Routledge
Taylor & Francis Group

ARTICLES

The Use and Abuse of Cell Phones and Text Messaging in the Classroom: A Survey of College Students

Deborah R. Tindell and Robert W. Bohlander
Wilkes University

As the use of mobile devices, such as cell phones, has proliferated in academic settings in recent years, new challenges are faced by institutions of higher education and their faculties. The authors surveyed 269 college students from 21 academic majors at a small northeastern university to gain a better understanding of the frequency and manner in which cell phones are used in college classrooms. Focusing on the use of text messaging in the classroom, students reported on their own and others' use of cell phones. It was found that 95% of students bring their phones to class every day, 92% use their phones to text message during class time, and 10% admit they have texted during an exam on at least one occasion. The majority of the students surveyed believe that instructors are largely unaware of the extent to which texting and other cell phone activities engage students in the classroom. These activities include browsing the Internet, sending pictures, or accessing social networking sites. The authors discuss these and other findings and their implications for issues of classroom management and academic dishonesty.

Keywords: academic dishonesty, classroom management, mobile phones, student behavior, texting

From spit balls to passing notes in class, issues of classroom management have challenged educators since the introduction of formal education. One factor that plays a role in this equation is the introduction of cell phones into the classroom. Clearly, this is a heated topic: Some argue that cell phones have no place in a classroom setting and others argue that cell phones should be allowed both for safety reasons and as an instructional aid.

After terrifying school incidents such as those at Northern Illinois University and Virginia Tech, where students were victims of gun violence, many individuals believe that cell phones provide a necessary emergency communication function. In an emergency, text messages can be sent directly to students' phones informing them of the source of the emergency and giving instructions for how to respond. In a poll of high school principals, 73% indicated that they agreed that cell phones improve school safety (Obringer and Coffey 2007). Others argue that cell phones only add to confusion in an emergency situation, and prevent a consistent message (National School Safety and Security Services 2010). In a survey of school-based police officers, 68% indicated that the use of cell phones by students decreases safety during a crisis (National Association of School Resource Officers 2002). Cell phones may also provide a false sense of security to college students who may then be more likely to put themselves into a dangerous situation, feeling more confident while talking on their phone (Nasar, Hecht, and Wener 2007). Just the opposite may actually be true, however, as the phone offers no real protection and instead makes the student less aware of his or her surroundings, making him or her more vulnerable.

Many cell phone proponents claim that these mobile devices can be used to enhance classroom learning. Some of the

Correspondence should be sent to Deborah R. Tindell, Wilkes University, Department of Psychology, 84 W. South St., Wilkes-Barre, PA 18766, USA. E-mail: deborah.tindell@wilkes.edu

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) and enhance interactivity in large classroom settings (Scomavacca, Huff, and Marshall 2009), serving as an alternative to the "clickers" used in personal response systems. Ferriter (2010) also argued that cell phones may be able to replace materials in short supply, such as dictionaries, timers, and digital cameras.

However, not everyone is in agreement that cell phones are a positive addition to the classroom. 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 et al. (2010). They found that the ringing of a cell phone during a video presentation impaired 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, they are not paying attention to the class lecture. In an attempt to gain some experimental data on the effect of texting during class, Chaklader and Bohlander (2009) asked college students to respond to zero, one, two, or three text messages while viewing an instructional video. Test performance was significantly lower for the students who received two or three text messages, indicating that the ability to focus on and learn the material was negatively impacted by the texting. Similarly, Rosen et al. (2011) found that 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 technology available through cell phones 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).

Colleges are now struggling with how to implement effective policies regarding cell phone use. In a study that addressed the perception of cell phones in a college classroom, Campbell (2006) found that college students and faculty tend to have negative attitudes toward cell phones in the classroom and are in favor of formal policies governing their use. However, colleges and universities do not tend to ban the use of cell phones as a policy, but rather leave it to the discretion of individual faculty, who have inconsistent policies. Many are not sure how to handle the issues, and some may not even be aware there is a problem (Dodds and Mason 2005).

Researchers have begun to address the need for more research in this area. Braguglia (2008) examined the use of cell phones in a college setting. Over half of the students in the survey reported that they "interact with their cell phone during class time in every class they attend" (Braguglia 2008, 59), but the vast majority did not feel that the use of their phone interfered with learning. This study was limited to business majors, however, and did not focus on classroom management issues, but rather dealt with the overall use of phones by students. Bjorklund and Rehling (2010) did not study the use of cell phones directly, but rather examined various forms of classroom incivility. According to the students in their survey, the ringing of cell phones and text messaging in the classroom are both frequent occurrences and are viewed as quite uncivil. A pilot study conducted by Burns and Lohenry (2010) surveyed faculty and students in the health sciences to determine the perception of cell phone use during class. About 40% of the students indicated that they used their phones during class, and this activity caused a distraction for about 85% of the students. It seems clear that students are using their phones during class, and that this behavior is potentially disruptive. No study to date has surveyed students across disciplines to assess the use of cell phones in the college classroom, nor has any study specifically examined the incidence of using cell phones for purposes of academic dishonesty at the college level.

In the present study we attempted to assess the extent to which cell phones, and text messaging, are used in the college classroom. Students were asked to report on their own use of cell phones in class, as well as their observations of others. Specifically, students were asked to report about the use of phones before and during class, as well as during exams. They were also asked questions regarding how distracting they felt that text messaging was to themselves and other students, and whether there were characteristics of the classroom or instructor that made it easier to text in class. Additionally, students were asked what they believed an effective policy for cell phones would be. This study was conducted in order to gain a better understanding of the use and abuse of cell

phones in a college classroom setting, and to potentially aid in policy-making decisions.

METHOD

Participants

Students from a small private university in northeastern Pennsylvania participated in this study. There were 153 female and 116 male students, ranging in age from 18 to 50 years (M age = 20.81 years, SD = 3.08 years). Students were invited to participate in the survey by one of their instructors and told they would be entered into a random drawing to receive $50.00 as an incentive to participate. The selection process produced a diverse sample with respect to academic major, with 21 different majors, representing every college at the university. The students were also evenly representative of class standing, with 65 first-year, 62 sophomore, 74 junior, and 63 senior students (five students chose not to indicate their class standing).

Materials

The prescreening materials were presented using an online participant management system developed by Sona Systems (Estonia). This system collected the students' personal information and informed consent. It then redirected them to an external survey created using SurveyMonkey. In addition to basic demographic questions such as age, sex, and class standing, the survey contained 26 questions related to cell phone use. These questions are listed in the Appendix.

Procedure

In order to obtain a representative sample, we sent an email to all full-time faculty at the university, requesting their assistance in obtaining participants. Nineteen instructors agreed to participate, inviting students from 50 different courses. Students from 36 of those courses chose to participate.

Students were given a two-week period of time in which they could participate. They were initially directed to the online participant system, through which they were told that the study involved the use of cell phones in a college classroom. They were required to give their name and identify the course in which they learned about the survey. This information was necessary in order to determine eligibility for the prize drawing, and to obtain appropriate informed consent. Once the participants agreed to participate, they were given a link to access the actual texting survey on an external survey site. No information was transferred to the survey site, preventing personally identifying information from being connected to specific data from the study.

The survey began with a confirmation question regarding willingness to participate. Only students who responded with the affirmative were given the actual survey questions.

Participants were given the option to skip any questions they did not want to answer. When answering the survey, students were instructed to define text messaging as "the sending of text information over an electronic handheld device, such as a phone." After completing the survey, students were thanked for their participation and told whom to contact with any additional questions or concerns.

RESULTS AND DISCUSSION

Because students could choose to omit questions if they desired, the sample size varied by question. Whenever the size differed from the total of 269, it is noted either in the text or in the table. For the open-ended questions, two independent reviewers categorized each response. The independent reviews led to fairly consistent categories and the resulting percentages never deviated by more than 2%. When there was any inconsistency or question regarding the classification, the reviewers discussed the response and made a joint decision.

Of the 269 respondents, 265 (99%) indicated they had a cell phone that could be used for text messaging, and almost all respondents (97%) said they had sent standard text messages. The vast majority (95%) said they always bring their phone to class, and all students indicated that while in class their phones were either set to vibrate (91%) or turned off (9%).

It is clear that college students are using their cell phones in the classroom. Almost all (97%) admitted to sending or receiving text messages while waiting for class to begin. About 92% admitted that they have sent or received a text message in class at least once or twice, and 30% do this every day. Students also notice the texting done by others in the classroom, with 97% of students indicating they have noticed this at least once or twice (see table 1).

TABLE 1
Percentage of Students Engaging in Texting While in the Classroom

Survey Item	Frequency				
	Never	Once or Twice	On Occasion	Almost Daily	Daily
Student has seen another texting					
before class ($n = 269$)	0.0	1.5	9.3	28.6	60.6
during class ($n = 269$)	0.4	4.5	22.3	27.1	45.7
during exam ($n = 269$)	67.3	19.7	11.2	0.4	1.5
Student has him/herself texted					
before class ($n = 267$)	3.4	11.2	40.1	24	21.3
during class ($n = 268$)	9.3	20.9	39.6	16.0	14.2
during exam ($n = 267$)	89.9	8.2	1.5	0.4	0.0

TABLE 2
Perceived Difficulty of Texting Without Instructor's Awareness

How Easy is it to Text Without the Instructor Being Aware?	Perceived Difficulty						
	Don't Know	Very Easy	Somewhat Easy	Neutral	Somewhat Difficult	Very Difficult	Depends on Class
During class ($n = 267$)	1.9	22.8	24.3	11.2	4.1	1.1	34.5
During exams ($n = 236$)	26.7	2.1	7.2	6.4	20.8	21.2	15.7

Note: Numbers indicate the percentage of students.

However, students do not feel that instructors are aware of their texting behavior. Almost half of the respondents indicated that it is easy to text in class without the instructor being aware. Another third of the respondents said that the difficulty depends on the class, with it being easy in some and more difficult in others (see table 2). When asked to complete the following statement, "If college instructors only knew _____ about text messaging in the classroom, they would be shocked," students most commonly responded (54%) that instructors would be shocked if they knew how much texting goes on. So, students are consistent in their views that instructors are unaware of the extent to which texting occurs. However, it is not equally easy to send and receive. Students were fairly consistent in the view that it was easier to receive messages without being noticed than to send them (see table 3). Students apparently do not want to risk a confrontation with the professor, and so are less likely to text in class if the instructor has a set policy and seems to care whether the students are texting, but if the instructor turns his or her back to the class, or focuses too much on his or her own lecture, students indicate that it is easier to text in class (see table 4).

The size of the classroom also has a big impact on how easy it is to send or receive text messages without being noticed. The vast majority (90%) of respondents believed they could text without the instructor being aware in a classroom that had more than 100 students, and about half felt they could go undetected in a class with fewer than 25 students. This percentage decreased to only 14% if the class had less than 12 students. Consistent with this finding, when asked to specify what classroom characteristics make it easier to text, participants most frequently referred to the size of the classroom, indicating that it is easier in large classrooms,

with more students. This seems to be particularly true when the room is crowded and there is an obstructed view from the instructor to the texting student (see table 5).

With the apparent widespread use of cell phones in class, one concern involves the potential for academic dishonesty. About 10% of the students surveyed indicated that they have either sent or received a text message during an exam (see table 1). Although most of those students do not admit to transmitting information about the exam (see table 6), the potential for abuse is evident, with about 9% of the respondents indicating that it is easy to text during an exam without the instructor's knowledge, and an additional 16% stating that it depends on the class, but is easy in some (see table 2). It is interesting to note that 33 students chose not to answer this question, even though one of the options allowed for a response of "I don't know." Failure to answer could be seen as a reflection of the respondents' desire to either not risk self-incrimination, or to not reveal to faculty that texting during an exam is a possibility.

Another concern is the distraction caused by the use of cell phones in the classroom. Even though all students indicated that their phones are either turned off or on vibrate while they are in class, most students reported that they have been in class when a cell phone has rung, and the majority have had their own phone ring in class (see table 7).

Many who answered the open-ended question, "Do you think text messaging causes any problems in the classroom," did not feel there were any problems caused by texting. However, most felt there were problems, including a negative impact on classroom learning for the person who is texting, and distraction for those sitting nearby (see table 8). Although students may admit to some of the negative impact of cell phones, they are reluctant to support a policy that completely

TABLE 3
Perceived Relative Difficulty of Sending or Receiving Texts

Is it Easier to Send or Receive?	Perceived Relative Difficulty					
	Don't Know	Much Easier to Send	Somewhat Easier to Send	Equal	Somewhat Easier to Receive	Much Easier to Receive
During class ($n = 235$)	6.0	1.7	1.3	14.5	18.7	57.9
During exams ($n = 237$)	35.9	0.0	2.1	4.6	15.6	41.8

Note: Numbers indicate percentage of students.

TABLE 4
Most Common Open-Ended Responses to the
Question "What instructor characteristics make it
easier to text message during class?"

Response Category	Percentage
Instructor does not have specific policy and doesn't seem to mind texting behavior; more laid back and relaxed	32.9
Instructor stays in front of class, without circulating	16.8
Instructor turns back to class to write on board	19.9
Instructor focuses on computer or projection screen; doesn't make eye contact	12.4
Instructor focused on lecture, and not on the students' behavior	14.9
Instructor doesn't require students' participation; noninteractive	10.6
Instructor doesn't gain the interest of the students, making them want to text more	4.3
Instructor allows time for group discussion	1.9

Notes: n = 161. Students could have more than one response.

forbids their use (see table 9), and the majority believe they should be allowed to use their phone in class as long as they do not disturb anyone else (see table 10). About a third of the respondents chose to answer the open-ended question regarding ideas for cell phone policies. Their ideas are presented in table 11.

It is clear that phones are being used in the classroom to send messages, and to cheat. The findings are consistent with the anecdotal evidence reported by the media, regarding cheating on college exams (e.g., Tolson 2008; Anonymous 2003). The data can also be compared with the data Common Sense Media (2009) obtained using a teenage sample. A greater percentage of the college sample reported owning a cell phone (99% vs. 83%) and using it at school (95% of college sample stated that they take them to class whereas 65% of the teenage sample stated that they use them at school). Whereas only 3% of our sample directly admitted to using

TABLE 5
Most Common Open-Ended Responses to the
Question "What characteristics of the classroom
layout make it easier to text message during class?"

Response Category	Percentage
Large classroom/lecture hall	41.4
Barriers between student and faculty (this included other desks, other students, pillars, purses, computers, etc.)	25.5
Room has large, lab-style tables, rather than small desks	17.2
Large number of students	15.9
Students crowded together	14.0
Ability to sit near a wall, corner, or in the back of the room	13.4
Instructor is far away from students	7.6
Seating is in traditional row/column configuration (seat in front blocks the one behind)	5.7
Seating is stadium style	5.7

Notes: n = 157. Students could have more than one response.

TABLE 6
Percentage of Students Texting Exam Information

Type of Message Texted	Frequency			
	Never	Only Once	Few Times	Regularly
SENT exam information to another (n = 259)	97.3	1.9	0.4	0.4
RECEIVED exam information from another (n = 260)	97.7	1.5	0.8	0.0

Note: Ten students chose not to answer the question about sending exam information and nine did not answer the question about receiving it.

text messaging to cheat on an exam, 35% of students in the Common Sense Media poll indicated that they had cheated using a cell phone. Not all of the cheating reported in the Common Sense Media poll was attributed to text messaging, but 25% still reported cheating using text messaging. Other instances of cheating included accessing stored information using a phone or searching the Internet for answers. These methods were not directly assessed in the present study. It appears that although college students are more likely to have possession of their phones in class than are high school students, they are less likely to use them to cheat on an exam. It is not clear whether this difference is due to a decrease in cheating from high school to college, whether the students who cheat in high school are less likely to go to college, or whether the college students are just less likely to report the cheating that occurs. Clearly more research is needed in this field. In order to more adequately represent all college populations, follow-up studies should survey students from other types of institutions, such as community college or large university settings.

This data, combined with that already obtained, can provide factual information to faculty about cell phone use and student attitudes, and can inform their policy decisions regarding cell phones in their classes. Most certainly, student safety is a paramount issue at all grade levels. A strong argument could be made in favor of retaining cell phones in the event of an emergency. These safety concerns must be considered if any practical cell phone policy is to be created. The installation of classroom landline telephones and intercom systems—present in many educational settings

TABLE 7
How Often Do Cell Phones Ring in Class?

Phone has "Gone off" During Class	Frequency		
	Never	At Least Once	At Least a Few Times
Another student's (n = 269)	16.0	75.5	8.6
Own (n = 268)	46.6	51.5	1.9

Note: Numbers indicate percentage of students.

TABLE 8
Open-Ended Responses to the Question "Do you think that text messaging causes any problems in the classroom?"

Response Category	Percentage
Student sending text is affected through loss of attention and/or poor grades	31.5
There are no problems caused by texting in class	28.9
Texting causes a distraction to those sitting nearby	24.7
Phones ringing/vibrating is a problem	12.1
Texting is a problem during exams	6.3
Texting annoys the instructor	3.2

Notes: n = 190. Students could have more than one response.

these days—could be considered as a secure alternative to the in-class possession of individual cell phones by students. This alternative allows policymakers to focus on educational, rather than safety, concerns about cell phone possession and use.

So, what can individual faculty members do to address the concerns related to the use of cell phones? It is suggested that a cell phone policy be clearly articulated in the course syllabus. In some courses, cell phones may be able to contribute in some way to student learning, and in this case, faculty may choose not to ban their use. Otherwise, we recommend that students be told that their cell phones must be turned off or put on "silent" during class, and put away. Special circumstances that require the student to receive notification during class can be prearranged with the instructor.

Some specific cell phone policies that our colleagues have found to be effective include the following. If a student is seen texting, or if a phone rings or vibrates during class, the phone is confiscated until the end of class. Other professors have the policy that if a phone rings in class, the professor gets to answer it. Attendance can also be directly impacted. If a student chooses to text during class, he or she can be

TABLE 9
Responses to the Question "What do you think should be the policy on cell phone use during class?"

Response	Percentage
Cell phones are not permitted in the classroom under any circumstances	0.7
Cell phones must be turned off and placed on the desk in front of each student	1.9
Cell phones may be kept on the student, but must be turned off	8.6
Cell phones may be kept on the student, but must be placed on vibrate	64.2
Cell phones may be kept on the student, and may be left on ring, but not used	0.4
Cell phones may be used to send and receive text messages during class as long as this is not distracting other students or is not exam material.	24.3

Note: n = 268.

TABLE 10
Responses to the Question "Do you think students should be allowed to text message during class?"

Response	Percentage
Yes, I should be allowed to send a text any time I want	13.8
Yes, I see no problems with using a cell phone to text in class as long as I am not disturbing any other students	61.6
Yes, but only in emergency situations	41.4
Yes, but only if the message pertains to class discussion	4.1
No, it is never okay to send a text message during class	11.6

Notes: n = 268. Multiple responses were allowed.

considered absent for that day. Bloom (2007) suggested a creative policy for dealing with the ringing of cell phones. In a system that rewards the rest of the class, the owner of the offending phone (including the instructor) must bring in snacks for the rest of the class the following class day.

The concern related to the use of cell phones during exams may require more extreme policies. One strategy that we have tried effectively involves zero tolerance for cell phones during exams. The students are reminded before the exam to turn their phones off and put them away, where they cannot be seen. If a phone is heard or seen during the exam, the offending student receives an automatic zero on the exam. Because the students are told to put their phones away, any violation is assumed to be an attempt to cheat. We have found that students do not object to this policy, and we have had no incidents related to cell phones during exams since implementing the policy.

Based on student responses to the Common Sense Media poll and the present research, it appears that students are not willing to simply give up their cell phones in class and would

TABLE 11
Most Common Student Responses to the Open-Ended Question Regarding Ideas for Good Cell Phone Policy

Response Category	Percentage
No policy is needed/policy wouldn't work	9.7
Extra restrictions are needed during exams	19.4
During class phones should be	
Turned off unless emergency	3.2
On silent	16.1
On vibrate	29.0
Okay, as long as not disturbing others	5.4
Texting During class should be	
Not allowed	1.1
Allowed for emergencies only	7.5
Allowed if not disturbing anyone and/or during breaks	23.7
Allowed (no conditions specified)	7.5
Phone can be taken from the student if necessary	6.5
Phone cannot be taken from student	7.5
If disturb class, can be asked to leave/counted as absent	3.2

Notes: n = 93. Students could have more than one response.

continue to try to use them even if classroom policies banned their possession or use. When students understand the need to have a cell phone policy and can help to set that policy for a class, they may be more likely to comply. Data, such as that found in our survey, can be shared with the students, so that they understand the extent of the potential problem. It appears that many of the offending students may not be aware that their behavior is causing a distraction for their classmates, or that cheating could be a problem. Given the additional information, the students may be more likely to comply with an existing policy or help negotiate an alternative policy they would be willing to follow.

Having a cell phone policy in place is not enough, however. Faculty must enforce the policy for it to be effective. Individual instructors must monitor the use of cell phones, making it clear that abuse will not be tolerated. Clearly the use of cell phones in the college classroom is an issue that academic institutions cannot ignore, and it demands action by faculty to ensure an effective learning environment for all students.

ACKNOWLEDGMENT

REFERENCES

Anonymous. 2003, January 31. University students admit to using cell phones to cheat. *USA Today*. http://www.usatoday.com/tech/news/2003-01-31-phone-cheats_x.htm (accessed November 2, 2011).

Bjorklund, W., & D. L. Rehling. 2010. Student perceptions of classroom incivility. *College Teaching* 58: 15–18.

Bloom, A. 2007. Making cell phones in the class a community builder. *Teaching Professor* 21(3): 4.

Braguglia, K. H. 2008. Cellular telephone use: A survey of college business students. *Journal of College Teaching & Learning* 5: 55–61.

Burns, S. M., & K. Lohenry. 2010. Cellular phone use in class: Implications for teaching and learning a pilot study. *College Student Journal* 44: 805–810.

Campbell, S. W. 2006. Perceptions of mobile phones in college classrooms: Ringing, cheating, and classroom policies. *Communication Education* 55: 280–294.

Chaklader, A., & R. W. Bohlander. 2009, March. The effects of text messaging on attention. Paper presented at the meeting of Eastern Psychological Association, Pittsburgh, PA.

Cheung, S. L. 2008. Using mobile phone messaging as a response medium in classroom experiments. *Journal of Economic Education* 39: 51–67.

Common Sense Media. 2009, June 18. Hi-tech cheating: Cell phones and cheating in schools: A national poll. http://www.commonsensemedia.org/hi-tech-cheating (accessed July 15, 2009).

Dodds, R., & C. Y. Mason. 2005. Cell phones and PDA's hit K–6. *Education Digest* 70: 52.

End, C. M., S. Worthman, M. B., Mathews, & K. Wetterau. 2010. Costly cell phones: The impact of cell phone rings on academic performance. *Teaching of Psychology* 37: 55–57.

Ferriter, W. M. 2010. Cell phones as teaching tools. *Educational Leadership* 68(2): 85–86.

Moran, C. 2008. Cellphones, handy tools for emergency alerts, could be used for cheating during tests. *Chronicle of Higher Education* 5: A15.

Nasar, J., P. Hecht, & R. Wener. 2007. "Call if you have trouble": Mobile phones and safety among college students. *International Journal of Urban and Regional Research* 31: 863–873.

National Association of School Resource Officers. 2002. Final report on the 2nd Annual National Survey of School-based Police Officers. http://www.schoolsecurity.org/resources/ (accessed February 2, 2011).

National School Safety and Security Services. 2010. Cell phones and text messaging in schools. http://www.schoolsecurity.org/trends/cell_phones.html (accessed February 2, 2011).

Obringer, S. J., & K. Coffey. 2007. Cell phones in American high schools: A national survey. *Journal of Technology Studies* 33: 41–47.

Pascopella, A. 2009. From cell phone skeptic to evangelist. *District Administration* 45(10): 40–41.

Rosen, L. D., A. F. Lim, L. M. Carrier, & N. A. Cheever. 2011. An empirical examination of the educational impact of text message-induced task switching in the classroom: Educational implications and strategies to enhance learning. *Psicologia Educativa* 17: 163–177.

Schachter, R. 2009. Mobile devices in the classroom. *District Administration* 45(10): 31–36.

Scomavacca, E., S. Huff, & S. Marshall. 2009. Mobile phones in the classroom: If you can't beat them, join them. *Communications of the ACM* 52(4): 142–146.

Tolson, M. 2008, May 28. 11 Prairie View nursing students caught cheating on test. *Houston Chronicle*. http://www.chron.com/news/houston-texas/article/11-Prairie-View-students-caught-cheating-can-t-1655982.php (accessed November 2, 2011).

APPENDIX

Survey Questions Related to Cell Phone Use

Section 1: General Experience With Text Messaging
Do you have a cell phone that can be used for text messaging?

- yes
- no

What types of messages have you sent with your phone? (check all that apply)

- I don't send any type of text message
- standard text
- email
- Facebook/MySpace
- Twitter
- pictures

Do you bring your cell phone to class?

- yes, always
- yes, sometimes
- no, never

When you are in class, what is the typical status of your cell phone?

- my cell phone is turned off
- my cell phone is on vibrate
- my cell phone is set to ring

Section 2: Observation of the Use of Cell Phones by OTH-ERS.
Have you ever seen another student send or receive a text message while waiting for class to begin?

- no, I have never noticed this
- yes, I have noticed this once or twice before
- yes, I have noticed this occasionally
- yes, I notice this almost every day
- yes, this happens every day.

Have you ever seen another student send or receive a text message while class is in session?

- no, I have never noticed this
- yes, I have noticed this once or twice before
- yes, I have noticed this occasionally
- yes, I notice this almost every day
- yes, this happens every day.

Have you ever seen another student send or receive a text message during an exam?

- no, I have never noticed this
- yes, I have noticed this once or twice before
- yes, I have noticed this occasionally
- yes, I notice this almost every day
- yes, this happens every day.

Have you ever been distracted by another student's cell phone "going off" during class?

- No, this has never happened
- Yes, this has happened at least once.
- Yes, this happens frequently.

Section 3: Students' Own Use of a Cell Phone in the Class-room.
Has your cell phone ever "gone off" accidentally during a class because you forgot to put it on vibrate or turn it off?

- No, this has never happened because I never bring my cell phone to class.
- No, this has never happened, even though I bring my cell phone to class.
- Yes, this has happened once or twice.
- Yes, this has happened at least a few times.

Have you, yourself, ever sent or received a text message while waiting for class to begin?

- no, I have never done this
- yes, I have done this once or twice before

- yes, I have done this occasionally
- yes, I do this almost every day
- yes, I do this every day

Have you, yourself, ever sent or received a text message while class was in session?

- no, I have never done this
- yes, I have done this once or twice before
- yes, I have done this occasionally
- yes, I do this almost every day
- yes, I do this every day

Have you, yourself, ever sent or received a text message during an exam?

- no, I have never done this
- yes, I have done this once or twice before
- yes, I have done this occasionally
- yes, I do this almost every test
- yes, I do this every test

If you have SENT a text message during an exam, have you provided information about the exam to another student?

- Yes, but only once
- Yes, I have done this a few times
- Yes, I regularly do this during exams
- No, I have never done this

If you have RECEIVED a text message during an exam, have you received information about the exam from another student?

- Yes, but only once
- Yes, I have done this a few times
- Yes, I regularly do this during exams
- No, I have never done this

Section 4: Students' opinion about issues related to cell phone use in the classroom.
How easy is it to send or receive a text message in class without the instructor being aware?

- very easy
- somewhat easy
- neither easy nor difficult
- somewhat difficult
- very difficult

Is it easier to send or receive a text message in class?

- easy in some classes; more difficult in others
- I don't know, because I don't try to send text messages, nor do I notice it in others.
- It is much easier to send
- It is somewhat easier to send

- It is equally easy to send and receive
- It is somewhat easier to receive
- It is much easier to receive
- I don't know

How easy would it be to send or receive a text message during an exam without the instructor being aware?

- very easy
- somewhat easy
- neither easy nor difficult
- somewhat difficult
- very difficult
- easy in some classes; more difficult in others
- I don't know, because I don't try to send text messages, nor do I notice it in others.

Would it be easier to send or receive a text message during an exam?

- It would be much easier to send
- It would be somewhat easier to send
- It would be equally easy to send and receive
- It would be somewhat easier to receive
- It would be much easier to receive
- I don't know

In which of the following situations do you think a student could text message without the instructor being aware? (check all that apply)

- In no situations
- In a very large classroom (>100) only
- In a large classroom (>40) only
- In a relatively small classroom (<25)
- In a small classroom (<12)

Do you think that text messaging causes any problems in the classroom? If so, please state what those problems are in the space below.

Do you think cell phones should be allowed in the classroom? (check all that apply)

- Yes, always
- Yes, if using functions such as the calculator or calendar

- Yes, but not during exams
- Yes, if on vibrate
- Yes, but only turned off
- No, cell phones should not be allowed at all

Do you think that students should be allowed to text message during class? (Check all that apply)

- Yes, I should be allowed to send a text any time I want.
- Yes, I see no problems with using a cell phone to text in class as long as I am not disturbing any other students.
- Yes, but only in emergency situations (e.g., child care, or illness)
- Yes, but only if the message pertains to class discussion
- No, it is never okay to send a text message during class.

What do you think should be the policy on cell phone use during class?

- Cell phones must be turned off and placed on the desk in front of each student.
- Cell phones may be kept on the student, but must be turned off.
- Cell phones may be kept on the student, but must be placed on vibrate.
- Cell phones may be kept on the student, and may be left on ring, but not used..
- Cell phones may be used to send and receive text messages during class as long as this is not distracting other students or is not exam material.
- Cell phones are not permitted in the classroom under any circumstances.

Do you have any other ideas for a good policy on cell phone use? Please describe.

What instructor characteristics make it easier to text message during his or her class? List as many as you think are important.

What characteristics of the classroom layout make it easier to text message during class? List as many as you think are important.

Please complete the following statement, "If college instructors only knew _____ about text messaging in the classroom, they would be shocked."