Mobile learning

Matthew X. Curinga

Dino Sossi

**Educational Technology 0858-612**

**Course description.** Most of the world connects to the Internet from mobile phones. Android tablets and iPads are filtering into schools — and the hands of children. Students carry significant computing power in their pockets. This course considers how mobile computing forces us to reconsider the time and place of learning.

**Keywords:** mlearning, mobile learning, android, ipad, tablet computing, one-to-one computing, 1:1, olpc

**Previous Course website:** <http://mlearnau.tumblr.com>

 1951, Dick Tracy’s wearable computer

As mobile networks become faster and more ubiquitous, devices more powerful, and the Internet spreading to all corners of the world, mobile computing is becoming one of the main channels for teaching and learning. In this course, students will learn about mobile computing in schools, from 1:1 laptop programs to handheld computers. They will also look at how mobile computing supports learning outside of schools, both in K-12, higher ed, and informal settings.

## Goals & objectives

Students taking this course will develop an understanding of the ways that mobile technologies can be used for teaching and learning. They will also consider the impact of mobile computing on the field of education as a whole.

Students will:

* understand basic underlying mobile technologies, and their educational implications
  + network types and capacity
  + hardware speed, capabilities, and energy requirements
  + screen and display technologies
  + software development platform, including Web, SMS, and local “Apps”
  + GIS and location services, and how they can be used to augment learning
* understand the specific strengths and constraints of mobile interactivity & design
* implement best-practices of teaching with wireless mobile technology
* reflect on how mobile computing challenges the traditional time and places of learning

## Course expectations

* no lawyering
* considerate posts
* consistently excellent work

We are going to use the social blogging software/website [Tumblr](http://www.tumblr.com) as our main course website this semester. Here are the basics of how we will use it:

* assignments, writing prompts, and other useful information will be posted at [mLearn AU](http://mlearnau.tumblr.com) &oumdash; the main course website
* each class member will have their own Tumblr
  + you do not have to use your own name or personally identifying information – we will know who you are
  + you must “follow” mlearnau and all of the other members of the class
* you must check Tumblr at least once a day
* **post once, comment twice**, this will be the main online interaction for the course
  + every week you are required to post a **~500 word** [reading response](#reading-responses), by the **end of day on Sunday (e.g. midnight)**
  + for your reading response
    - refer closely to the reading
    - you *must* use the tags #reading response #sessionXX where XX refers to the class session/week
  + comments due by **end of day on Wednesday (e.g. midnight)**
* you should try to read/post using your mobile phone and other mobile devices; some work, though, is better suited to using larger computers
* other than reading responses, you should use your blog to post links, quotes, jokes, and other mLearning related resources
* for questions about the course and support:
  + post a question on your blog, you never know who may help you out
  + for “official” support, post your question to the course site: <http://mlearnau.tumblr.com/ask> or contact the instructor

## Weekly topics

*Readings, prompts for posts, and other assignments are available on the course website’s post for the week.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| week | date | topic | reading | assignment due |
| 1 | 11/3/13 | Going mobile | Weiser, Traxler | (Reading Response #1) |
| 2 | 11/10/13 | Situated cognition & embodiment | Brown, Wenger, Naismith (2009, Billings | mobile blog (Response #2) |
| 3 | 11/17/13 | Constructionism and 1:1 computing | Papert, Penuel, OLPC, Negroponte | Where I’m From poem (Response #3) |
| 4 | 11/24/13 | Supporting the classroom | Pasnik, Wishart, Chaiprasurt | tech report (Response #4) |
| 5 | 12/1/13 | Mobile tech/political dissent | Castells, Mirzoeff, Morozov, Doctorow | mobile video interview (Response #5) |
| 6 | 12/8/13 | Mobile games for learning | Facer, Squire (2010) | podcast (Response #6) |
| 7 | 12/15/13 | Tablets & ereaders | Hillesund, Hu | (Response #7) |
| 8 | 1/5/14 | Apps4Ed | Mayer, Ritter | app Review (Response #8) |
| 9 | 1/12/14 | Mobile interfaces & design/ | Nielsen, van der Merwe, Apple Inc. | Final Project (Response #9) |
|  |  | Final Projects |  |  |

Note: Reading response posts are due every Sunday at midnight and your 2 comments on your classmates’ response posts are due every Wednesday at midnight.

## Assignments & grading

|  |  |
| --- | --- |
| Assignment | pct |
| Reading response posts | 20% |
| Mobile blog | 10% |
| Where I’m from poem | 10% |
| Tech report | 10% |
| Mobile video interview | 10% |
| App Review | 10% |
| Podcast | 10% |
| Final Project/Paper | 20% |

Grades for assignments will be posted on the offical Moodle course website.

### Reading Responses

Every week you will be asked to post a *reading response* on your Tumblr. This is the main online interaction for this course. Your reading response should be approximately 500 words, but occasionally may call for more or less.

A good reading response:

1. refers to the readings and other online activities (like video or mobile assignments) due that week,
2. is not a *summary*, you should have a point of view and express your own synthesis, understanding, and opinion about the topic under discussion,
3. sometimes will relate to courses you are taking now, your work, or your personal life,
4. sometimes will relate to other things you have read or studied (this is okay, just give us a little bit of reference and a way to find more information),
5. is not a formal, academic post (you don’t need APA style references),
6. *is* intended for this course and your classmates so it should be **professional** in substance and tone, and
7. **is posted before the end of day on Sunday (e.g. midnight), every week**

In addition to your own response, you should check Tumblr and Disqus every day. You are required to comment on at least two of your peer’s responses each week. Usually you will want to respond to people who engage with you.

There are a total of 9 responses due for this course. You will get either 2, 1, or 0 points for your post. Late responses will be accepted (but highly discouraged) up until midnight Wednesday. If you post on time every week, you will get an extra 2 points for the Reading Response assignment.

### Mobile Blog

* every student needs one on Tumblr
* post link to Celly
* set up comments
* make at least one post that has an image and text
* write at least one post from your phone
* test the site on a desktop computer and a mobile phone (needs to look good on both)

Evaluation criteria:

* looks good
* readability/usability
* organization

### Where I’m from

Using your mobile device, create a *multimedia poem*, “Where I’m from”, describing where you are from. The poem will consist of your written text and at least 5 images that you record with your phone (or tablet).

### Tech Report

Working in groups, students will present a “Tech Report” on an aspect of mobile technology. Groups will prepare 7-8 slides for a slidecast which they will post on their blog (teammates will link to/cross-post it). They will also post an annotated list of resources (e.g. websites, press, and scholarly articles) related to their topic. Annotations should only be a few sentences.

Example topics:

* wireless networks
* near field communications (NFC)
* device hardware
* GIS/GPS & location
* iOS and Android Platforms
* mobile media (video, audio, animations, web/html/css, etc.)
* speech recognition, text-to-speech, voice interfaces
* facial recognition & computer vision
* mobile computing and assistive technology
* wireless/mobile security

### Mobile Video Interview

Video-capable phones and tablets have made it very easy to record video. For this assignment you are going to shoot a 5 minute video (keep it within 30 seconds of 5 minutes). In the video you will interview somebody (at least one person, more than one if you choose to go that way). The **theme** for the interview is: *The effect of mobile computing on our society.* You should write your interview questions beforehand, but also feel free to improvise during the interview. Some interviewers edit out their own voice and questions (more of a documentary style), others leave them in (more conversational). This is entirely up to you. While you are encouraged to work with other students on the this project, everyone must individually upload their own interview.

Videos will be evaluated on the following scale:

* Editing (2 points): You need to edit it enough so that it is smooth (e.g. no dead time, gaps or repeated questions, etc.) and fits into the 5 minute time frame. Any additional features are bonus.
* Questions (4 points): Do your questions elicit interesting response from the speaker? Are they thoughtful?
* Appeal (2 points): Was the video entertaining? Would you watch another video again by this producer? Did it maintain your interest throughout?
* Production (2 points): Could you hear the audio? Was there enough light to see what was going on? Was the camera steady, if meant to be steady? Shaky if meant to be shaky? Did you keep the subject in frame? We’re not looking for an award-winning film, but we do want something doesn’t make us strain or feel queasy.

\*\*\*\*\* SESSIONS 5 & 7? \*\*\*\*\*

### Podcasts

Podcasts show up in much of the recent literature on mobile learning as an easy way for teachers to communicate to their students and families and as a way for learners to express their ideas. During this semester, you will create a podcast — an audio recording that you will upload to your Tumblr. The podcast is due for session 8. If you choose to work as part of a team on these topics (which is encouraged but not required), you can submit a group podcast (where everyone in the group speaks). Group podcasts will receive the same grade, one grade for the group. Alternatively, you can work individually. Whether you work individually or as part of a team, upload individual podcasts. When you upload your individual podcast, identify your team members so we know who they are and that you have produced the same content.

Your podcast must be between 8-10 minutes in length. You can record it on a mobile device but are not required to. I usually use a laptop computer, USB headset, and [Audacity](http://audacity.sourceforge.net/) for my audio recordings. The target audience for this podcast is members of our class. You should assume a base level of subject matter understanding of both mobile technology and mobile learning. Do not assume more than a general understanding of your topic (e.g. if your topic is specialized). It is strongly advised that you write a script and practice before creating your final recording.

Save your recording as an mp3 and upload it to your tumblr as an audio post.

This podcast assignment is worth 10 points total, allotted according to the following scale:

* Content (4 points): Is the content *important*? Is the listener likely to learn *new information* from this recording?
* Appeal (2 points): Is the podcast enjoyable and engaging? Would you like to listen to another recording by the same host/group? Consider how things like pace, humor, voice inflection, etc. contribute to the appeal of your podcast.
* Organization (2 points): Is the podcast easy to follow? Does it build in tension and details? Are there important questions left unanswered? Is irrelevant information included? Does the host properly introduce and summarize the topic?
* Clarity (2 points): Make sure that recording is loud enough to hear easily, that you speak clearly, etc. Practice enough that you avoid “um” and “like”, either edit out slacktime (dead air) or re-record your podcast so that it is tight.

*You will lose 2 points for not uploading your podcasts on time (e.g. Sunday at midnight).* You will receive zero points for this assignment if it’s more than 1 day late (e.g. Monday at midnight).

### Educational App Review

“Apps” are down-loadable applications that run locally on a phone or tablet. You will write a review of a mobile app from an educational perspective. Your review should be 500-800 words long. It should include the following elements:

1. Introduction
2. Description
   * how it works
   * the intended audience
   * who publishes it
   * supporting screenshots or video
   * any other relevant information
3. Review the design
   * does it follow good design principles?
   * are there any obvious limitations?
   * does it support Universal Design, accessibility, and Universal Design for Learning (UDL)?
4. Discuss the educational value
   * how is it/could it be used for learning?
   * what would someone learn from using this app?
   * what implicit/explicit theories of learning does it embody?
     + refer to concepts from the readings: communities of practice, situated cognition, constructionism, cognitive apprenticeship, etc.
   * how does it compare to other mlearning technologies you are familiar with? again, refer to the readings and your own self-selected research
5. Conclusion

Use the tag [#app-review](http://tumblr.com/tagged/app-review)

### Final project

*Choose one type of project as your final project. Projects can be completed individually or in teams.*

**Mobile learning unit**

You will design a mobile learning unit. Specify your target audience and setting (museum, K-12, corporate training, online/informal). Explain the technology you will use in terms of learning goals and pedagogy; explaining why mobile technologies are a good match for your instructional design.

*Deliverables:*

1. Unit description
2. Learning goals
3. Lesson plans (3-5 different lessons). Lesson plans should include:
   1. materials needed for the lesson
   2. technology requirements
   3. procedures (i.e. if there’s a teacher, what does the teacher do? if it’s self-paced, what do the students do?)
   4. assessment/evaluation: how does the learner know that he or she has mastered the material?
4. Materials: any materials needed to complete the lesson

**App for learning design document**

Identify learning goals and design an app to help teach them. Consider how/when the app will be used and what technologies it will need (and if they are feasible). You will turn in a complete design for the app that includes:

1. Overview
2. “User stories” (short, 2-3 sentence narrative descriptions) illustrating how your app would be used
3. Mock-ups/sketches of user interface screens
4. Diagrams showing different information flows
5. Technology report indicating the necessary technologies and considerations for implementing your app
6. A test report, from at least one test session, where you ask potential users (a.k.a. friends or family) to try out your app – even if they are just trying out pen and paper prototypes, you can still get useful feedback
7. (optional) Any digital prototypes, artwork/design, etc.

**Mobile learning literature review**

A scholarly literature review offers a complete picture of the current published research on a topic. A *good* literature review is not just a summary of work done; it has its own thesis and synthesizes the existing body of research to formulate new hypotheses, point out discrepancies, and shed more light on the field of study, etc.

If you choose to write a literature review, you should expect to write a 15-25 page paper in APA format. In this field, you will probably need to analyze 15-20 different academic papers and reports to create your review. While the topic of the review is up to you, you should choose a narrow focus (e.g. touch interfaces with children) rather than a general focus (e.g. mobile learning as a field).

**Original research**

Rather than reviewing the existing literature (above), you may choose to conduct your own research. To do this for your Final project, you will conceive of, and execute, your own research study. You will turn in a report as your final project. For your report, you should follow the standard research paper format: introduction, astatement of hypothesis, review of previous work, methods, results/analysis, and conclusions.

You can research a topic of your choice, but to give you a sense consider these possible research topics/titles:

* Comprehension of physics concepts after adolescent learners play Angry Birds
* Mobile phone use in study collaboration among U.S. undergraduate students
* An ethnographic case study of middle school students using e-textbooks

**(unofficial) fieldwork**

If you would like to work with students using mobile devices, please discuss your project idea with the instructor. There may be some schools in Brooklyn and/or Long Island we can work with, either during the school day or after school. You could possibly teach a lesson and write up a report (or create a video portfolio) or do a series of observations, etc.

**Reflective journal**

Finally, you can write a reflective journal regarding your personal experiences with mobile learning during this course. Due to the fact that mobile learning can occur informally, this journal can include both your formal reflections about this course or any other ones you may be taking that include a mobile learning component as well as any informal, out-of-school learning that may occur. This should be a regular weekly journal. Each week should include 250-500 words of writing for that week (e.g. it may be one long reflection or a couple of shorter ones for that week). The final journal should have a least 10 entries for this ten week course (e.g. at least one entry per week). It should be approximately 2,500 to 5,000 words in length (e.g. 10-20 double-spaced pages).

## Course Readings & Bibliography

Ally, M. (Ed.). (2009). [*Mobile learning transforming the delivery of education and training*](http://www.aupress.ca/index.php/books/120155). Edmonton, AB: AU Press. ISBN 978-1-897425-44-2

Apple, Inc. (2012). [iOS human interface guidelines: Introduction.](http://developer.apple.com/library/ios/#documentation/UserExperience/Conceptual/MobileHIG/Introduction/Introduction.html).

Billings, S. (2011, January 4). [What can the iPad do for museums?](http://www.museumnext.org/2010/blog/what-can-the-ipad-do-for-museums) Museum Next.

Brown, J. S., Collins, A., & Duguid, P. (1989). [Situated cognition and the culture of learning.](http://people.ucsc.edu/~gwells/Files/Courses_Folder/ED%20261%20Papers/Situated%20Cognition.pdf) Educational Researcher, *18*(*1*), 32-42.

Carr, D. (2010, January 1). Why Twitter will endure. *The New York Times*.

Castells, M. (2007). [Communication, power and counter-power in the network society.](http://ijoc.org/ojs/index.php/ijoc/article/download/46/35) *International Journal of Communication*, *1*(1), 238–266.

Castells, M., Fernandez-Ardevol, M., LinchuanQiu, J., & Sey, A. (2006). *Mobile communication and society: A global perspective.* Cambridge, MA: The MIT Press.

Chaiprasurt, C., Esichaikul, V., & Wishart, J. (2011). [Designing mobile communication tools: A framework to enhance motivation in online learning environments.](http://mlearn.bnu.edu.cn/source/ten_outstanding_papers/Designing%20Mobile%20Communication%20Tools%20A%20Framework%20to%20Enhance%20Motivation%20in%20Online%20Learning%20Environment.pdf) Presented at *mLearn 2011*, Beijing, China.

De Jong, T., Specht, M., & Koper, R. (2008). A reference model for mobile social software for learning. *International Journal of Continuing Engineering Education and Life Long Learning*, *18*(1), 118–138.

Doctorow, C. (2011, May 2). [Techno-optimism.](http://www.locusmag.com/Perspectives/2011/05/cory-doctorow-techno-optimism/). *LOCUS online.*

Dourish, P. (2004). *Where the action is: The foundations of embodied interaction.* (New edition.). Cambridge, MA: The MIT Press.

Dunleavy, M., Dexter, S., & Heinecke, W. (2007). What added value does a 1:1 student to laptop ratio bring to technology-supported teaching and learning? *Journal of Computer Assisted Learning*, *23*(5), 440-452.

Evans, C. (2008). The effectiveness of m-learning in the form of podcast revision lectures in higher education. *Computers & Education*, *50*(2), 491-498.

Facer, K., Joiner, R., Stanton, D., Reid, J., Hull, R., & Kirk, D. (2004). Savannah: Mobile gaming and learning? *Journal of Computer Assisted Learning*, *20*(6), 399–409.

Fernandez, V., Simo, P., & Sallan, J. M. (2009). Podcasting: A new technological tool to facilitate good practice in higher education. *Computers & Education*, *53*(2), 385-392.

Hillesund, T. (2010). [Digital reading spaces: How expert readers handle books, the Web and electronic paper.](http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/viewArticle/2762/2504) *First Monday*, *15*(4).

Hu, W. (2011, January 4). [Math that moves: Schools embrace the iPad.](http://www.nytimes.com/2011/01/05/education/05tablets.html?pagewanted=all). *The New York Times*.

Kay, R. H., & LeSage, A. (2009). Examining the benefits and challenges of using audience response systems: A review of the literature. *Computers & Education*, *53*(3), 819-827.

Kloos, M. (n.d.). [Communities of practice 2.0.](http://www.martinkloos.nl/thesis-M.Kloos.pdf)

Mayer, R. E. (2007). Five features of effective multimedia messages: An evidence-based approach. In S. M. Fiore & E. Salas (Eds.), *Toward a science of distributed learning*. (pp. 171–184). Washington, DC: American Psychological Association. [moodle](https://moodle.adelphi.edu/file.php/49382/mayer-2003-multimedia-methods.pdf)

Mirzoeff, N. (2011, January 31). [Networked visuality: The revolution in North Africa.](http://nicholasmirzoeff.com/RTL/?p=32) *For the Right to Look.*

Morozov, E. (2009). Iran: Downside to the “Twitter revolution.” *Dissent*, *56*(4), 10-14. doi:10.1353/dss.0.0092

Morozov, E. (2011). [The Internet in society: Empowering or censoring citizens?](http://youtu.be/Uk8x3V-sUgU)[video]. RSA Animate.

Motiwalla, L. F. (2007). Mobile learning: A framework and evaluation. *Computers & Education*, *49*(3), 581–596.

Naismith, L., Lonsdale, P., Vavoula, G., & Sharples, M. (2004). [Literature review in mobile technologies and learning.](http://archive.futurelab.org.uk/resources/documents/lit_reviews/Mobile_Review.pdf) *FutureLab Report*, *11*.

Naismith, L., & Smith, M. P. (2009). [Using mobile technologies for multimedia tours in a traditional museum setting.](http://www.aupress.ca/books/120155/ebook/12_Mohamed_Ally_2009-Article12.pdf) In M. Ally (Ed.), *Mobile learning transforming the delivery of education and training* (pp. 247-264). Edmonton: AU Press.

Negroponte, N. (2012, February) [Learning by themselves.](http://youtu.be/CNRaM2GgQuA) [Video of a lecture presented at the *Solve for X forum*]

Nielsen, J. (2011, May 23). [iPad usability: Year one.](http://www.useit.com/alertbox/ipad.html). *Jakob Nielsen’s Alertbox*.

[One Laptop per Child.](http://en.wikipedia.org/wiki/One_Laptop_per_Child) (2013). *Wikipedia*.

Papert, S., & Harel, I. (1991). [Situating constructionism.](http://www.papert.org/articles/SituatingConstructionism.html) *Constructionism* (pp. 1–11). Norwood, N.J.: Ablex Pub. Corp.

Pasnik, S. (2007). [iPod in education: The potential for teaching and learning.](http://cct.edc.org/sites/cct.edc.org/files/publications/iPod_in_Education_Whitepaper.pdf) [White paper]. *edcommunity.apple.com.*

Penuel, W. R. (2006). [Implementation and effects of one-to-one computing initiatives: A research synthesis.](http://jhauge.tie.wikispaces.net/file/view/ISTE.pdf) *Journal of Research on Technology in Education*, *38*(3), 329.

Pyke, S. M. (2010). An initiative in introducing iPads to higher education. *ERGA Conference (5th: 2010: Adelaide, Australia)*.

Rheingold, H. (2002). *Smart mobs: The next social revolution.* Cambridge MA: Basic Books. ISBN 0738208612, 9780738208619

Ritter, S., Anderson, J., Koedinger, K., & Corbett, A. (2007). [Cognitive tutor: Applied research in mathematics education.](http://pact.cs.cmu.edu/pubs/Ritter%20Anderson%20Koedinger%20Corbett%202007.pdf) *Psychonomic Bulletin & Review*, *14*(2), 249–255.

Rosenbaum, E., Klopfer, E., & Perry, J. (2006). On location learning: Authentic applied science with networked augmented realities. *Journal of Science Education and Technology*, *16*(1), 31-45.

Ryu, H., & Parsons, D. (Eds.). (2008). *Innovative mobile learning: Techniques and technologies.* (1st ed.). Hershey, PA: Information Science Reference. ISBN 1605660620

Sen, A. (2010). [The mobile and the world.](http://itidjournal.org/itid/article/view/614/254) *Information Technologies & International Development*, *6*(Special Edition).

Sharples, M., Taylor, J., & Vavoula, G. (2005). [Towards a theory of mobile learning.](http://www.lsri.nottingham.ac.uk/msh/Papers/Towards%20a%20theory%20of%20mobile%20learning.pdf) *Proceedings of mLearn 2005*.

Squire, K. (2010). From information to experience: Place-based augmented reality games as a model for learning in a globally networked society. *Teachers College Record*, *112*(10), 2565–2602.

Squire, K. D., & Jan, M. (2007). Mad City mystery: Developing scientific argumentation skills with a place-based augmented reality game on handheld computers. *Journal of Science Education and Technology*, *16*(1), 5-29.

Traxler, J. (2009). [Current state of mobile learning.](http://www.aupress.ca/books/120155/ebook/01_Mohamed_Ally_2009-Article1.pdf) In M. Ally (Ed.), *Mobile learning transforming the delivery of education and training* (pp. 9–24). Edmonton, AB: AU Press.

van der Merwe, R. (2012, March 12). [A dad’s plea to developers of iPad apps for children.](http://uxdesign.smashingmagazine.com/2012/03/12/dads-plea-developers-ipad-apps-children/). *Smashing Magazine*.

Weiser, M. (1991). [The computer for the *21st* century.](http://www.ubiq.com/hypertext/weiser/SciAmDraft3.html) *Scientific American*, *265*(3), 94–104.

Wenger, E. (2006, June). [Communities of practice: A brief introduction.](http://www.ewenger.com/theory/)

Wishart, J. (2009). [Use of mobile technology for teacher training.](http://www.aupress.ca/books/120155/ebook/13_Mohamed_Ally_2009-Article13.pdf) In M. Ally (Ed.), *Mobile learning transforming the delivery of education and training* (pp. 265–278). Edmonton, AB: AU Press.