Cell Phones in the Classroom: Are we Dialing up Disaster?

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“The use of the cell phone enabled the students to become active participants in their learning by using the Internet to search for background information.”

Abstract

Over the last decade there has been a rapid diffusion of cellular technology. Though cell phone use began as a business tool, it has now become part of popular culture. Because of the near ubiquitous presence of cell phone technology among teens in the United States, schools are beginning to explore the use of cell phones as a learning tool. This paper explores the implementation of a pilot program using cell phones in a pre-calculus classroom. Included is a description of the implementation of the pilot, an explanation of several activities that occurred during the pilot, and recommendations of how to work with students who do not own cell phones. The paper concludes with several considerations for the use of cell phones in a high school setting.

Keywords: Cell phones, mathematics, high school, Web 2.0, one-to-one

Several recently published reports (Johnson, Levine, & Smith, 2009; C & R Research, 2010; Lenhart, Ling, Campbell, & Purcell, 2010; Rideout, Foehr, & Roberts, 2010) have indicated that cell phone ownership and use among K-12 students is on the rise. According to the research report Generation M2: Media in the Lives of 8- to 18-year olds sponsored by the Henry J. Kaiser Family Foundation, 66 percent of the 2,000 U.S. students (ages 8-18) surveyed indicated owning a cell phone. This is a 27% increase since 2004 when a similar Kaiser Family Foundation was conducted (Rideout, Foehr, & Roberts, 2010). The percentage of student ownership of a cell phone is highest among high school students with 84% indicating owning a cell phone in comparison to 60% of middle school students (C&R Research, 2010).

The use of cell phones has evolved as the devices have become more versatile through the integration of increased functionalities such as web-browsing, sending and receiving e-mail, and audio/video capturing. According to Rideout, Roberts, and Foehr (2010), cell phones have, “…morphed from a way to hold a conversation with someone into a way to consume more media,” (p. 3). The 8- to 18-year-olds surveyed by Rideout, Roberts, and Foehr reported using their phones the following ways on average per day: 30 minutes talking; 17 minutes listening to music; 17 minutes playing games; and 15 minutes watching TV. Students in 7th through 12th grades reported spending an average of 1½ hours text-messaging.

The increase in student ownership and use of cell phones for a variety of purposes brings about an interesting (and often unwanted) dilemma for schools. Should these devices be used in schools? Robinson, Brown, and Green (2010) state that the potential threats brought about by student use of these devices at school are quite real, and schools need to directly consider and address these issues before allowing their use in the classroom. They go on to write that, “When MCDs [mobile communication devices] become part of the
overall learning environment, preventive measures can be taken to help ensure that students are using the devices appropriately,” (p. 48). Schools should be places where students are allowed to use the tools they are comfortable with and have access to in order to develop and use skills needed to be successful and productive in the 21st century (Robinson, Brown, & Green, 2010).

The goal of this article is to describe a case where cell phones are being used successfully as 21st century learning tools in a high school mathematics classroom. We believe that the dissemination of cases like this can help spark thoughtful discussions that lead to more informed decisions being made about cell phone use, or not, in the classroom.

The Classroom Context

The use of cell phones in the classroom has been a mutual interest for us for the past several years. We have closely examined the literature on the topic of cell phone use in K-12 settings along with observing access to and use of cell phones by our students. Based on our reading and observations, we decided to conduct a pilot use of cell phones in a classroom of one of the authors to determine what could be learned from this process.

The pilot was conducted in a pre-calculus course at Clarkstown High School South in West Nyack, NY. The student population was eighteen junior and senior students. There was an even mix of male and female students. All but one of the students owned a cell phone. This student used a classroom iPod Touch with SMS text capability for classroom activities, and he performed alternative tasks when working on projects outside of the classroom.

Before School Began

Prior to the beginning of the school year, we approached both the building principal and the district’s director of instructional technology seeking approval of the pilot. We were able to present research on the use of the cell phone in the classroom as well as information about projects and other activities the students would do using their cell phones. During these meetings, the selection of the pilot classroom occurred. Additionally, the building principal agreed to send a letter home seeking permission from parents on the use of their children’s phones in the classroom. The letter indicated that parents would not have to change their cell phone plan in order for their children to participate. Students were required to use the SMS text, video and digital camera functions of their phones. After the letter was sent out, an information session was held with the parents the first week of school to discuss the program and to answer questions.

Although most parents found the idea of the pilot favorable, one parent decided to withdraw their daughter from the program because of concerns over excess texting. Another parent withdrew her child after the start of the course because she considered the course to be both a technology course and a pre-calculus course. She understood the value of technology in learning; however, her son required extra time on all assignments and the technology components of the course (the projects) added too much time to her son’s homework.

In concert with parental discussions, a discussion with students was held on the first day to allow the students to become partners with us in the pilot. A student-teacher partnership is important in fostering a solid learner-centered environment (Prensky, 2010). To foster this partnership, we allowed the students to set the rules for the proper use of the cell phone in the classroom. They took ownership of the rules because they created them. They established a few simple rules: (a) students should only use SMS texts for class work, (b) texts should be respectful and relevant to the discussion, and (c) cell phones should only be visible when needed to complete classroom activities. Students also discussed possible consequences for not following guidelines. They established the rules of cell phone confiscation and parental notification should these guidelines not be followed.

Examples of the Cell Phone Use in the Classroom

The use of cell phones occurred in three major ways: 1) as an audience response system, 2) as a research tool, and 3) as a tool for collecting evidence of student work through photographs and video recordings. These three uses were selected because we felt they would help ease in the use of the devices in a manageable way while at the same time engaging students and allowing them to use the various capabilities of the devices to enhance their learning.

Audience Response System. The use of the cell phone as an Automatic response system...