn on the go. The school is also integrating learning about BlackBerry smartphones and application into their curriculum.

There are a number of other universities in the U.S. and worldwide who have deployed mobile devices to all their incoming freshmen, such as Abilene Christian University. Other campuses have chosen to start with an individual school such as business or medical schools. Since 2004, The Robert H. Smith School of Business at the University of Maryland has distributed BlackBerry smartphones to MBA students. Each year, the Smith School distributes 250 devices to the incoming class of MBA students, as well as almost 600 devices to faculty.

Wilfrid Laurier University has a pilot offering its MBA students the use of a BlackBerry as part of their class curriculum. Other institutions such as The Ohio State University Medical School, Temple University and the University of Michigan also have mobile initiatives.



For general education, foreign languages, medical or law curriculums, flashcard applications are popular with students and easy to develop and share. Whenever there are spare moments it is easy for students to immediately access these tools.

To share with others not present for a presentation or demonstration, free streaming video services open multiple opportunities for user created content. With faster 3G services and unlimited data plans students or faculty can easily capture and share live video feeds.

Productivity

- Campus tours or navigation and resources
- Access to grades
- Registration for classes
- In-class audience response and polling
- Safety tools
- Scheduling and other user productivity tools, including integration with digital pens

Academic learning environments have begun to support mobile initiatives, such as Desire2Learn 2GO. Connecting to online systems anywhere enables students with proper access to view course details and class lists, view and edit

their user data and grade values or sign up for study groups at any time.

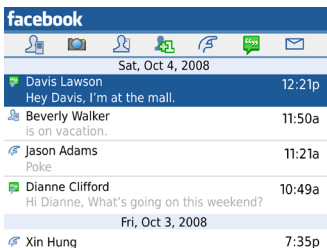
Polls can be conducted within the classroom or at any time using such tools as audience response systems. These work much the same as familiar “clickers” but use Short Message Service (SMS) or web browsers and devices students already have in their pockets. Results show up on a PowerPoint slide or on the web for all to see.

Using a built-in camera or audio recorder, students can easily capture a book cover with a camera for a reminder, or record an important detail to improve productivity, or use a reader to interpret a 2D barcode.

Other innovative uses of mobile devices on campus include access to library information and checkouts, information on the open computers in the labs on campus, or self-paced tours for perspective students and parents.

Collaboration

- Access to faculty and fellow students
- Easy access to coaches, mentors and tutors
- Social networking, such as blogs, Facebook or Twitter



Social networking sites such as Facebook, Flickr or Twitter have mobile applications that in some cases are an improvement upon their desktop versions and readily available at all times. Students are already likely to be using these tools. Why not encourage them for study groups?

Some faculty have already incorporated these tools into their instruction, such as the Financial Accounting professor at the University of Central Florida who periodically tweets (sends a Twitter message) an accounting question to the students. The first to tweet back the correct answer receives extra-credit points.

Epocrates Rx	Select
Topamax	MultiCheck
topiramate	Adult Dosing
(25,50,100,200; 1	Peds Dosing
Blue Cross of C	Black Box Warnings
2; Tier 2; Intern	Contraind/Caut.
	Drug Interactions
migraine propl	Adverse Reactions
[50 mg PO bid]	Safety/Monitoring
Start: 25 mg PO	Pharmacology
mg/day qwk; M	Mfr/Pricing
taper dose gra	Notes
Adult Dosing	Options

Mobile access should be an integral part of the campus technical infrastructure.

Reference

- Access to informational materials including specialty applications, such as in medicine or law
- Campus information
- eBook reader

For reference materials that are readily available, mobile access is a natural. According to Ambient Insight, “All the major education publishers are now selling content in mobile formats and porting new content at an accelerated rate.”

In the future we will see integration of context aware, location-based capabilities, 2D barcodes, commonplace streaming of video, sensors and other always-available capabilities that we have not yet even considered.

How Do We Get Started?

As with other initiatives, don’t try to reinvent the wheel if you don’t have to. There are many mobile projects in North America as well as in Europe and Asia. Also, talk with students about their usage and needs, as well as with other potential partners.

If you have an opportunity to standardize on a single platform it will be much easier than to try to support all the various devices and operating systems. You may find that a carrier is willing to offer you and your students a group option that can be very attractive to students and easier for you to manage. When considering recommended or supported smartphone devices you will want to consider options available to students, battery life, durability, security, development platform and available applications.

Some questions to consider include:

- How could faculty use mobile capabilities to enhance classroom learning?
- What capabilities would be of interest to students and prospective students?
- How can ubiquitous connectivity better enable faculty and student interaction?

In the future, we will see integration of context aware, location-based capabilities, 2D barcodes, commonplace streaming of video, sensors and other always-available capabilities that we have not yet even considered.

- What campus services will help students be more productive or safe?
- What materials are already on hand that could be made easier to access via mobile devices? Does content already exist in another form?
- What network will be used for distribution? What actions or activities will need to be tracked?
- What mobile tools will the student be using upon graduation that they should gain experience with now?
- How will mobile learning integrate with other systems on our campus or does it need to?
- Who will handle any needed user support?
- Are there partners or potential funders for our initiative?
- How will this new opportunity be communicated/marketed?

It is time to start the discussions and to identify a pilot project as the world continues to become more mobile every day and education needs to better prepare students for the new mobile world.

Quasy Mahmoud, director of the Centre for Mobile Education Research (CMER) at the University of Guelph in Ontario, Canada, was quoted in a recent publication, "I think in a few years, faculty will have no choice but to use cell phone technology, so why not be leaders and start now?" That is good advice.

This is the first of a series of mLearning resources. Future topics will include success stories, best practices, available tools and future directions. We'd love to hear about your mobile learning interests and experiences. Please contact info@desire2learn.com to share your experiences and/or to learn more about our mobile learning solutions.

References

2009 Horizon Report. The New Media Consortium. 21 Feb. 2009 <<http://wp.nmc.org/horizon2009/>>.

Ambient Insight US Mobile Learning Market. 6 Jan. 2009. 22 Feb. 2009 <<http://ambientinsight.com/Reports/MobileLearning.aspx>>.

Is the Smartphone the Next PC Device? 24 Oct. 2008. Internetnews.com. 16 Feb. 2009 <<http://www.internetnews.com/mobility/article.php/3780351/Is+the+Smartphone+the+Next+PC+Device.htm>>.

Mobile Learning Planning. 30 June 2008. Judy Brown. 21 Feb. 2009 <<http://www.judybrown.com/docs/mlplanhandout.pdf>>.

Mobile Youth Report. 16 Feb. 2009. 21 Feb. 2009 <<http://www.mobileyouth.org/report/>>.

New research program takes classroom anywhere, anytime. 20 Feb. 2009. 21 Feb. 2009 <<http://alberta.ca/home/NewsFrame.cfm?ReleaseID=/acn/200902/2535194421966-F35C-2728-738763D8E6219A83.html>>.

Pew Internet: Future of the Internet. Pew Internet & American Life Project. 14 Dec. 2008. 21 Feb. 2009 <http://www.pewinternet.org/PPF/r/270/report_display.asp>.

Press release. *Intuition and Merrill Lynch Recognized for Mobile Learning Innovation.* 29 May 2008. 16 Feb. 2009 <<http://www.przoom.com/news/34917/>>.

Project uses cell phones as computers in the classroom. 9 Feb. 2009. University of Michigan. 16 Feb. 2009 <<http://www.ns.umich.edu/htdocs/releases/story.php?id=6976>>.

Shinn, Sharon. *Dial M for Mobile.* Dial M for Mobile. 24 Feb. 2009. 12 Mar. 2009 <<http://www.aacsb.edu/publications/Archives/JanFeb09/32-39%20Dial%20M.pdf>>.

Technology Used In ACG 2021. 2 Mar. 2009 <<http://financialaccounting.wikispaces.com/ACG2021Tools>>.

About the Author

Judy Brown is a Mobile Education Technology Consultant who retired as the Emerging Technology Analyst in the Office of Learning and Information Technology (OLIT) at the University of Wisconsin System Administration in 2006. She has been involved in technology for learning for over 25 years and with mobile learning since 1996. Judy now concentrates exclusively on mobile learning and coordinates the mlearnopedia.com site and facilitates the cc.mlearnopedia.com content community.

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