Student Mobile Devices in Class: Disruptive or Manageable?

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Abstract

The genesis of this paper was two-fold: my own frustration in the classroom with how to deal with students' disruptive use of mobile technology devices and how these devices could be harnessed to motivate students and enhance learning. As the use of these ubiquitous mobile technology devices (i.e., cell phones, smart phones, tablets, laptops, and soon Google Glass™) has bourgeoned in academic settings, new challenges are faced by instructors and institutions of higher education. These challenges include classroom management, academic dishonesty, student academic performance, and sustained student attention. Some argue that these mobile technologies have no place in the classroom setting while others argue that mobile technologies are critical for safety and should also be incorporated in the classroom as a student instructional aid. This paper briefly examines whether college students' use of mobile technology devices is disruptive or manageable in the classroom.

Introduction

Rainie (2012) indicated that 18-to-24-year-olds are among the most frequent mobile digital device users. As the use of these ubiquitous mobile technology devices (i.e., cell phones, smart phones, tablets, laptops, and soon *Google Glass™*) has bourgeoned in academic settings, new challenges are faced by instructors and institutions of higher education. These challenges include classroom management, academic dishonesty, student academic performance, and sustained student attention. Some argue that these mobile technologies have no place in the classroom setting while others argue that mobile technologies are critical for safety and should also be incorporated in the classroom as a student instructional aid. Students are now digital natives who use these mobile devices first and foremost for communication (Atchley & Warden, 2012) but instructors are left grappling with how to handle these digital device distractions.

Tindell and Bohlander (2012) surveyed college about cell phone usage in the classroom. A majority (95%) brought their cell phone to class, 91% indicated that their cell phones were set to vibrate, 9% turned them off during class, and 92% sent or received a text message in class. Half of the respondents indicated that it was easy to text in class without the instructor noticing, while 90% believed they could text without instructor interference in a classroom of more than 100 students. Results also indicated potential academic dishonesty; 10% of the students surveyed had either sent or received a text message during an exam.

A disruptive technology (Christensen, 1997; Horn & Johnson, 2008) is an innovation that transforms and changes the existing ones by creating a new one that has simplicity, convenience, accessibility, and affordability for the user. Are student mobile devices a negative or positive technologies that are displacing the established technologies that instructors use in the classroom (i.e., PowerPoint, overheads, YouTube clips) or do they give students the opportunity to tune out instructor led lectures? Have instructors dismissed these as disruptive technologies by not incorporating practical applications in their classrooms? Should academic disciplines like Communication Studies start developing smart phone apps to actively engage college students in class? Like all disruptive technologies, it will take time for instructors and institutions to understand, manage, and recognize the perceived advantages and pitfalls to broader implementation in the classroom. This paper briefly examines whether college students' use of mobile technology devices is disruptive or manageable in the classroom.

Challenges

Richtel (2012) reported that teachers believe that constant use of digital technology hampered their student's attention spans and ability to succeed in class. On the first day of each semester, many instructors inform students that cell phones and tablets must be turned off when class begins and should remain so until the end of class. The negative consequences for students are that they will lose points towards their final grade. The words "final grade" tends to get their attention and this policy often receives its fair share of criticism from both students and other colleagues. It appears that more and more students seem helpless to be detached from their mobile devices.

Atchley and Warden (2012) applied the standard definitions of addictions to cell phone use. Their definitions included: tolerance (decreased value that then requires more use to get the same effect), withdrawal (if you do not have access to your addition), increased use, inability to cut back on use, reducing competing behaviors, and continuing the behavior despite risks and consequences. One hundred college students were asked to imagine receiving a message that read, "text me when you can." Participants then evaluated options to text back immediately (with a small monetary reward) or wait to text later (with a bigger monetary reward). Texting immediately was far more important than extra money. Participants were willing to wait to respond but they were not willing to wait that long.

High profile gun violence at U.S. colleges (i.e., Northern Illinois University and Virginia Tech) brought support for the use of mobile devices to provide emergency communication directly to students and informing them about the emergency and how to respond. While this use of technology by students has been hailed as improving school safety (Obringer & Coffey, 2007), research has also indicated that cell phones can increase confusion in emergency situations and prevent a consistent message (National School Safety and Security Services, 2010). A survey of school-based police officers indicated that the use of cell phones by students decreases safety during a crisis (National Association of School Resource Officers, 2002).

One concern involves the distraction caused by the use of cell phones during class. Campbell (2006) found that students and faculty view the ringing of cell phones in class to be a serious problem. The detrimental effect of ringing cell phones on learning was experimentally tested by End, Worthman, Mathews, and Wetterau (2010); who found that the ringing of a cell phone during a video presentation diminished learning of the interrupted information. Beyond the issue of the distraction caused by ringing cell phones, it is clear that if students are spending time texting or updating social media sites, they are not paying attention to the class lecture.

Rosen, Lim, Carrier, and Cheever (2011) found that student memory for a 30-minute videotaped lecture was impaired for a high text message group that sent or received an average of 19 texts during the lecture compared with a low text message group, who received less than two, on average. In addition to the student doing the texting, it is also possible that other students, or the instructor, can be distracted by a student's texting. This behavior then causes problems for classroom management in general.

Another, perhaps even greater, concern relates to academic dishonesty. The media have reported a number of cases of students using cell phones to cheat. For example, 12 students at the University of Maryland were caught cheating during an accounting exam (Anonymous, 2003). These students were apparently sent the answers to the multiple-choice exam by students outside the test who were able to access the answer key that was posted online once the test began. At Prairie View A&M University, 11 nursing students admitted to cheating on a comprehensive exam by texting students who had already completed the test (Tolson, 2008). The mobile technologies available allows an individual to send answers to multiple-choice questions to other test takers or send pictures of test questions to friends (outside the test), who send back the response. With web-browsing phones, it is even possible to look up answers to questions directly, using sites such as Wikipedia or ChaCha.com (Moran, 2008).

Wei, Wang, and Klausner (2012) studied whether texting during class impacts students' cognitive learning. Results indicated that college students from a small Northeast university (97 women, 93 men, age range: 18-49 years) showed that the participants' self-regulation was negatively related to their text messaging during class. This indicated that students with a high level of self-regulation are less apt to text during class and more likely to keep their attention on classroom learning. Sustained attention was found to mediate the effects of students' texting, indicating that frequent texting during class reflects students' low self-control in classroom learning that could significantly influence cognitive learning.

Clayson and Haley (2013) studied the dilemma of classroom multitasking and texting in two different college marketing education classes. The 300 participants surveyed, indicated that they received an average of 37 texts per day and initiated about 16. More than 90% of the respondents admitted to receiving texts while in class, and 86% reported texting someone from class. Interestingly, 47% of the students believed they could follow a lecture and text at the same time however respondents who did text within marketing classes received lower grades than their non-texting class peers. Generally texting frequency was generally unrelated to GPA. Results indicated that 61% felt that they should not text during class but 56% of the respondents had a class that banned texting, and 49% reported that they continued to text anyway. The results were consistent at the two universities. The study outcomes indicate flaws in the notion that students can successfully multitask. This study indicated that handling cognitive interactions may be decreased when multitasking (i.e., with mobile devices). Clayson and Hayley (2013) observed that many of the students in their study appeared to compulsively text as if it was an addiction.

Jackson (2013) surveyed 102 undergraduate students (aged 17-22) about technology use, websites surfed during class, perceptions about using mobile devices, awareness of cheating, and effective/ineffective class policies. Participants' self-report results indicated that 57.8% used their mobile phones in both academic and personal spaces, 50% used their Ipad or tablet, and 61.5% used their laptops. The top academic websites visited in class included the institution's learning management system, Google, and email; nonacademic websites included Facebook, Yahoo, and Twitter. While 25% of participants regarded cell phones as a helpful learning tool, 76% found their use distracting. Laptop use in class was seen as a distraction by 8% of participants, while 90% regarded them as a helpful learning tool. The participants outlined their negative perceptions about mobile technology in the classroom: 70% found it distracting to themselves, 31% found it distracting to others, and only 6% found it disrespectful to the instructor. The participants described the types of cheating they were aware of using mobile technology devices in test situations: 25% for looking up answers on a phone in class or in the bathroom, 14% texting for answers within the class, 8% texting for answers outside the class, and 0.09% taking a picture of the exam for other students.

Harnessing Mobile Devices in the Classroom

Proponents claim that these mobile devices can be used to enhance classroom learning. Some of the useful features advocated include the ability to access information, record data, and create podcasts (Pascopella 2009; Schachter 2009). Cell phones can also be used as a way to gather data for classroom experiments and demonstrations (Cheung 2008), to enhance interactivity in large classroom settings (Scomavacca, Huff, & Marshall 2009), and serving as an alternative to the "clickers" used in personal response systems. Ferriter (2010) also argued that these personal mobile technologies may be able to replace materials in short supply, such as dictionaries, timers, and digital cameras.

Williams and Pence (2011) are advocates of college students using their smart phones in chemistry classes because of the portability and increasingly powerful computing ability. These smart phones can be used to access information online, provided by chemistry publishers (i.e., news stories, updates on publications, abstracts, or full texts). Is there an app for that? Williams and Pence point to existing smart phone apps used in chemistry classes: the American Chemical Society app for searching over 860,000 scientific research articles, three-dimensional renderings of the RCSB Protein Databank, ChemMobi provides information about over 30 million chemicals, and ChemSpider provides information about 256 million chemical compounds. Williams and Pence suggest that smart phones used in the classroom are easy to access and are useful because today's college students bring them everywhere. Chemistry instructors are currently experimenting with podcasts designed for general chemistry lab instruction as well as for pre-service teachers in biochemistry and science.

Nielsen and Webb (2011) coined the term 'Generation Text' for providing a book full of tactics, activities, and strategies to use students' preferred method of communication with a basic text-enabled cell phones in the classroom. They point out that cell phones can be used to remind students to study, to take notes, provide instant on-demand answers, research, capturing oral and video reports, and responses to polls/quizzes.

College student participants (Jackson, 2013) shared their positive uses of laptops: 61% for note-taking, 41% for looking things up, 35% access to class materials, and 9% for an eco-friendly alternative that saves paper.

Classroom Management

Tindell and Bohlander (2012) suggested the importance of explicit class policies to address the use of student mobile devices. They suggest that a policy be clearly articulated in the course syllabus.

Their colleagues' policies included: confiscating the device until the end of class, having the professor answer a cell phone call, giving a student an "absence from class" if the student chooses to text during class. Tindell and Bohlander (2012) also outline more extreme policies of zero tolerance of mobile devices during exams. Students are instructed before the exam to turn off their devices and put them away (where they cannot be viewed); if a mobile device is heard or seen during the exam, the offending student is given an automatic zero on the exam. The authors also warn that having a written mobile device policy is not enough. Instructors must also enforce the policy to be effective. Instructors should monitor the use of mobile devices, pointing out that use will not be tolerated. The use of mobile technologies in the college classroom is an issue that academic colleges, departments, and institutions cannot longer ignore.

Jackson (2013) recommended discussing early in the semester about the distraction that misuse of mobile technologies have on learning and student satisfaction, explaining the instructor's rationale for banning the devices in terms of the learning environment, reinforcing communication etiquette in class, and telling students in advance that there will be a short after the lecture to use their devices for personal reasons. Parkes and Harris (2002) noted that the class syllabus is also an object of learning for students, including the policies and rationales aimed at minimizing distractions.

Student participants were asked for suggestions about classroom policies for mobile technology devices in the classroom (Jackson, 2013). Effective instructor policies included: a student's own choice about whether to use the technology academically, restricting use during exams, clear policies about what mobile devices allowed, having students put away devices during certain parts of the class, and banning all cell phones.

Bloom (2007) created a community-building system of rewards for the rest of the class. The student texting or surfing on the web must bring in snacks for the rest of the class on the following class day. His observation was that if students could afford a cell-phone package, they could provide treats for about 30 classmates. The community-building process develops in earnest when a cell phone actually rings in class, celebration and cheering from other students ensues (over the prospect of an upcoming snack next class).

Conclusion

I still struggle with how to incorporate and harness mobile technology devices in the classroom. I was educated via the transmission model that assumes that learning is mainly dependent on the teacher communicating to the multiple receiver students. I am striving to get better at the constructivist model of teaching and learning that motivates students to be active agents of their own learning. Perhaps these mobile technologies are the communication channels I could use to facilitate a more dynamic interaction for my students. I have found that students have invested time and money into learning how to navigate their devices, that I now consider modern digital 'technologies of the self' (Foucault, 1988). Mobile technology devices have replaced the personal computer as a learning and communication channel for students. The Web is now older than many of the students in classes (Jackson, 2013). Students are attached to their devices and they "have never known a world without technologies, often take them for granted, and integrate them in their daily lives" (Caruso & Salaway, 2007, p. 1). These devices are now powerful, simpler to use, accessible, less expensive, and are currently impacting the traditional classroom. If managed and utilized wisely by instructors, they have the opportunity to create a more student-centric environment to foster students' curiosity for research, real time updates, and even discipline specific smart phone apps. As a discipline, Communication Studies could provide leadership on teaching students how to integrate mobile technologies in the classroom in civil, ethical, and conscious ways for in class-specific purposes. Students need to be involved in the conversation about appropriate technology use and what to do if the rules are broken. This could help to alleviate the unpleasant instructor-student battle of habitual, automatic, and disruptive student mobile device use in the classroom to facilitate more active, mindful learning environments.

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