



## Using Mobile Technology to Enhance Education

JEFF HOCHSTRASSER

Please forgive me for stating up front something that has become obvious to most all of us; the Internet is the fastest growing medium in the history of the world (Arens, Schaefer & Weigold, 2009). It is also one of the most disruptive (Brower & Christensen, 1995). The ability to access the Web and its many resources have also developed over the years by transitioning from desktop computers to more portable laptop models and now the popular hand-held mobile devices. In fact, smartphones and tablets are now pervasive in our culture, especially with the younger, college-aged demographic that we interact with on this campus. The devices provide them with easier and more convenient access to information, education, communication, and collaboration with the opportunity to enhance their learning experiences. They truly are digital natives, having grown up in the interactive age where digital technology is a way of life. Most of them cannot remember a time that they didn't have access to the Internet.

I was fortunate to come from the advertising and media industries where technology is a part of what I

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did professionally. I am also part of the Communication Department where I teach media strategy and planning, which is involved with the ever-changing environment of social media and technology. I try very hard to keep up with the latest and greatest developments in that area. In spite of this, I believe I am still part of the generation known in some circles as digital immigrants. It was because of my involvement with this present generation and their involvement with mobile technology and its potential for enhanced learning that I chose to concentrate my professional practices and doctoral dissertation on this area. In Ether 12:27, we read:

And if men come unto me I will show them their weakness. I give unto men weakness that they may be humble; and my grace is sufficient for all men that humble themselves before me; for if they humble themselves before me, and have faith in me, then will I make weak things become strong unto them.

It was my desire to have those areas I felt somewhat weak in, namely the Web and its many resources, to become strong unto me. This, I felt would allow me to use that knowledge and those resources to enhance my teaching to the digital natives we have come to know as the Millennials.

Ownership of these devices among the current generation of college students is almost ubiquitous. A recent Pew Center study found that smartphone ownership among the 18–24 year olds was at 79% with tablet ownership at 33%. The figures for the 25–34 year old group are slightly higher (Smith, 2013). With so much ease and access to the Internet and all of the resources it makes available, I wondered if and how these mobile devices were being used by students to enhance their learning

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experiences. Equipped with the answer to this question, we, as educators, can potentially tap into these same mobile tools to assist students in their quest for knowledge.

There are a good number of existing studies that explore this type of mobile learning, which is also known as “m-learning.” These mobile devices transcend the boundaries of the traditional classrooms and lecture halls, allowing for worldwide learning (El-Hussein & Cronje, 2010). Because of their size, ease of use, portability, and ability to access the Internet, one can see a future where mobile learning becomes one of the most effective ways of delivering instruction. In fact, Herrington (2010) states that “the proliferation of mobile devices has proceeded throughout society at such a higher rate that education can no longer avoid exploring the educational potential of these tools” (p. 425). This call for exploration is what my dissertation was all about.

As a means of discovery, there were three main questions concerning mobile learning that I felt needed investigation:

- What are the living experiences of students who currently use mobile devices to enhance their learning?
- What resources are students reaching out to and connecting with to obtain the information they may be seeking?
- “How can mobile technologies be best utilized in teaching and learning strategies to enhance learning and support characteristics of the digital native generation, while at the same time addressing the diversity of all students?” (Koszalka & Ntloedibe-Kuswani, 2010).

During the Fall Semester 2013, I conducted a multiphase, mixed-method study among groups of undergraduate students in three different communication courses in an attempt to answer, in part, these questions.

The first part of the research involved a qualitative, phenomenological approach. Using a snowball sampling approach known as “network sampling,” five undergraduate students were interviewed concerning their use of mobile devices for educational purposes. Students were asked open-ended questions and allowed to give responses of any length they felt to be sufficient. Following qualitative analysis procedures, each interview was transcribed and coded for main themes, then converted into individual text descriptions. A member check was performed by participants, allowing them at that point to make any changes or additions they felt necessary. A peer debriefing on the whole process also took place. A composite textual description from all five interviews was then developed. Though not included in this article, anyone interested can obtain a copy of that description by simply requesting one from me via email (hochstrasserj@byui.edu).

Here, in brief, are some findings gleaned from those interviews, not listed in order of importance:

- Students favor mobile technology because of its portability and convenience in usage, with the smartphone being the most popular device used for education.
- Each student can cite a time when mobile technology has saved them on an assignment or at least made an assignment easier to complete.
- The most popular functions or uses of mobile devices for educational purposes were facilitating communication and collaboration among students, taking notes, and organizing. Social media is one means being utilized for educational purposes by the students (100%), primarily to communicate and collaborate.
- Mobile devices are also being used to take notes in class with the Evernote application most

frequently mentioned for that purpose because of its versatility and search capabilities.

- Google Drive was the most popular application for work on group projects because it utilizes the Cloud and the ability to work on projects in real time. Google Docs and Google Hangout were also mentioned for the purpose of collaboration.
- Google was mentioned as the first source for research, but students also rely upon company and institutional websites. Wikipedia and news sources such as CNN, NPR, BuzzFeed and Flipboard were also popular sources of information utilized by these students. You might be pleased to note that Google Scholar was also mentioned as a means of looking up more credible sources of information.
- Text messaging was identified as the preferred method of communication with messages via email coming in second. Twitter was also mentioned as a means of facilitating communication among students.
- The interviewees unanimously agreed that instructors should utilize more technology, especially since all of the students use mobile devices constantly anyway. They acknowledged that some students may misuse mobile devices in the classroom, but felt that the advantages to having them there outweigh the potential negatives.
- All five students interviewed were unanimous in their belief that instructor-generated text reminders could positively benefit student learning and course performance. They welcomed the idea.

As a result of this last finding, I also conducted a quantitative study that explored the potential benefits of instructor-generated text reminders to students concerning assignment due dates and examination openings and closings. The purpose was to test whether such text message reminders could be a means of course and grade improvement as perceived by the participating students. To explore this question, text message reminders were sent for one complete semester (Fall, 2013) to voluntary participants in three of my communication classes, one at the 200 level and two at the 300 level. A free program and application called Remind (formerly known as Remind 101) was utilized,

which allowed me to generate the text reminders while keeping both student cell phone numbers and my own number private. The total combined number of text messages sent during that semester was 53 with an average of 17.7 per class.

Of the 69 students invited to receive these text message reminders, 50 (72.4%) chose to participate. Of those who participated, 79% believed that receiving instructor-generated text reminders helped them be more successful in the course and improved their grades with 87% indicating they would participate in Remind 101 (Remind.com) if offered the chance again. Primarily, those who were positive about the program found it helpful to be reminded about assignments and exams and helpful in assisting them to be better organized. Three of the comments I note here were typical of the students who participated in the study: “Loved it. Wished each class did it.” “I wish my other professors did the same.” “It’s helpful and I believe what the future of academics looks like.”

Obviously, there are some limitations to these studies, and how they can be generalized, but helpful information was obtained. I am also unable in this article to share the complete details of procedures involved and all the comments students shared. I am also not able to touch on the proposed learning theory for our digital age known as Connectivism, which is an important concept (Siemens, 2005). It is evident to me however, from the results, that students would welcome additional involvement from our faculty members, as it relates to the use of mobile devices, to enhance their educational experiences and learning.

In conclusion, here are some recommendations to my fellow faculty members who have hesitated incorporating mobile technology as a teaching and learning aid:

- Become familiar with mobile devices such as smartphones and tablets and the tremendous educational resources they can access. It’s a mistake to think you must master the technology before giving students access to it.
- Explore the education, communication, and collaborative applications available and share your knowledge with the students. More importantly, learn from your students. New applications and technologies are ongoing. This is a continuous learning process.

- Consider ways of incorporating the use of mobile technology in your classroom setting. The students want it and are using it. Why not reach them through means they are already utilizing? It can be used to supplement whatever you are currently doing. Obviously, there will be distractions and misuse of these devices by some, but the advantages offset the potential negatives. At minimum, let students take notes using their devices.
- Become a facilitator, guide and resource to your students. Since they are already reaching out on the Web and connecting with various sources of information, why not provide them with more credible sources recognized within your particular discipline? Also, teach them how to filter and process that information.
- Encourage your students to collaborate with their mobile devices using among others, Google Drive, Google Docs and Google Hangout.
- Because texting is their preferred way to communicate, consider using a text management system such as Remind.com. Remember, however, to keep the text reminders short in content, consistent in timing, and used sparingly. These text practices will ensure greater success and acceptance from your students.
- Once you decide on a mobile device policy, be sure and disclose it in your course syllabus, explaining when and how they are allowed to use them. I have been allowing the use of mobile devices in my classes as long as they help contribute to the conversation and not become a distraction. So far it has been great, especially when students quickly find information and share it as part of the discussion.

I tip my hat to those of you who are currently utilizing mobile devices in your classrooms in very creative ways. I know the students appreciate it. As for the rest, we naturally want to provide the best education possible for current and future students. Changes should therefore be made to our current practices and policies. We must become more familiar with current technology and the associated web-based applications. At a minimum, we need to consider the ways mobile devices can be used to supplement our current

practices, thereby taking advantage of the potential benefits they offer. Doing so can truly enhance both teaching and learning in higher education. ❀

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