Preface

You can take this prediction to the bank: Within five years, each and every K12 student, in each and every grade, in each and every school in the United States will be using a mobile learning device, 24/7 (Norris & Soloway, 2010).

This audacious prediction, from an article in 2010, hints at the promise and potential of educational technology to transform education. Such a statement, if it had been made ten years prior, would have seemed absurd. At the turn of the century, the cell phone had just barely passed the 100 million mark. But over the next decade, usage tripled. In a recent study of mobile technology, the Pew Foundation found that, as of May, 2013, 91% of American adults had cell phones, with 56% of American adults having smartphones. This means that the majority of Americans can now connect to the Internet at any time (Pew Research Center, 2013). Worldwide, there are five billion cell phones, with over a billion smart phones (GO-Gulf.com, 2012). With over seven billion people in the world, it means that approximately five in seven people in the world have a cell phone, and approximately one in seven have smart phones. This number will continue to grow, allowing more and more people to have access to the information on the Internet.

Although it seems as if they have been around forever, it was only in 2007 that the first iPad was introduced. This was followed by a flood of similar mobile devices. The Pew Foundation estimated that, as of May 2013, 34% of American adults own a tablet computer. They also have estimated that, as of January, 2013, 26% of American adults own an e-reader. And the numbers will continue growing. Some predict that tablets will ultimately replace computers and laptops. International Data Corporation (IDC) reported that in 2012, shipments of PCs, laptops, smartphones, and tablets were well over a billion units combined worldwide. In 2013, however, IDC predicted that there would be a billion units shipped of smartphones and tablets alone (Coldewey, 2013).

The key word in the introductory quote is learning. Even though the majority of people are using mobile devices for personal uses, it does not therefore mean that they are being used as learning devices.

It was only in 2002 that the term mobile pedagogy was first coined in Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education (McManus, 2002). However, it has only been since 2009 that the term comes up more frequently in Google Scholar search. This is a very recent phenomenon!

The nature of that quote above seems even more audacious when one thinks about the conservative nature of schools. Mobile technologies are only the latest in a series of educational technologies which harken back to the beginning of the 20th century, each of which has been touted as the solution to our educational problems. In 1933, Frederick Devereux et al. proclaimed the power of the then current educational technology, the film projector:
...the introduction of the use of the talking picture into education may prove to be an event as epochal as the application of the principle of the wheel to transportation or the application of steam power to the industrial age (Devereux, Engelhardt, Mort, & Stoddard, 1933).

Other technologies followed suit, all supposedly revolutionizing the classroom. The list includes radio, teaching machines (programmed instruction), television, personal computers and the Internet. All these technologies seemed to hold the potential of changing the way teachers teach and students learn. And yet they never seemed to live up to their potential.

Why?
Part of the reason lies with the conservative nature of education. Teachers have developed procedures which they have been using in their classrooms for decades and which have been shown to be effective. The introduction of educational technologies is disruptive and requires that teachers revamp how they function in the classroom. To make this shift, teachers need to be shown that these new technologies are going to make a significant improvement in their classrooms.

Some of the technologies were adopted by teachers easily—overhead projectors, ditto machines, and film strips, for example—while others have been less willingly adopted—personal computers and the Internet, for example. Perhaps it is the learning curve that is required for the electronic technologies—it takes a lot of time to master the computer, compared with an overhead projector. It may also be the fact that electronic devices are less reliable. Indeed, the early versions of computers were slow and would crash periodically. And the Internet was similarly unreliable—one was never sure if a page would load, with some websites disappearing entirely over time. These conditions did not bode well for a teacher who had 50 minutes to teach a lesson.

Part of the problem with the electronic technologies is that they have been in almost constant flux. The computer has changed significantly since the early 80s when the Apple 2e, the first computer which achieved widespread popularity, was introduced. On top of that, there have been at least two competing operating systems—Mac and PC—requiring schools to choose which type of computer to adopt. The overhead projector, on the other hand, stayed essentially the same for decades. It’s no wonder there has been skepticism about and resistance to electronic educational technologies on the part of teachers.

And yet many teachers have persisted and have effectively used electronic technologies to teach. But in the process they have realized that they need to use a different approach to teaching to be effective. This new pedagogy is becoming more student-centered, with the locus of control in the classroom slowly shifting away from the teacher and more toward the student. As mentioned previously, education is conservative by nature. Some teachers find it difficult to share the control of the educational process with students. And yet, that is what some educators see as the true picture of what education should be—lifelong learning, rather than school learning. To facilitate adoption of new electronic technologies, advocates need to provide teachers with a reason for giving up control, as well as provide models to demonstrate how to do so effectively—to assure that students are learning.

Some educators resist educational technology because they view the use of educational technology as potentially harmful. Such an attitude is not unusual. Socrates resisted the use of writing, indicating that, if men learn this [writing], it will implant forgetfulness in their souls; they will cease to exercise memory because they rely on that which is written, calling things to remembrance no longer from within themselves, but by means of external marks (Rowe, 1986).
While this resistance to the technology of writing seems quaint, one can find the same attitude with regards to the use of calculators to do math, or the use of the Internet to find information. It is critical that educators grapple with these issues and address the concerns of those who raise them. For students indeed struggle with simple calculations, and they do copy and paste information from the Internet into essays and submit them without citations. Without solutions to these types of problems, some teachers will continue to resist educational technology.

While the potential downsides of electronic technologies are significant, the potential benefits are all the more. The overhead projector was of great benefit to the classroom teacher. Instead of writing on a chalkboard, the teacher could now write on acetate film, which could be created ahead of time and be used over and over again. This represented a significant time saver for the teacher. However, the overhead projector did not change the relationship between student and teacher—it did not significantly change the way the classroom teacher taught.

Electronic technologies, on the other hand, have that potential. Because of the access to information which networks and the Internet provide, the student can learn independent of the teacher. Because of this new approach to teaching and learning, teachers need to rethink their role in the educational process. They have to develop new approaches to teaching which empower the student and shift control away from the teacher to the student.

That is the purpose of this book.

This book will help teachers develop a mobile pedagogy which will allow them to rethink the instructional process in light of this new, potentially transformative technology. The book is divided up into three sections. In the first section, the book will talk about Current Demonstrations and Developments in the Field of Mobile Pedagogy, so as to help practitioners begin to develop a theoretical framework for incorporating mobile technology into the classroom. Initially, Hamm explores a pedagogy which integrates theory with the emerging practice of informal learning which results from increasingly instant access to information. Chan, Fisher and Sauer then discuss a project in which a ‘situated-technology-enhanced learning’ (STEL) approach, integrating mobile learning; constructivist learning, situated learning, and multimodal and multi-literate user interactivity, was used. Kendall demonstrates how Engeström’s expansive activity model can be applied in a lesson which uses podcasts to interview experts in sustainability, resulting in a lesson which supports independent, experimental learning. Rogers and Austin discuss how to use social media to develop personal and professional relationships, which can provide a support network for teachers as they develop as teachers. Finally, Keskin, Sarsar, and Gallagher discuss pedagogical principles used in the use of E-book readers, describe different projects which incorporate E-book readers, focusing upon a project in Turkey, and looks at future implications of using E-book readers in the classroom.

The second section deals with Research, Theory, and Practice with Mobile Pedagogy and Differentiated Instruction. Perez and Bryant initially provide an overview of the built-in accessibility features of mobile devices which can help educators meet their legal obligations for providing access to the curriculum for all learners—particularly those with disabilities. Jackson, Snider, Masek, and Baham continue talking about mobile devices and their ability to differentiate instruction, focusing upon mobile learning applications. Cumming continues the discussion by addressing challenges associated with using mobile devices for differentiated instruction and how these challenges can be addressed. Orr and Conley specifically address the ability of tablets to improve education, communication, and independence of students with moderate to severe disabilities. Finally, Liu, Navarrete, Maradiegue, and Wivagg focus upon the advantages of mobile devices in instructing English languages learners.
The third section of the book addresses Implications for Emergent and Innovative Applications of Mobile Pedagogy. Cho and Woodward describe changing views of reading in the digital world as well as core reading strategies that contribute to successful reading in Internet settings. Santori, Smith, and Schugar discuss how iPad devices have the potential to transform literacy teaching and learning and prepare students for participating in a global society. Walck and Kalyango describe how journalism academic institutions are using the rapidly changing media and communication technologies, particularly mobile tools, to reinvent themselves and to enhance their curricula and teaching effectiveness, while also discussing how media organizations are adapting to the increasing use of mobile technologies in journalism. Amedeker discusses the challenges of integrating technology into a third-world country, Ghana, and how to address these challenges. And finally, McConatha addresses the question of whether online, open sources learning using mobile devices as media for distributed learning opportunities provide an adequate Return On Investment (ROI) within the context of an educational-business framework, and discusses monetization strategies that could support an adequate return on investment—both financially and educationally.

So, why do we believe that mobile technologies will be different than other electronic technologies? Lowell McAdam, Chairman and CEO of the US company Verizon Communications, said in a recent editorial, “Fifty-six percent of American adults have smartphones that give them access to mobile broadband data and video. Our country is the center of a booming mobile ecosystem in which new devices and applications are being used to do everything from personal health monitoring and E-commerce to tracking deliveries and saving energy.” To this assertion we would add that teaching and learning, Mobile Pedagogy if you will, will become an integral part of this new ecosystem.

Mobile technologies are ubiquitous—a growing number of students already have smart phones. This means they are not something which schools necessarily have to purchase. Therefore, school districts may not need to invest in the technology, as they did when computers were introduced—or at least do so to a lesser extent. And because of their familiarity with smart phones, many students and teachers know how to use these devices and are comfortable with them. Thus, there is less of a learning curve for most students and teachers. And finally, it also means that many students have access to the Internet away from school. This allows students to learn anywhere, anytime.

An advantage that mobile technologies have over earlier electronic technologies is that electronic technologies—particularly the Internet and networks—have been around for the last twenty years or more. So they are faster and more stable—and ultimately more reliable than previous electronic technologies in their early stages of development. This stability makes it more likely that teachers will consider using them in the classroom.

The relative longevity of electronic technologies also means that the pedagogical underpinnings of the use of such technologies have been around for a while as well. Many teachers have received training in the use of electronic technologies—the younger ones at colleges and universities, the others by in-service training. Many teachers have had the opportunity to use—and have used—other electronic technologies in an exemplary manner. Compared with earlier electronic technologies, the prerequisites for effective adoption of mobile technologies are so much better.

There is also an increasing push to use electronic technologies to teach. School districts have invested a lot of money in such technologies. Most schools already have an electronic infrastructure, including a wireless network and Internet connection, which facilitate mobile learning. Because they have exposure to electronic technologies outside of school, students and parents expect to have their students learn us-
ing these technologies, including mobile technologies. All these factors add to the inevitability of their use as classroom tools.

However, there is much happening in schools that work against the use of mobile technologies in the classroom. The focus upon accountability, for example, means that time which could be spent in exploratory learning using mobile technologies is focused, instead, upon preparing for tests. Also, more research needs to be done to show the benefits of mobile learning, beyond what is achieved on a test, so that teachers and administrators can say with confidence that the technologies are having a positive effect. In addition, teachers, who may be familiar with the use of computers to teach, still need to see models of how mobile technology can be used in the classroom. Such models are important for teachers so that they can be confident in using mobile pedagogy in the classroom.

By providing a theoretical framework, by providing practical examples, and by pointing to the future, this book hopes to show the benefits of the use of mobile learning in the classroom, help practitioners develop a mental picture of what can be done with mobile technology, as well as help empower them as advocates for using mobile technology in the classroom.

At the beginning of the introduction, a prophecy was made by Norris and Soloway that each and every K12 student will be using a mobile device by 2015. Whether this prophecy comes true is irrelevant to the nature of this book. It is not possible to predict the future. While we believe that the general use of mobile technologies—in some form—is going to happen, the time frame is not clear. The purpose of this book is simply to lay the foundation for this change—whenever it might be.

REFERENCES


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