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Uses and Issues of Handheld Devices in the College Classroom

Or

How I Learned to Stop Worrying and Love Technology in the Classroom

A Thesis Presented

by

Christine M Campana

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The Graduate School

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Abstract of the Thesis

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This paper will explore various uses and issues of cell phones and handheld devices in the college classroom. This includes a review of the literature, pedagogical issues and recommendations, and current research. In higher education, teachers must be prepared to integrate at least some of the currently available technology into their classrooms. Teachers need to understand how it works so they can better communicate with students and understand how technology has changed students' capacity to learn. Today's college students are digital natives, having grown up with electronic and computerized technology, thereby seeming to have originated from the place of technology.

Dedication

This paper is dedicated to my parents who said I could do anything if I put my mind to it.

“Cheer up, all is not lost, take home a book and study!”

Dad

“Aren’t you done yet?”

Mom

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Introduction

For college teachers, there are few things more annoying than a ringing cell phone in the classroom. Whether in a lecture hall of two-hundred or in a classroom of twenty, a ringing cell phone can not only disrupt the class, it can knock it off-track. And, who hasn't been annoyed by the sight of a student texting in class, head down, apparently oblivious to the lecture, thumbs furiously and loudly typing across a tiny keyboard. Cell phones on vibrate have the same effect, sounding like a muffled motor bouncing along the desk. Rather than lament this development, teachers can use the technology to their advantage and enhance the classroom experience. This paper will explore various uses and issues of handheld devices in the college classroom. The two underlying questions addressed throughout are: should college teachers find ways to incorporate handheld devices in their instruction, and should students be allowed to have and use handheld devices for educational and personal reasons in college classrooms during class? The paper is broken down into three main sections: an overview of debates on handheld devices in college classrooms, pedagogical issues and recommendations, and current research.

Handheld devices include smartphones, iPods, iPhones, tablets, e-readers, iPads, etc. Since all cell phones are handheld devices, but not all handheld devices are cell phones, in the interest of simplicity, the technological equipment favored by students will be called handheld devices. These devices imitate nearly all the functions of computers and laptops and more people have handheld devices than computers. According to the Central Intelligence Agency (CIA), in 2009, the United States had 286 million cell phone users and 245 million Internet users ("The World Factbook" n.p.).

In higher education, teachers must be prepared to integrate at least some of the currently available technology into our classrooms, including handheld devices. At the very least, they might not use it, but they need to understand how it works so they can better communicate with

students and understand how technology has changed their capacity to learn. Today's traditional college students are digital natives, having grown up with electronic and computerized technology, thereby seeming to have originated from the place of technology. Most college teachers are digital immigrants, coming to electronic and computerized technology, not originating from the place of technology but having to learn what the digital native already knows. This gap between the digital natives and the digital immigrants is one reason why technology has not been incorporated enough into the classroom. Another reason is the "digital divide," referring to the gap between people who have access to technology and people who don't. Generally, the group without access to technology includes the poor, minorities, and senior citizens. Many who don't have access to computers or laptops have cell phones. Since the cell phone is the most common and accessible tool it makes sense to include it and other handheld devices in the current curriculum. Teachers realize that most students know how to use technology and participate in a highly social online culture. But are the young able to make informed decisions about where to find good information using this technology? The truth is they do not always know how to use the technology wisely.

An Overview of Debates on Handheld Devices in the College Classroom

A review of the recent literature regarding handheld devices in the classroom suggests reoccurring arguments – handheld devices are annoying, disruptive, and counter-productive. An example of intolerance for handheld devices in the classroom is Scott Jaschik's, "If You Text in Class, This Prof Will Leave." At Syracuse University, Professor Laurence Thomas, a tenured philosophy professor, has a strict policy regarding texting or reading the newspaper in class – if he catches a student doing either he leaves, essentially punishing the entire class for the actions of one. At the time of this article he had called off two classes so far in one semester for these

infractions. Thomas justifies his actions to what he perceives as a sign of disrespect (3). However, most students don't perceive texting as being disrespectful, and in the meantime, an entire class is being punished. Is this fair to the other students?

Instructables, a blog created by the MIT Media Lab and frequented by teachers, students, and other interested parties asks, "How do I stop cell phone use in the college classroom?" Postings between May 2009 and now offer such advice as humiliating a student, locking the door behind a student when he leaves to take a call, throwing the cell phone against the wall, answering a student's ringing phone, and using cell phone jammers (n.p.). It would not be wise to use any of these methods as they are not conducive to a productive learning atmosphere and at least two are illegal. There are other blogs that discuss cell phones and most are critical of students' usage of cell phones in the classroom. In both Denise Fawcett Facey's "Cell Phone Use in Classrooms: The Wave of the Future?" and *Helium's* "Cell Phone Use in Class," there are several postings, all against cell phones in the classroom (n.p.). Again, these sites are frequented by teachers, students, and other interested parties.

However, Larry Rausch, on Education Week's *Digital Directions*, under a posting titled, "Has Technology Really Changed Education?" asks the question, "How could you not make the investment in technology? Every student has an iPod, cell phone, and a Facebook account. They live in a technology rich world. School has to be a technology rich environment or school will become even more of a foreign world to them" (n.p.). In 2001 and 2004, *NEA Today* published two debate articles with both positive and negative reactions, "Should Cell Phones and Pagers be Allowed in School?" and "Should We Ban Cell Phones in School?" There are other blogs with more positive reactions. Dr. Steven L. Berg of Schoolcraft College in Michigan moderates a Micro blog that asks students to, "Please Bring your Cell Phones." Cell phone use in class is

encouraged. Jason Farman, at the University of Maryland, College Park, encourages teachers to experiment with mobile media (“Encouraging Distraction?”).

But Marilyn Gilroy’s article, “Invasion of the Classroom Cell Phones,” offers yet another negative viewpoint of cell phones in the classroom, even comparing them to “technological terror.” She says, for example, that cell phone use on campus should be “treated like cigarette smoking, with strict limits on where students can talk on them and even designated ‘non-cell phone’ areas” (57). That is extreme and very unnecessary. Many blog entries and articles did acknowledge the practicality of using cell phones; for instance, they are cheaper than laptops and easier to get hold of someone in an emergency. It would seem that the general opinion is that cell phones and handheld devices have no place in the classroom. However, that opinion appears to be changing as more positive reactions to handheld devices in the classroom demonstrate.

Handheld devices can also be disruptive, as when students sneak unflattering video and pictures of their professors online to sites like Youtube and Facebook. In Vaishali Honawar’s, “Cell phones in Classrooms Land Teachers on Online Video Sites,” David Strom of the American Federation of Teachers says, “It is disturbing to the educational process, because the fear of being taped could change how teachers interact with students” (1). This could have a big impact on the classroom environment because teachers may be reluctant to try something new or become unapproachable, and students may be afraid to speak out for fear of being taped as well. Teachers should try to curb their enthusiasm for yelling or leading cheers in the classroom and should be as professional as possible. Snippets of video are frequently taken out of context. One way to combat this is to teach children cell phone etiquette when they are young. Unless parents initiate good training, children will be susceptible to peer-pressure, pranks, and other improper uses of

technology. Instilling digital literacy at a young age helps build a foundation for the proper use of technology and makes it easier to identify with a professional image than an improper one.

Katie Ash and Michelle Davis, authors of “What do They Think?” summarize an online discussion that asks for teachers’ feedback about students’ use of technology. They reference a 2008 NEA/AFT survey that “suggests there is growing frustration among students that they have to ‘power down’ their use of technology when they enter school buildings” (28). The younger generation has grown up with this handheld technology and for better or worse it is an extension of them. Human-computer interaction is a way of life for a digital native. Instead of being annoyed by a texting student, a teacher should realize that the student may be taking notes, researching information, and yes, checking for messages. In the past, teachers wouldn’t bother to comment on a student looking out the window or whispering a quick message to the person seated next to him. Today’s quick check for messages is no different than yesterday’s distractions, but teachers can use this to their advantage. While it can be more difficult to bring the daydreamer or the sleeper back to the lecture, the “phone-checker” is already engaged, his or her attention briefly focused on the handheld, but focused nevertheless. Checking for messages takes about as much time as checking a wristwatch for the time.

One of the complaints in Michael Bugeja’s, “Distractions in the Wireless Classroom,” is that students appear to be taking notes but are really surfing the web, checking Facebook, IMing friends, and emailing classmates” (C1). This appears to be the most common complaint in a wireless classroom. Reading messages distracts students from their work. There are softwares though, that enable the professor to see what students are up to. There seems to be little written about the impact of having such software in the classroom. It may be convenient, but may also be a distraction in itself.

Pedagogical Issues and Recommendations

Youth and Technology

In the 2011 John D. and Catherine T. MacArthur Foundation report, “Exploring Digital Media and Learning,” research shows that “young people live in highly fragmented worlds. Their experiences in schools, libraries, museums, and after-school programs are rarely connected. Their many activities online are similarly fragmented and rarely connect to their offline interactions with adults” (1). Young people are interacting and participating in digital media earlier and earlier. One aspect of the Internet is that it’s always on and can be accessed any time. These digital natives are clever at adapting the technology for their own means to participate in a highly social culture. It’s nothing for teens to generate user content, posting to blogs and wikis or sharing photos and videos. Digital natives compose all the time, reimagining and remixing their videos, pictures, and audio content to create something unique. But, while students may participate in a highly social culture on their own time, this rarely has anything to do with school, the library, etc. and is the reason for the disconnect. Here is an opportunity to bring students more in-line (online) with culture and academics. Their educational framework is not only built on texts, but audio, video, and the social networking aspects of the Internet.

The MacArthur Foundation report also found that in a “survey of undergraduates at a large public university: 99 percent have their own computers; 95 percent of those with computers use them daily; 76 percent have iPods or the equivalent; 51 percent use online social interaction tools daily; 93 percent use instant messaging; 34 percent use cell phone text messaging daily; 90 percent say information technology (IT) helps them learn, 93 percent say IT helps them communicate with their instructors. 94 percent say IT helps them with research” (4). Young people are learning in peer-driven groups. The MacArthur Foundation also found that “young people respect each other’s

authority online and are more motivated to learn from each other than from adults.” This is why teachers should keep up with the current technology or they may not be able to relate to their students. This is not to advocate that teachers should intrude upon students’ time, but at the very least teachers should take advantage of texting, email, Twitter, and Facebook (or any other information collecting site like Angel, Blackboard, the Cloud), all of which can be accessed by handheld devices.

Students are not that Savvy: Why we need Technological Information Literacy

Teachers also have to be careful about assuming students’ knowledge. Messineo and DeOllos ask, “Are We Assuming Too Much?” Teachers know most students know how to use technology and participate in a highly social online culture. But are the young able to make informed decisions about where to find good information using this technology? The truth is they do not always know how to use it wisely. Students might be digital natives but that doesn’t mean they know how to effectively find, evaluate, and use sources. Activities like tweeting and video-gaming don’t mean they can properly use PowerPoint or census.gov. Students need to be guided to good technology and taught how to use it properly.

The American Library Association (ALA) believes that information literacy “forms the basis for lifelong learning” (1). The ALA defines information literacy as “the ability to recognize when information is needed and the ability to locate, evaluate, and effectively use the information” (1). As technological advances increase the number of different types of sources, and the amount of information increases exponentially, it becomes more important to learn how to wade through the data smog to find the most reliable sources for school, work, and personal reasons. Finding credible sources is very important and challenging, especially for college students navigating multi-media sources. According to the ALA, information literate individuals are able to: use

computers, software applications, and databases; identify the value and differences of potential resources in a variety of formats (multimedia, database, website, audio/visual, book); join forums that encourage discourse (e-mail, chat rooms, listservs); understand intellectual property, copyright, and fair use; practice Netiquette (online etiquette), understand plagiarism, and select an appropriate documentation style (3-14). Most of these topics require a computer so a handheld device is a productive way to engage students in developing digital literacy skills. An example is a group blog or wiki assignment. Teachers will often direct students to generate user content with a combination of the students' own writing and the addition of quotes, audio and video files, and images. Issues of copyright and documentation style will eventually come up as students are taught that they cannot credit themselves for borrowed work. Even reimagined works usually have an owner/copyright trail. Aspects such as audience and Netiquette must be addressed as students need to be courteous online and understanding of their audience.

Another important aspect of technology is knowing not only how to use it, but when to use it. Steven Fraiberg discusses the idea of 'uptake' in "Composition 2.0: Toward a Multilingual and Multimodal Framework." Uptake is knowing how and when to use a particular genre, and how teachers can study and compare writing that goes on inside a classroom with writing outside of school. Fraiberg also brings up the idea of writing ecologies that ask students to understand how different kinds of technology get along in different settings, or with various audiences. This includes an understanding of technological and information literacy as well. Students use different language inside and outside of school. A project that asks students to create a website inside and outside of class that incorporates different technologies yet caters to a particular audience must also weigh ideas of usage, meaning, and content.

Why Teachers Have To Get On Board

If information literacy is important, then technological literacy is equally important. Educators could apply the same definition to technological literacy as the ability to recognize when technology is needed and the ability to evaluate and effectively use it. Teachers know that students are digital natives but that doesn't mean they are skilled at technological literacy. That is why teachers need to be as skilled in using technology because they also have to help students understand that not all technology is created equal, just like not all sources are created equal. Some, like Wikipedia, may have their place, but students need to know why they should not use Wikipedia when looking for scholarly sources except when using its external links. Cynthia Selfe in, "Technology and Literacy: A Story about the Perils of Not Paying Attention," brings up a point that most teachers probably would not want to admit, "that technology is either boring or frightening to most humanists, many teachers of English composition feel it antithetical to their primary concerns and many believe it should not be allowed to take up valuable scholarly time or the attention that could be best put to use in teaching or the study of literacy" (412).

This is not to say that there should be a required technological literacy for all teachers, contingent and tenured. There are some teachers who want to learn to use technology in the classroom but due to the nature of their appointments are unable to do so. As Robert Samuels says, "due to the temporary institutional status of most compositionists, there is rarely enough time to experiment with new technologies and to take risks by developing pedagogical and curricular innovations" ("The Future Threat" 64). This is a huge obstacle in trying to bring teachers to the point of technological literacy. Contingent faculty have so much on their plates as it is, adding technology may simply be an unrealistic effort. According to a 2008 MLA report, "Appointments to part-time positions constituted from 60% to more than 70% of all faculty appointments; full-time

non tenure-track appointments accounted for 17% to 25%” (“Education in the Balance” 10). It would be worthwhile for schools to offer incentives to contingent faculty to take classes on using technology, as well as providing support such as a help desk for faculty questions. Understanding how to use the technology in the classroom is half the battle; the other half is learning the technology itself. In some cases, tenured teachers receive incentives to take these classes, but usually not contingent faculty. It does not mean contingents should avoid classes on technology, but it means that among their class-packed days, in some cases between schools, they cannot possibly squeeze them in, thereby perpetuating what Samuels says.

Lack of Support and Training

In “Teachers Testing Mobile Methods,” Katie Ash tries to understand how to incorporate mobile devices into the classroom. She acknowledges that the shift to technology is tough for teachers who do not know the technology and what teachers need is technical support and ongoing professional development. She says that, “the role of the teacher has gone from the person who delivers the instruction to the person who facilitates learning” (26). Instead of talking at students teachers should be talking to and with them. “What you do with technology should be one-hundred percent driven by the curriculum and what the students need” (27). Teachers should not use technology for technology’s sake. The first thing teachers need to do is establish learning objectives and goals – what do educators want students to learn? Once the objectives are clear, then teachers can figure out the most appropriate technology to use.

Teachers may use some technology here and there in the classroom, but they often use what they already know and stay at that point. It is difficult to progress and maintain a certain technological level without some help. The heart of the article, “When Good Technology Means

Bad Teaching,” deals with lack of training for teachers (Young). Students often know how to use the technology better than the professor and this can create problems in a classroom with even just the basic computer and projector screen. One of the complaints is time wasted fumbling with projectors and software. When dealing with technology, always have a plan B. This is where support and training come in. Young even includes some student’s opinions like Artin Bastani, a senior at Miami University, who advises teachers, “If you’re going to attempt to use technology, either use it right or don’t use it at all” (A31). Harsh words maybe, but how many teachers really know how to use the technology correctly? Considering that classroom technology occasionally malfunctions it would seem wise to consider alternatives like handheld devices, which do not seem to have the same issues as classroom technology.

In another article, Young discusses a debate between two people on whether technology in the classroom improves student learning. Some of the key points: teachers as designers of the learning experience rather than simply presenters of information to passive recipients, using technology to help support more effective pedagogies, improving student learning, and realizing that the most important thing in a classroom is a motivated student and a good teacher (“Face-Off” B12). Motivated student and a good teacher are worth repeating.

Handheld technology continues to evolve and this may be why the technology is so unsettling to teachers. Add the idea that students can now look up information on their handheld devices and the professor in the room is no longer the one who has all the knowledge. What are the consequences of a student population that has access to nearly the same information as the teacher? It is very uncomfortable to be upstaged by a student, especially when a few support and training classes could help the teacher deal with this shift in classroom knowledge. It may be time for hiring and promotion committees to consider adding technological literacy requirements.

Another point to consider is the effectiveness of mixing technology with education. Cynthia and Richard Selfe argue in, “The Politics of the Interface: Power and Its Exercise in Electronic Contact Zones,” that composition teachers may know how to use some technology but they don’t “think carefully about the implications of its use within their own classrooms” (496). While it is not known if the Selfes believe that all or some composition teachers don’t think about the implications of technology use, teaching in a lab does change the dynamic of the class. It is more difficult to have students work in groups where the equipment is static. Since the computers cannot be moved, the only thing students can do is move their chairs and huddle around some of the computers. This is not the worst situation, but it does slow down the energy of the class. Using handheld technology including laptops and notebooks is a way for a class to seamlessly go from start to finish with little interruption.

Digital Divide 2.0

The term “digital divide” refers to the gap between people who have access to technology and people who don’t. Generally, the group without access to technology includes the poor, minorities, and senior citizens. Stephanie Vie’s version of the term “digital divide 2.0” recognizes that “students are often more technologically adept than their instructors” (“Digital Divide 2.0” 10). In order for teachers to help students think critically about technology they must first learn this technology themselves. Vie also believes that social networking sites like Facebook disturb the traditional classroom hierarchy. There is a subtle power shift when students create their own identities and participate in online communities. Since students are digital natives they seem to know how to do this inherently and are quite good at it. But while they may seem born to the technology, they still need the help of teachers to develop the critical thinking skills necessary for technological literacy. Teachers who don’t know how to use the technology don’t understand the

value students place in their online communities. Students don't look to teachers for validation or confirmation in creating their online avatars or Youtube mash-ups, but they look to teachers for guidance toward technological literacy.

What Can We Do With Handheld Technology: Practical Applications

What can we do with handheld technology? Sometimes, an unexpected incident can produce a teachable moment. In, "OMG! Texting in Class?" Richard Byrne tells a story about a student who texted her mother during a lesson. Instead of taking the phone away, he answered the text and drew the mother into the discussion about a local referendum. He also invited other students in the class to text their parents to discuss the referendum, thus opening a door to a new idea for using technology in the classroom and promoting dialogue between the students, their parents, and the teacher. Byrne took what could have been an awkward moment and turned it into an idea for teaching politics. Now that Byrne has the idea to do this, he can repeat it, create a more formal assignment, or apply the idea to another topic.

In, "Portable Playlists for Class Lessons," Kathleen Kennedy Manzo talks about an experiment at Rosewell High School that used iPods and MP3 players in two Advanced Placement classes and one English Literature class. Students had round-the-clock access to the class website and all kinds of multimedia resources. "The students often take notes or compose drafts of essays on the miniature keypads using word processing software and then send them to themselves via email" (16). The devices can also be used for quizzes as well. Students can find answers to questions or access the questions from particular sites. "We've been struggling to move teacher instruction away from some of the more traditional approaches to formats that more engaging for students. We're giving them a great tool, not only for them to be successful in high school, but

when they get out in the real world” (17). If this experiment proves successful in one high school environment, then more high schools may incorporate these handheld technologies and colleges will have no choice but to keep up. It would be a shame for students to become frustrated because their college is outdated.

Josh Fischman’s idea about cell phones is, “The Campus in the Palm of Your Hand.” He believes that not many students check email. Instead, students use their cell phones for everything else: to review homework assignments, text, take quizzes, visit bulletin boards, receive alerts, check syllabuses, and access other classroom educational tools. A device that can access nearly all campus functions should be given consideration.

Katie Ash describes a Spanish and ESL teacher who uses cell phones to create virtual scavenger hunts where students translate clues to complete an activity and also to call in and record assessments, which save time. Some of the benefits include more open communication because of the convenience of texting the teacher and a rise in test and quiz scores. While there are no specific numbers from this teacher regarding the rise in test scores, the idea that the handheld device can be used as an assessment tool to gauge learning is one that deserves merit. Assignments using handheld devices can encourage students to solve problems without the teacher which is one of the goals of education. These projects can be also tailored to suit the students’ needs. (“Teachers Testing” n.p.).

Jeffrey Young’s article, “Teaching with Twitter: Not for the Faint of Heart: Students are Emboldened, But They Can Also Hijack Discussions,” discusses some of the more realistic aspects of teaching with technology, more specifically Twitter. He says, “Opening up a Twitter-powered channel in class . . . alters classroom power dynamics and signals to students that they’re in control” (A1). Young says that some software allows students to ask questions

anonymously, which often brings about some unexpected results. “As one student, Ben Van Wye, told me, I’m not that outspoken in class, so I would never ask a question out loud to the professor. But you can type it in as anonymous, so nobody really knows if what you’re asking is a dumb question” (A11).

Dr. Monica Rankin, Professor of History at the University of Texas at Dallas, tried an experiment with Twitter in her U.S. History II survey course composed of 90 students. She supplemented the lecture by having students tweet their input. Afterward, a few students were interviewed and the feedback was positive. One of the comments included the positive effects of having their opinions heard (seen) in a large class since it is difficult for the professor to address everyone. Looking at all the tweets on the screen promoted more thoughtful dialogue and added value to the class. Since tweets are restricted to 140 characters, it is up to the students to make sure their thoughts are concise and not ramblings. This is a good way to engage those who would otherwise be too shy to participate.

In her 2008 book, *Toys to Tools: Connecting Student Cell Phones to Education*, Liz Kolb offers exercises using the cell phone in a high school setting. According to Kolb, “anything that takes up so much student time and interest deserves scrutiny” (1). It is not a “if we can’t beat em, join em” attitude. Kolb realizes that if students are so enamored with the technology, then teachers should find out more about it. Handheld devices offer “knowledge construction, data collection, and collaborative communication tools to help students become more competitive in the digital world” (2). Using handheld devices, lessons can be planned around podcasting, voice mail, conferencing, mobile notes, RSS feeds, email, Skype, calendars, notepads, Twitter, and calculators. Assignments can be written on handheld devices and e-books and -textbooks can be downloaded.

Kolb also acknowledges an odd side-effect of technology, it “helps with student absenteeism” (180). Students can no longer hide or use excuses about why they forgot their homework. Access to technology puts everyone in a 24/7 environment. All too frequently students contact teachers technologically and expect immediate responses. Teachers should expect the same consideration. Some might say this environment is invasive. The convenience of handheld technology is that it is always on. But that is also a negative point. There must be boundaries to avoid being overwhelmed by the technology.

Cheating

Teachers cannot ignore the cell phone’s potential use in cheating. One of the questions in Kristin Doherty’s 2007 capstone project, “Increased Cell Phone Usage and the Changing College Communication Culture,” asks, “How many times have you witnessed students using their cell phones to cheat on an exam or assignment during class?” The answer:

Only a very small percentage, 16 percent, acknowledged that they had ever seen this occur. As this is a sensitive question, and the students may have feared identification, I think this is a question that may not have been answered truthfully. Much of the research and writing on this subject indicates that cheating, in some way, does occur in the classroom via the cell phone. (38-39)

Of course, this number can vary greatly depending on the school, but it is generally acknowledged that handheld devices can be used for cheating. I asked the students in my Media in Communications class this semester if they had ever witnessed anyone using a handheld device to cheat in any of their other classes and more than half said they saw “a lot” of students using handheld devices to cheat.

Caitlin Moran discusses some innovative ways that students use cell phones to cheat in, “Cell phones, Handy Tools for Emergency Alerts, Could be used for Cheating during Tests.” Unfortunately, students have always found ways to cheat on exams and using cell phones for this purpose is simply another way. One way to cheat during exams is to use an online service like ChaCha, where students text their questions and a “live” person texts the answer back. However, ChaCha is not known to be reliable (think Wikipedia), and even a student who worked for ChaCha said the people who work there are very young and not properly trained in how to find good sources. Students who use ChaCha are not only cheating, but receiving questionable information. Moran also references an incident at Prairie View A & M University where eleven nursing students were denied graduation because they texted students who had already finished the test (A15). Another way for students to use handheld devices to cheat is to take a picture of the test and send it to someone taking the same test later that day.

One way to discourage cheating is to collect all handheld devices before a test. This will eliminate most of the cheating. However, there may be one or two students who might have two handheld devices on them, and there may be students who revert to “old fashioned” cheating methods like writing on their hats, arms, hands, or water bottles. In a smaller classroom this is easier to control, in a lecture hall, less so. Those few students who cheat well are always going to cheat and it is foolish to blame the handheld device, it is simply a newer way to cheat. That would be like blaming the paper used in making cheat sheets. Some may say that collecting the devices before a test sends a message that the value of the schoolwork done by these devices is somehow decreased. Cheating is a serious offense and unless the teacher offers an open-book test, then no materials should be near the students and this includes handheld devices.

Emergencies

Many students keep handheld devices for emergencies. Without some sort of device, the process of finding a student on campus in an emergency would be painfully slow. The reality is that by the time someone figures out who to call at admissions or campus police, the student could have moved to a different location or left the campus altogether. There is no evidence more compelling for using handheld devices as alert systems and allowing students to have them in the classroom than the Columbine and Virginia Tech incidents. During the Virginia Tech incident, the campus sent e-mail alerts. Very few students received them, especially those walking across campus. Had the school used cell phone alerts, the end result may have been different. In Fischman and Foster's, "New Phone Technologies Can Help Colleges Communicate Campuswide in Emergencies," communications companies try to work with colleges in creating services using the cell phone:

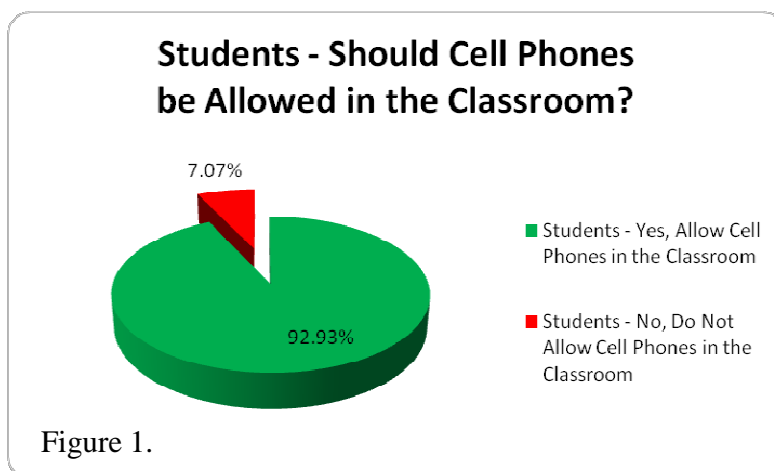
Our students don't check campus e-mail, and they're not carrying laptops around, says Ronald G. Forsythe, a vice president in charge of communication systems at the University of Maryland-Eastern Shore. But more than 90 percent of them carry cell phones. The best way to get to them is to blast a text message. Officials such as Mr. Forsythe say they are confident that with text messages they could warn students and others of a dangerous situation within seconds. (A16)

Students usually tell me at the beginning of class if they are waiting for an important call. Sometimes a student will be called into work at the last minute because of a busy shift or to replace someone who did not show up. A few have had to leave either because they had to pick up a parent or sibling, or had a doctor's appointment. These are legitimate excuses, not unlike people at work being called out of a meeting or leaving early because of an emergency.

Research: My Survey of College Students and Teachers on Cell Phones in the Classroom

Prior to writing this paper, my interest focused on the cell phone in the college classroom. The cell phone has been the most ubiquitous tool for a few years now. Every semester I poll my students to find out how many have cell phones and each time the number increases. When I started teaching six years ago less than half the students in my classes had cell phones. Now, nearly all have cell phones and many have upgraded to other handheld devices. Realizing that technology was not going away any time soon and thinking I already knew the reactions to allowing handheld devices in the classroom, I decided to survey students and professors. I received approval for one year of research at Farmingdale State College (FSC), a four-year undergraduate public school where I work as an adjunct assistant professor in Professional Communications and adjunct reference librarian in FSC's Greenley Library. I gave my students a two-question survey over two semesters (see appendix 1 for cell phone questionnaire) and received 99 responses. I also sent out 25 surveys to teachers in various departments at FSC: Professional Communications, Technology Studies, English, and the campus library where the reference librarians have faculty status. I received 17 teacher responses (see appendix 2 for survey data of students and teachers opinions about cell phones in the classroom).

Out of 99 students surveyed, 92.93% think cell phones should be allowed in the college



classroom (see figure 1). I thought all students would have been receptive to the idea of being able to use their handheld devices in the classroom, especially since they have educational value. I wonder if perhaps the students

who were resistant were so because their teachers have never used technology in the classroom, either because the teacher did not know how to use it or teach with it. There is a learning curve associated with technology. And, not all handheld devices offer the same functions. Unless all the features and functions of the technology are the same, not all students can participate and teachers cannot assume that all students know the same technology. Or, perhaps some students simply think technology is a distraction in the classroom.

While 92.93% thought cell phones should be allowed in the classroom, 95.96% thought cell phones should be allowed in the classroom for emergencies (see figure 2). The Columbine and Virginia Tech school shootings and the events of 9-11 have taught us that it is important to have a security alert network. In an emergency the best way to reach people, especially students, is through a text blast which is usually delivered to a cell phone or some other handheld device.

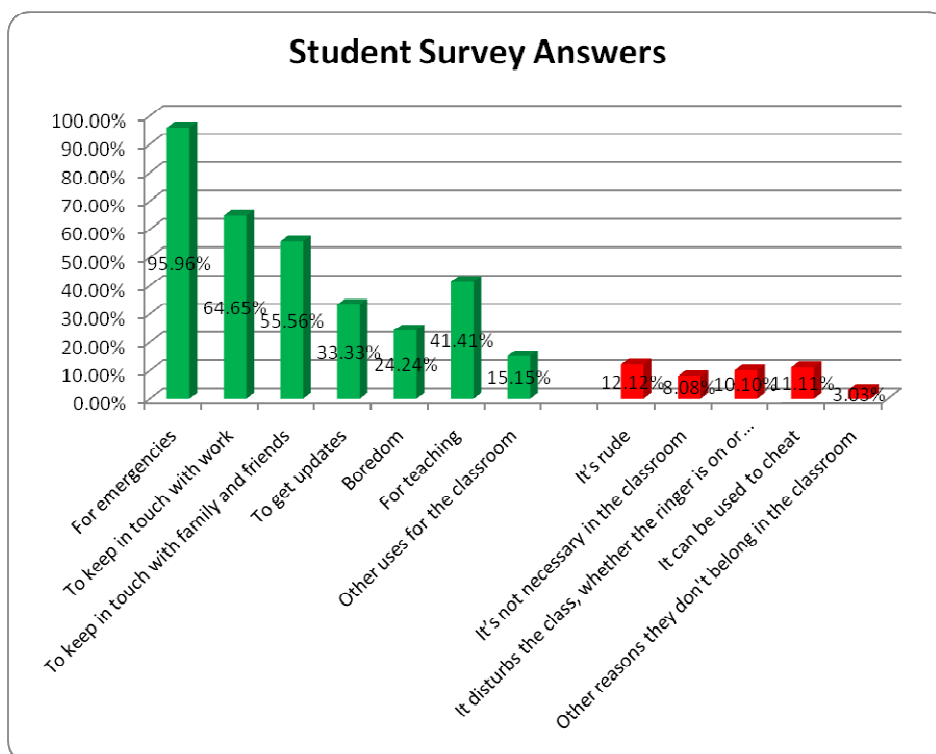


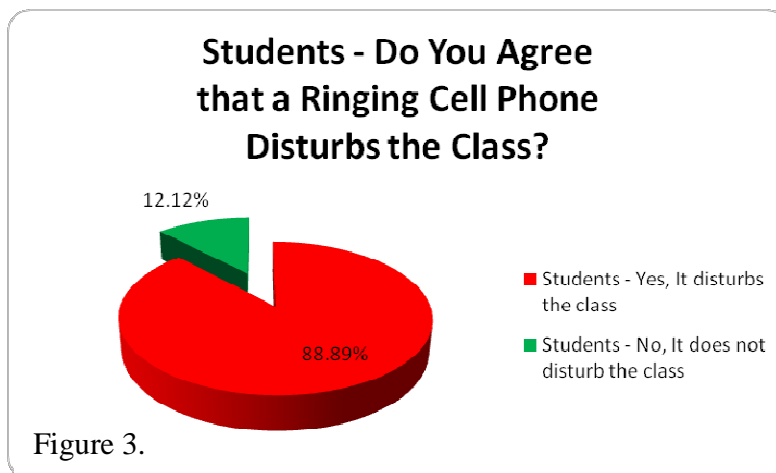
Figure 2.

Most handheld devices can be programmed to receive text messages through a phone number or email routed to the handheld device. Do the 4.04% of students who responded that cell phones should not be allowed in the classroom for emergencies believe that the campus will be able to find them? Or do they have an alternative emergency system? In the interest of time, the questionnaire was designed to gather numbers and only allowed general comments unless the student volunteered more information. It would have been interesting to go further and seek more extensive comments in each category. Perhaps someone else will conduct a follow-up study to further analyze student and teacher comments.

It is worth noting that 64.65% use the cell phone to keep in touch with work. According to Frank Donoghue, author of *The Last Professors: The Corporate University and the Fate of the Humanities*, “82 percent of all college students now work while attending school and 32 percent of them work full-time” (90). With the increase in the number of non-traditional students comes a rise in “on-call students” who are tethered to their cell phones in case an employer needs them or if there is a medical emergency. In the last year or so several students have told me before class that they are on-call and may have to leave if contacted. Surprisingly, 55.56% think that cell phones should be allowed to be used to keep in touch with family and friends. I don’t know if some students confused this with emergencies, but if they didn’t, then apparently a little more than half think it is okay to keep in touch with their nearest and dearest. Less than half the students, or 41.41%, thought cell phones could be used for teaching, again maybe because none of their teachers have ever used it for that purpose. Students are more frequently told to put the handheld devices away rather than use them in a class lecture. Other numbers for those who thought cell phones should be allowed in the classroom included: 33.33% thought they should be allowed to get updates, 24.24% used their cell phones because of boredom, and 15.15% thought cell phones had other uses

in the classroom. Again, it would have been interesting to find out exactly what they meant by other uses. While 7.07% of students thought cell phones shouldn't be allowed in the classroom, even those who thought they should be allowed checked off some negative comments. For example, 12.12% thought using cell phones in the classroom was rude, 8.08% thought they were unnecessary, 10.10% thought they disturbed the class, whether the ringer was on or not, and 3.03% thought there were other reasons that cell phones did not belong in the classroom. Another surprising revelation, only 11.11% of students surveyed thought the cell phone could be used to cheat, which is odd since we have discussed this topic in class, and many students seemed to be aware of cell phone cheating and have witnessed it in other classes (see figure 2).

Lastly, regarding a ringing cell phone, 88.89% thought a ringing cell phone disturbed the class (see figure 3), but 12.12% didn't think anything of it. As one student wrote under comments,



“we’re getting used to the sound of a ringing phone.” But is that true? Students are reminded at the beginning of the semester to turn off ringers and other noises that cell phones and handheld devices make. But in their lives

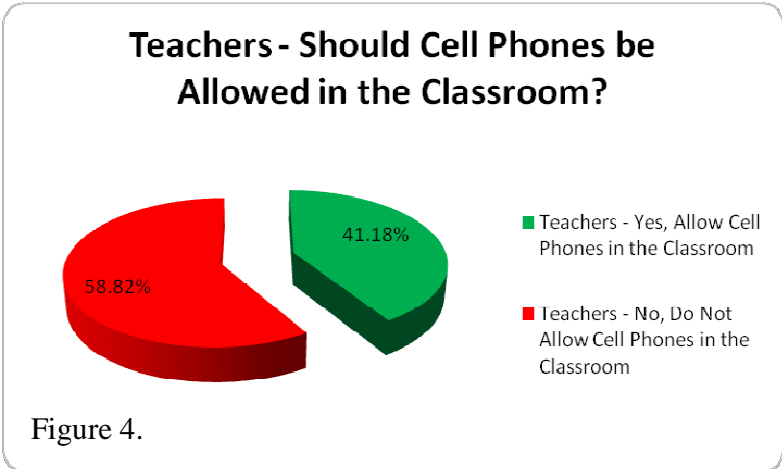
outside of school, the cell phone ring may be just another background noise like traffic or music.

Some student comments as they appeared on the survey:

- “with that said it should be on silent so it doesn’t disturb other students. Also they obviously shouldn’t be allowed during tests”
- “if a student is on their cell phone, that usually means they are bored. So, cell phones distract them. The cell phone just gives students something to do but if they didn’t have it, they wouldn’t pay attention anyway. They would find a different distraction”
- “god forbid a friend or family member gets into a car accident. I would like to know asap.”

- “the phone should be kept on silence. You should make your professor aware if there is reason you need to leave your phone on your desk. We are adults and should have respect and discretion on when, where you should use your phone”
- “cell phones can be used for anyone who has an emergency during class. Internet friendly phones can help with the lesson if needed (google answer)”
- “I think we could use cell phones to improve class participation and also to be used for learning purposes. Students must have phones on silent or vibrate. (preferably silent).”
- “I think there are advantages to this. People are fresh to these technologies and will pay attention to what is on the screen”
- “if students feel they have the freedom to have their cell phone out, they will feel less need to constantly be on it behind the teacher’s back. Besides, cell phones are mini-computers now, you can research everything on an i-phone.”
- “I believe using cell phones or technology in the classroom could be very beneficial to the learning process”
- “as the student is paying for the class, they should be able to do whatever they please, as long as it doesn’t distract others. If the phone is on silent its up to the student to learn what they want from the class. I believe the true question is, at a nonexam moment why would the teacher be able to make a cell phone rule when college is a service industry?”
- “can also be used for learning ex. teacher uses a word the student does not know he/she can use their phone to look up the word, won’t get stuck or left behind in the class”
- “cell phones, and any devices that can be used to enhance the learning environment. Technology is faster and that makes a better relationship for students and professor. When used appropriately, cell phones can improve student/teacher relationship.”
- should be kept on vibrate or silent. I felt that it’s important to be able to have an outlet of some sort. use of a cell phone in class does not necessarily mean the student is uninterested by what the professor is saying.
- if there is a sick family member, the student should tell the professor ahead of time, and keep it on vibrate, but also causes distraction, temptation, and draws away attention from the lesson
- college isn’t high school, if a student fails because they are on their phone that is their own fault.
- people like myself that work full time need to have phones available at all times
- “I feel if your (sp) paying for schooling you should be able to use your time as you want as long as it doesn’t disturb the other classmates”
- “Cell phones should definitely be allowed unless they are distracting the class, they should not be a problem we’re all adults. It’s our decision.”
- “as long as it isn’t affecting anyone else then why not

Out of 17 teacher responses, 41.18% think cell phones should be allowed in the college classroom (see figure 4). The use of the handheld device in the classroom represents a shift in power to the more student-centered “guide on the side.” The idea that almost half the teachers think cell phones should be allowed is pleasantly surprising and could be interpreted as an



inclination toward student-centered pedagogies. While 41.18% of teachers thought cell phones should be allowed in the classroom, 47.06% thought they should be allowed for emergencies (see figure 5).

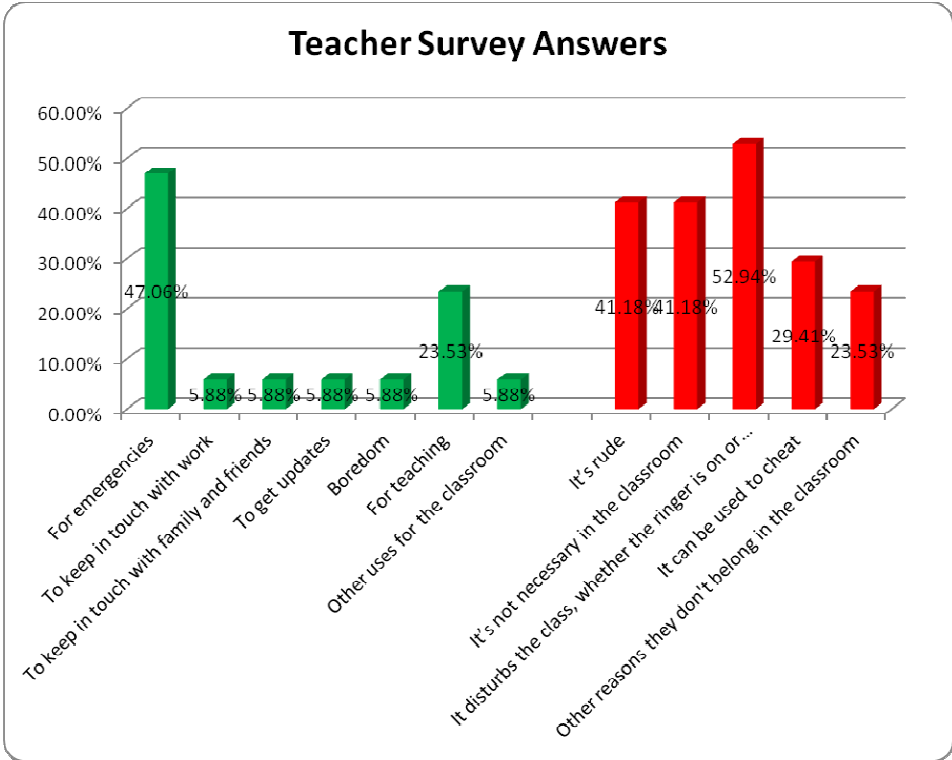


Figure 5.

This differs with the 95.96% of students who thought cell phones should be allowed for emergencies. It would seem that either teachers have half the emergencies of students or don't put as much emphasis on them. About 5.88% of teachers thought cell phones should be allowed to keep in

touch with work, with family and friends, for updates, boredom, and other uses in the classroom.

Only 23.53% thought that cell phones should be allowed for teaching. This is surprising because less than half thought that handheld devices should be allowed in the classroom, but less than one-quarter thought they should be used for teaching. Again, it could be lack of training, support, or fear of technology. A little less than half, or 41.18%, thought cell phone use was rude and unnecessary in the classroom. A little more than half, or 52.94%, thought it disturbed the class whether the ringer was on or not, and 23.53% thought there were other reasons that cell phones did not belong in the classroom. Compared to 11.11% of students who thought a cell phone could be used to cheat, only 29.41% of teachers thought the same thing. According to this survey, more teachers think cell phones disturb the class than are used to cheat. Some additional training in technology may help teachers recognize when a student is using the cell phone to cheat.

ly, regarding a ringing cell phone, 100% of teachers surveyed thought a ringing cell phone disturbed the class (see figure 6). When compared to 88.89% of students, we have a small

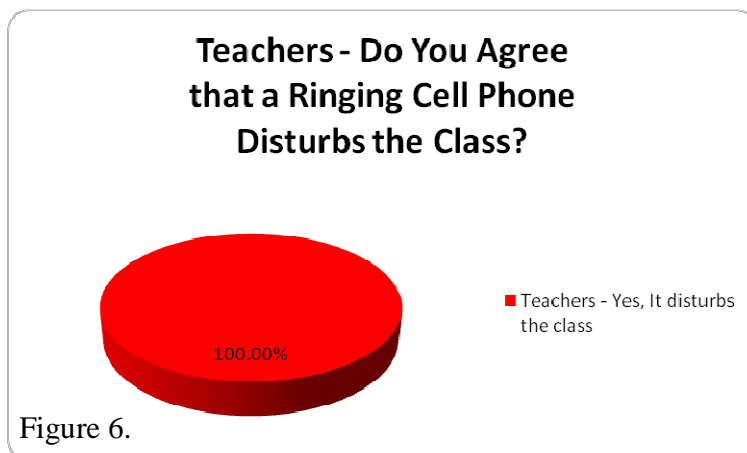


Figure 6.

difference in opinion as to what constitutes a disturbance. As stated previously, students who think a ringing cell phone does not disturb the class probably think of it as background noise.

Some teacher comments included:

- “must be turned off and out of sight – unavailable during testing”
- “all of the above, it’s a necessary part of our lives now”

- “college students are adults with many responsibilities, they cannot always be out of touch for 3 hours. Some have young children, elderly parents, run corporations – emergencies come up. People should be warned to turn off ringers on day 1 or face the wrath of an angry teacher. All phones have vibrate, or other silent modes”
- “as a response system in the classroom that may not have (unreadable) – all phones will replace clicker technology. Also, they will be used for in-class research in the future, eg. smart phones”
- “any technology used in the classroom, particularly technology easily subverted for private recreational purposes, should be always under the control, or at least the scrutiny, of the instructor, which smart phones are not. Otherwise many, perhaps most, students will goof off more than they work. Learning requires concentration, application and discipline, which would be weakened by uncontrolled use of these devices.”
- “always concerned that someone have phone/text access in the event of an emergency.”
- “phones should be turned off during class time. It is an unnecessary distraction to students.”

Conclusion

On a warm day in March of 2012, I conducted an impromptu wireless research class outside in the campus gazebo. All but two students had handheld devices with wireless access, and one student chose to use a laptop. The two students with older cell phones partnered with other students and used paper and pen. As I lectured, students entered notes on their handheld devices and all were able to access the Internet to look up homework questions. The response was enthusiastic.

There is a lot to consider when using technology in the classroom. Teachers have various degrees of technological knowledge and schools have mixed classroom technology depending on the curriculum and available funds. The only constant seems to be the students’ knowledge and use of handheld devices. For teachers who are reluctant to use technology in the classroom, start off small. After learning objectives and goals are established then figure out the most appropriate technology to use. Also, realize that students will probably be very excited at the idea of using handheld devices in the classroom and therefore more attentive and motivated.

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Cell Phone Questionnaire

Please check one: Student Teacher

1. Do you think cell phones should be allowed in the college classroom?

Yes No

If yes, please check all that apply:

- For emergencies
- To keep in touch with work
- To keep in touch with family and friends
- To get updates
- Boredom
- For teaching
- Other

Comments: _____

If no, please check all that apply:

- It's rude
- It's not necessary in the classroom
- It disturbs the class, whether the ringer is on or not
- It can be used to cheat
- Other

Comments: _____

2. Do you agree that a ringing cell phone disturbs the class?

Yes No

Appendix 2

Survey Data of Students and Teachers Opinions about Cell Phones in the Classroom

Students	99				
Do you think cell phones should be allowed in the college classroom?					
Yes	92	92.93%	No	7	7.07%
For emergencies					
	95	95.96%			
To keep in touch with work					
	64	64.65%			
To keep in touch with family and friends					
	55	55.56%			
To get updates					
	33	33.33%			
Boredom					
	24	24.24%			
For teaching					
	41	41.41%			
Other uses for the classroom					
	15	15.15%			
It's rude					
	12	12.12%			
It's not necessary in the classroom					
	8	8.08%			
It disturbs the class, whether the ringer is on or not					
	10	10.10%			
It can be used to cheat					
	11	11.11%			
Other reasons they don't belong in the classroom					
	3	3.03%			
Do you agree that a ringing cell phone disturbs the class?					
Yes	88	88.89%	No	12	12.12%

Teachers	17				
Do you think cell phones should be allowed in the college classroom?					
Yes	7	41.18%	No	10	58.82%
For emergencies					
	8	47.06%			
To keep in touch with work					
	1	5.88%			
To keep in touch with family and friends					
	1	5.88%			
To get updates					
	1	5.88%			
Boredom					
	1	5.88%			
For teaching					
	4	23.53%			
Other uses for the classroom					
	1	5.88%			
It's rude					
	7	41.18%			
It's not necessary in the classroom					
	7	41.18%			
It disturbs the class, whether the ringer is on or not					
	9	52.94%			
It can be used to cheat					
	5	29.41%			
Other reasons they don't belong in the classroom					
	4	23.53%			
Do you agree that a ringing cell phone disturbs the class?					
Yes	17	100.00%	No	0	0.00%