Student Use of Cell Phones in the Classroom

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Abstract

Even though school rules state that students are not to use their cell phone during class, they still do. A quantitative study was conducted, surveying 54 students to determine the reasons why they use their cell phone during class instead of concentrating on their learning. Participants completed a survey in which they indicated how important a list of 15 possible reasons was to them. Results indicated that students were most likely to use their cell phone during class for social reasons such as to answer an incoming text message. Educational leaders must be aware of student behaviours and attitudes and be prepared to adapt policies as necessary in order to enhance student learning. Future research is suggested as technology advances and new challenges arise.
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Chapter One: Problem to be Investigated

Purpose of the Study

The problem being addressed in the present study is that even though school rules state that students are not to use their cell phones during class, they still do. Cell phone technology is ubiquitous (Bushweller, 2006) and its use has become an integral part of our society (Obringer & Coffey, 2007). Data from a United States national poll conducted in 2009 (Lenhart, 2010) suggested that 85% of teens had cell phones, an increase from 45% in 2004.

The purpose of the study is to find out why students choose to use their cell phones during class instead of concentrating on their learning. Understanding the reasoning behind student’s choices may provide the focus for educating students on how their choices affect their learning as well as the learning of others. As technology advances, educators must embrace it and find ways to evolve with it in order to enhance student learning.

Justification of the Study

Cell phone use by students during instructional class time has been found to be disruptive to the learning process of every student in the class (Gilroy, 2004; St. Gerard, 2006), and may lead to cheating (Pickett & Thomas, 2006; St. Gerard, 2006), bullying (Docksai, 2009; Pickett & Thomas, 2006) or other technological and etiquette concerns (Boucek, 2006; McCabe, 2009; Nordstrom, 2009). The cell phone may interrupt the concentration of the user of the cell phone as well as fellow classmates and the classroom teacher. When students use class time on off-task behaviour such as talking on the phone, chatting on social networking sites, text messaging, surfing the internet, listening to music, playing games, taking pictures or watching videos, they miss out on learning opportunities. The other students in the class may also miss out on learning opportunities as they become distracted by the commotion made by the cell phone. Foerde (2006), Fox, Rosen and Crawford (2009) and Bowman, Levine, Waite and Gendron (2010)
examined the influence of learning with distractions and found that when learning conditions included distractions, the quality of learning was affected.

Teenagers are spending increasing amounts of their time using technology (Diamanduros, 2007; Jenkins & Downs, 2007). According to an in depth on-line study of more than 2,000 teenagers across the United States who had cell phones, more than half viewed having a cell phone as the key to their social life (Casselano, 2008). Today’s teenagers view cell phones as their primary communication device (Tucker, 2009) and indicator of their social status and popularity (Casselano, 2008).

Nordstrom, Bartels and Bucy (2009) conducted a study predicting “uncivil classroom behaviour” (p. 74), such as text messaging and carrying on disruptive conversations. Briefly, the authors found that many of today’s students were socially isolated from their parents as their parents work long hours and live hectic lives. As a result, these students formed their views and behavioural expectations with their peers instead of with the guidance of their parents. Rules of conduct for the use of cell phones had therefore evolved without the influence of adults. The cell phone provided students with the opportunity to keep in touch with their friends, demanding that they are available and obligated to answer incoming calls and text messages at all times. The obligation to answer a ringing cell phone was found to be in conflict with school rules which do not allow use of cell phones during class.

Cell phones may be used inappropriately by students for cheating (Pickett & Thomas, 2006; St. Gerard, 2006). Students may be tempted to cheat by using the cell phone to take pictures of a test and forward it to a friend (St. Gerard, 2006). Students may also cheat by searching for answers to a test over the internet, texting their friends, or accessing previously
stored notes. Easy access to the internet on their cell phone may also tempt students to turn in plagiarised work.

Cell phone technology provides the student the opportunity for distractions and cheating, as well as the opportunity for abuse towards others. Docksai (2009) documented concern for the potential misuse of technology by taking pictures or videos of others to be uploaded for global sharing. Students can also use their cell phone to call or send text messages that ridicule, threaten or harass others (Pickett & Thomas, 2006).

Tynan (2005) conducted a study on technology-related rudeness in the work force. The author found that the use of cell phones, especially checking emails, was considered the largest culprit of rudeness at work. Tynan suggested that since cell phone technology was so new that school rules or policies needed to be established or amended and followed by students in schools so that they might transfer to the workplace as rules of established technology etiquette, or “gadgetiquette”.

**Research Question and Hypotheses**

The following research question and hypothesis is proposed for the present study: What do secondary school students report are the reasons why they use their cell phones during instructional class time? The author of the present study proposes the following hypothesis:

Secondary students report that they use their cell phone during class primarily to keep in touch with their friends.

**Definition of Terms**

The following definitions will be pertinent to the present study:

‘Cell phones’ are also called mobile or hand phones. These are hand held electronic devices used for telecommunication. Cell phone functions may include talking, texting
messaging, accessing the internet, playing music, playing games, taking pictures or videos or viewing pictures or videos.

‘Class time’ refers to the time in which the teacher is actively engaged in instructing the student or when the student is actively engaged in the lesson.

**Brief Overview of Study**

The present study investigated the reasons why students used their cell phones during instructional class time. Participants completed a survey which listed possible reasons why students use their cell phones. Participants rated each reason by indicating how important each reason was to them. Each reason was analyzed to determine the degree of importance.
Chapter Two: Background and Review of Related Literature

The literature on the subject of cell phone use in the classroom is not extensive as it is a relatively new issue. However, due to the pervasive growth of technology over the years, a number of pertinent studies and writings from various points of view have been published. None of the studies reviewed in the present study address the same question, but they do provide valuable insight.

The study by Nordstrom, Bartels and Bucy (2009) acknowledges that improper use of cell phones is a concern, while Lenhart, Purcell, Smith and Zickuhr’s (2010) study acknowledges that cell phone use is increasing among students. Liberero, Ramos, Trinona and Lambert (2007) address the educational implications of cell phones. The studies by Fox, Rosen and Crawford, (2009) and Bowman, Levine, Waite and Gendron, (2010) research the implications of multitasking on academic performance. Both studies compare test results of students who instant message while reading to test results of students who do not instant message while reading. Madell and Muncer’s (2007) study reports on the reasons students use various communication media such as the internet and cell phones.

Studies Directly Related

The problem addressed by Nordstrom et al. (2009) was that increasingly undergraduate students take on a passive learner role. When asked to assume a larger role in their education, some students displayed uncivil behaviours such as being rude, disrespectful and disruptive (Nordstrom et al., 2009). Examples of such uncivil behaviour included carrying on conversations during class, leaving class early, talking on their cell phone and text messaging (Nordstrom et al., 2009).
The purpose of Nordstrom et al.’s (2009) study was to examine predictors of uncivil classroom behaviour and provide suggestions for minimizing them. Three directional hypotheses, one for each predictor, were stated. The predictors included student attitude towards the appropriateness of uncivil behaviours, viewing education as a consumer and narcissism (Nordstrom et al., 2009). Nordstrom et al. used correlational analysis to describe the degree to which the predictors related to uncivil behaviours.

Students filled in a survey including a 46-item incivility-scale to measure how often students typically engaged in the uncivil behaviours listed (Nordstrom et al., 2009). A 16-item consumerisms scale to measure the extent to which students see themselves as customers and education as a purchased commodity and 24 true and false questions to measure narcissism were also included (Nordstrom et al., 2009). The authors surveyed 593 undergraduate students from a large Midwestern university. Participants were recruited from several sections of first year psychology courses and completed the survey in exchange for course credit (Nordstrom et al., 2009).

As hypothesized, the Nordstrom et al. study found evidence to suggest that all three predictors significantly related to the tendency to engage in uncivil classroom behaviour. Their findings suggested that students who were more likely to behave uncivilly in the classroom held a positive attitude toward uncivil classroom behaviour, had a consumer orientation toward education or had narcissistic tendencies (Nordstrom et al., 2009). Based on these findings, the authors made suggestions to the faculty on how to address these attitudes with students in order to minimize future uncivil behaviours.

Three limitations of Nordstrom et al.’s (2009) study are worth noting. First, the authors examined only three predictors of uncivil classroom behaviour (Nordstrom et al., 2009). It is
possible that there are other predictors that could lead to uncivil behaviour in the classroom such as interest and ability in the subject area, and relationship with the instructor. Second, the sample population was relatively small. Third, the sample population was not diverse as the authors surveyed only first year students from one faculty that attended the same university. Therefore, the findings of Nordstrom et al. are difficult to generalize.

Lenhart et al. (2010) noted a recent decline in the popularity of blogging by teens and young adults and an increase in the use of social networking sites. Lenhart et al.’s report was part of a series of studies by the Pew Research Center’s Internet & American Life Project that highlighted the attitudes and behaviours of young adults. The author’s report compared data from three separate telephone surveys conducted in 2009 in the United States to previous Pew Research Center surveys in order to indicate trends. One of the three surveys collected data about cell phone usage. Eight hundred teens aged 12 to 17 years and their parents were randomly selected and interviewed over the telephone or cell phone.

Lenhart et al.’s (2009) findings suggested that 75% of teens had a cell phone up from 46% surveyed in 2004. The authors further found that 73% of teens surveyed used the cell phone to access online social networking websites, 83% made comments on their friends’ pictures, 86% made comments on their friends’ pages, and 58% send text messages (Lenhart et al., 2009).

Limitations of Lenhart et al.’s (2009) study should be noted. First, though the sample size of 800 randomly selected teenagers and their parents from across the United States seems large, it is small compared to the total population. Second, the survey only included results from teens whose parents also responded. Teens with less supportive parents may have responded differently and their responses may have altered the study findings. Third, the survey was conducted over the telephone or cell phone. The teenagers who did not have access to a
telephone would have been omitted and their responses may have altered the study findings. The subject population is not representative of the total teen population in the United States, so the researcher’s conclusions are difficult to generalize.

**Studies Tangentially Related**

The problem reported by Librero et al. (2007) was that most cell phone users are not aware of the educational potential of cell phones. Briefly, the authors sought to determine the feasibility of using text messaging in formal and informal education. Data were collected from three studies including one survey and two focus group discussions. Conducted through the Philippines’ Department of Education the survey questionnaire was administered to 123 students from six school districts in Manila. The participants varied in age from 12 to 48 years with a mean age of 19 (Librero et al., 2007).

One of the focus group discussions was conducted in the Philippines with 8 participants aged 19 to 30 years enrolled in a literacy program (Librero et al., 2007). The other focus group discussion was conducted in Mongolia with 61 adults who were no longer students. A facilitator gathered responses from the focus group discussions using a set of prepared questions. Librero et al. (2007) found evidence from all three studies to suggest that the respondents agreed that text messaging was an important communication tool and that the respondents had enthusiasm towards the potential use of cell phones for educational purposes.

There are several limitations to the findings of Librero et al. (2007). First, the sample population was not clearly defined. Descriptors of the sample population of all three studies were not consistent. Second, although the sample population covered a large geographic area, it is representative of that area only, mainly the Philippines and Mongolia. Third, all of the participants had access to a cell phone. Including the part of the population who did not have
access to a cell phone may have altered the survey outcome. Fourth, although the research included three separate studies, the sample population was small. Overall, the findings of Librero et al. are difficult to generalize.

Instant messaging (IMing) while studying has become increasingly popular with college students (Fox, Rosen and Crawford, 2009). The purpose of Fox et al.’s (2009) study was to “examine whether concurrent use of IMing hinders students’ abilities to perform a learning task—reading prose for future recall” (Fox et al., 2009, p. 51). Participants in the study included 69 undergraduate students enrolled in an introductory psychology course. A 2 x 2 factorial design was used (Fox et al., 2009).

Students in Fox et al.’s study (2009) were randomly assigned to conditions. All participants started the study IMing with a partner and then were given a high- or low-difficulty reading assignment and a reading comprehension test (Fox et al., 2009). Half of the participants ended their IMing immediately before reading the passage while the other half continued to IM while reading. After the test participants filled out a survey about computer use and attitudes, “ANOVA was performed on multiple-choice score, free-recall score, total score, time to complete multiple-choice questions, time to complete free-recall questions, and total time to complete all questions” (Fox et al., 2009, p. 52).

Results of Fox et al.’s (2009) study indicated that participants who IM while reading took significantly longer to complete the entire test than participants who ended their IMing immediately before performing the task. Results also indicated that participants who were given the difficult assignment scored significantly worse and took longer to read and complete the recall portion of the test than those who were given the low difficulty assignment (Fox et al., 2009). No effect was found for the multiple-choice section of the test, suggesting that recall is
more difficult than recognition (Fox et al., 2009). Overall, these findings suggested that interruptions, degree of difficulty and type of test affected the amount of time needed to complete a task (Fox et al., 2009).

The authors also examined whether experience with IMing predicted test scores. Participants provided self-reported IM use and GPAs. Results of the study indicated that IM use was negatively related to cognitive performance, suggesting that “poorer students spend more time in on-line communication with others, and that the more time spent IMing, the lower the scores on the reading comprehension test” (Fox et al., 2009 p. 52).

Fox et al. (2009) recognized two limitations to their study. They acknowledged that the study sample size was relatively small so results could not be generalized and that the reading assignment was short and therefore not indicative of what a college student may generally do while IMing. Other factors not included in the study which may affect the influence of IMing on student performance may include the interest level of the reading assignment, the interest level of the IMing conversation and the test-writing ability of the student. Fox et al. suggested that further research is needed in this area to find out the extent to which IMing impacts academic performance and “because IM and similar CMC (computer-mediated communications) technologies that foster rapid processing and multitasking have become an important part of the cultural landscape” (p. 53).

Applications to the present study point to students need of direction and guidance in learning appropriate use of their cell phone. Many students assume that they can multitask, such as text while learning in the classroom, with no academic consequences, yet the research by Fox et al. and others indicates otherwise (Bowman et al., 2010; Foerde, 2006; Fox et al., 2009).
In a research experiment similar to Fox et al., (2009), Bowman et al., (2010), examined the effects of multitasking on performance, hypothesizing that students who engaged in IMing would take longer to read an assigned passage and would perform poorly on a comprehension test. An experimental design was used to track the time it took for students to read a passage and perform a comprehension test (Bowman et al., 2010). Eighty-nine second-year college students enrolled in general psychology classes were recruited for the study. The students were divided into three groups at random. One group received IMs before reading, one received IMs while reading and one group received no IMs.

Results of the study indicated that students who IM while reading took significantly longer to complete their work than students who were not interrupted (the time to respond to the IM was subtracted from the total reading time) (Bowman et al., 2010). Bowman et al., (2010) suggested that the extra time was likely due to students rereading the text. There was, however, no significant difference in the comprehension test between the three groups (Bowman et al., 2010).

The authors concluded that “instant messaging and multitasking during academic endeavors carries costs. Students who are managing busy lives may think they are accomplishing more by multitasking. Our findings suggest that they will actually need more time to achieve the same level of performance on an academic task” than if students did not multitask (Bowman, et al., 2010, p. 931).

Bowman et al. (2010) acknowledged the need for future research to be designed to more accurately reflect a busy student’s life by limiting re-reading or limiting the time allotted to read. The authors also acknowledged that in reality, unlike the study, students have the choice to answer the IM or ignore it (Bowman et al., 2010).
The overall results of Bowman et al.’s, (2010) study add to the findings of previous studies on the effects of multi-tasking. IMing on a computer, like texting on a cell phone, has become a common activity in the classroom. Students may not be aware of the academic cost of socializing while learning instead of concentrating on their lessons during class. Teachers can use research findings to help students understand the effects of multitasking.

Madell and Stevens (2007) investigated why young people aged 18 – 20 years used different communication media in their social lives. Participants were asked to discuss the question “why do you use different communication media, such as the Internet and mobile phones, in your lives?” (Madell & Stevens, 2007, p. 138). Discussions from two focus groups of seven university students each were recorded, transcribed and analyzed according to the principles of Grounded Theory. The research theory was entirely driven by the data collected.

Key points in the discussions were grouped to form similar themes. The main theme that emerged from the research study conducted by Madell and Stevens (2007) was that different communication media afforded different levels of control over participant’s social interactions. Instant messaging, mobile phone text messaging, email, voice calls and letter writing were the types of communication media discussed (Madell & Stevens, 2007).

Participants indicated that text-based communication media provided greater control over interactions than voice communication (Madell & Stevens, 2007). Text-based communication was reported as being valuable as it provided the participants the opportunity to take the time to think about how to best articulate a response and to do so at their convenience (Madell & Stevens, 2007).

Results of Madell and Stevens’ (2007) study are difficult to generalize as the sample size of fourteen participants was very small. Madell and Stevens (2007) suggested further research
should be conducted to better understand how to communicate with young people. Suggested research questions for further study included “in what situations are communication media” used, and “what aspects of control over interactions are most important to young people?” (Madell & Stevens, 2007, p. 140).
Chapter Three: Procedures and Methods

Description of the Research Design

Data were collected from a self-reported survey questionnaire to determine what students identify were the reasons why they use their cell phone during class. The survey was distributed to students attending a secondary school on Vancouver Island. Participation was voluntary and anonymous. Quantitative data from the questionnaires were combined and presented in a frequency table and bar graph to represent the strength of the reasons reported by the students.

Description of the Sample

Participants for this study were students attending one of seven secondary schools in the city. Due to specialist programs offered at the school, many students attend from outside the catchment area. The school population of about 1,100 Grade 8 to 12 students is an eclectic ethnic and socio-economic mix and include suburban and urban households. The school district serves about 15,000 students in a city with a population of about 79,000 people.

All of the participants surveyed were enrolled in one of four separate Home Economics classes. Home economics classes are elective courses that are open to all students attending the high school. Students enrolled in the classes were representative of the student population. The participants in the sample included an equal distribution of male and female students ranging in age from 14 to 18, with an average age of 16 years. All of the participants reported that they had a cell phone that they used during class.
Description of the Instrument Used

A survey was used to collect information to find out why students use their cell phone during class time (See Appendix A). The survey had two parts. The first part consisted of four dichotomous (yes/no) questions that established if the student had a cell phone and if the student used a cell phone during class time. Only participants who reported that they used a cell phone during class were asked to complete the second part of the survey. The second part consisted of a list of 15 possible reasons why students might use a cell phone during class. The reasons listed were based on the literature review, field experience of the author of the present study and a trial survey. A 5-point rating scale on a horizontal line was provided beneath each reason. The number 1 on the scale indicated Never the Reason and the number 5 indicated Always the Reason. The participants were instructed to circle the number on the line that best represented why they use a cell phone during class. Space was provided at the end of the survey for participants to add other possible reasons not previously listed.

Explanation of the Procedures Followed

The survey was administered by the author of the present study to four separate classes in the same classroom on the same day in the month of September. A Research Consent Letter (Appendix B) was distributed to students to bring home for their parent or guardian to read and sign. The consent letter provided a full explanation of the purpose and intentions of the study. The consent letter had a clear statement that participation was voluntary and anonymous and that participants could withdraw at any time for any reason. It was also made clear that signing the consent letter indicated that they allowed their child to participate in the present study. Students who returned a signed consent letter were handed a survey to complete. The author of the present study administered the surveys to the participants. The participants were asked to place the
completed surveys in a marked envelope. All surveys were collected and sealed in the envelope and stored in a locked cabinet in the classroom to ensure safety of the information.

**Discussion of Validity**

The survey was presented in a trial with students not participating in this study. The trial provided feedback as to the structure and content of the survey. To ensure validity, the survey was administered to four separate classes representative of the student population at Nanaimo District Secondary Community High School. All surveys were identical and were administered on the same day in the same classroom by the author. Instructions were printed on the survey and read aloud before the participants answered the questions. It was stressed that the survey was completely anonymous in order to encourage truthful answers.

In order to participate in the survey, students had to have access to a cell phone and use it during class. Four qualifying questions at the beginning of the survey determined if students satisfied these conditions. The survey asked the participants to respond directly to the research question by indicating the strength of each of 15 possible reasons they use a cell phone during class time. Space was provided at the end of the survey for participants to list any other reasons they use a cell phone during class that were not previously listed.

**Description and Justification of Statistical Techniques**

Surveys were collected and data obtained from them were entered into Microsoft Excel, a computer program used to calculate statistics. Mean scores, percentage, and standard deviation were calculated for each of the 15 possible reasons listed in the survey and presented in a frequency table. The 15 reasons were also grouped into three separate categories according to common reasons and their mean scores combined. The combined percentages of the categories were presented in a bar graph. A high score indicated a more important reason. A low score
indicated a less important reason. Student responses to the survey questions directly answered the research question because a mean score of three or above (a number 3 on the rating scale denoted Sometimes the Reason) indicated a reason they use a cell phone during class.
Chapter Four: Results

The purpose of this study was to find out why students choose to use their cell phone during class instead of concentrate on their learning. Data were collected from a survey (Appendix A) distributed to students enrolled in four separate high school classes. Sixty-five surveys were returned. Twelve returned surveys were not included in the analysis as they were deemed unusable for the following reasons: four students indicated they did not have access to a cell phone, four did not bring their cell phone to class, three did not use their cell phone during class and one did not complete all of the questions. In total, data from 53 surveys were used.

Students were required to provide parental or guardian consent in order to participate in this survey. This required that students bring the consent letter (Appendix B) home for signature. Out of a possible 112 students who were enrolled in the classes and invited to participate, 65 surveys were returned, which indicate a 58% return.

The data reflects the responses to 15 reasons listed on the survey (Appendix A) using a 5-point rating scale. Participants were instructed to circle the number on a 5-point scale which best indicated the reason they use a cell phone during class where the number 1 indicated Never the Reason and the number 5 Always the Reason. The mean could therefore range from 1.00 to 5.00.

Table 4.1 displays the mean scores for each reason listed. Reasons are listed in numerical order as listed in the survey and grouped in categories of common reasons.
Table 4.1

*Mean scores for each reason listed, (N=53), and percent of students who indicated a reason they used their cell phone during class.*

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percent</th>
<th>Low</th>
<th>High</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social Reasons</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. keep in touch with a friend 89</td>
<td>92</td>
<td>1</td>
<td>5</td>
<td>3.96</td>
<td>0.96</td>
</tr>
<tr>
<td>2. visit social network 30</td>
<td>30</td>
<td>1</td>
<td>5</td>
<td>2.02</td>
<td>1.38</td>
</tr>
<tr>
<td>4. answer incoming call 23</td>
<td>23</td>
<td>1</td>
<td>5</td>
<td>1.79</td>
<td>1.08</td>
</tr>
<tr>
<td>5. answer incoming text 94</td>
<td>94</td>
<td>1</td>
<td>5</td>
<td>4.00</td>
<td>0.96</td>
</tr>
<tr>
<td>7. call a parent 55</td>
<td>55</td>
<td>1</td>
<td>5</td>
<td>2.60</td>
<td>1.37</td>
</tr>
<tr>
<td><strong>Cheating Reasons</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. text friends with answers 9</td>
<td>9</td>
<td>1</td>
<td>4</td>
<td>1.30</td>
<td>0.85</td>
</tr>
<tr>
<td>11. take picture of test 4</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>1.17</td>
<td>0.55</td>
</tr>
<tr>
<td>13. search internet for answer 11</td>
<td>11</td>
<td>1</td>
<td>5</td>
<td>1.28</td>
<td>0.79</td>
</tr>
<tr>
<td>14. store information for test 13</td>
<td>13</td>
<td>1</td>
<td>3</td>
<td>1.40</td>
<td>0.72</td>
</tr>
<tr>
<td><strong>Off-task Reasons</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. check the time 92</td>
<td>92</td>
<td>1</td>
<td>5</td>
<td>3.96</td>
<td>0.96</td>
</tr>
<tr>
<td>8. relieve boredom 72</td>
<td>72</td>
<td>1</td>
<td>5</td>
<td>3.40</td>
<td>1.43</td>
</tr>
<tr>
<td>9. look at pictures on camera 43</td>
<td>43</td>
<td>1</td>
<td>5</td>
<td>2.26</td>
<td>1.29</td>
</tr>
<tr>
<td>10. take pictures with camera 40</td>
<td>40</td>
<td>1</td>
<td>5</td>
<td>2.17</td>
<td>1.27</td>
</tr>
<tr>
<td>12. look on the internet 32</td>
<td>32</td>
<td>1</td>
<td>5</td>
<td>2.04</td>
<td>1.36</td>
</tr>
<tr>
<td>15. listen to music 38</td>
<td>38</td>
<td>1</td>
<td>5</td>
<td>2.26</td>
<td>1.52</td>
</tr>
</tbody>
</table>
Actual means range from 1.17 to 4.00. For the purposes of this study a mean score of >3.00, where 3 indicated sometimes the reason, is considered a reason students report they are more likely to use a cell phone during class. Data were analyzed and indicated that students reported they were more likely to use their cell phone during class for four reasons including, in descending order of importance, to answer an incoming text message (94%), to check the time (92%), to keep in touch with a friend (89%), and to relieve boredom (72%).

For further analysis, the 15 reasons were grouped into three categories according to common reasons including social, cheating, and off-task reasons. The social reasons category included reasons such as keeping in touch with a friend, visiting a social networking site and answering a text message. The cheating reasons category included texting friends with answers to a test, taking a picture of a test and storing information to look at during a test. Reasons such as checking the time, searching the internet and listening to music were included in the off-task category.

The percentages for each category were combined. Data were analyzed and indicated that students were more likely to use their cell phone during class for social reasons. Figure 4.1 displays the level of strength for each category of reasons students report they use a cell phone during class.
Figure 4.1. Level of Strength Reported for Each Category
Chapter Five: Summary and Conclusion

Summary

The purpose of this study was to find out why students choose to use their cell phone during class instead of concentrate on their learning. Research has found that cell phone use by students during class may lead to a number of negative consequences such as disrupting the learning process (Bowman et al., 2010; Fox et al., 2009; Gilroy, 2004; St. Gerard, 2006), cheating (Picket & Thomas, 2006; St. Gerard, 2006), bullying (Docksai, 2009; Picket & Thomas, 2006) and other technological and etiquette concerns (Boucek & Jones, 2006; McCabe, 2009; Nordstrom et al., 2009).

The cell phone, and other communication devices, is pervasive and its use has become an integral part of our society (Obringer & Coffey, 2007). Educational leaders must first acknowledge the widespread use of cell phones by students, and as technology advances, be able to adapt policies regarding its use in schools and classrooms. Educators must also inform students of the potential negative educational, social and safety implications of cell phone use. With this knowledge educators can help guide students to make informed decisions about using their cell phone in and outside the classroom. Finally, educational leaders must be open to embrace technology, learn to use it and adapt it order to enhance student learning.

To further explore the concern over cell phone use in the classroom, a literature review of relevant research was undertaken and a survey was distributed to high school students. The survey (Appendix A) consisted of 15 possible reasons why students may use their cell phone during class. Participants were asked to rate each reason on a 5-point scale. Space was provided
at the end of the survey for participants to list any other reasons that they might use a cell phone during class that was not listed in the survey.

Data were analyzed to discover the top rated reasons students report they were more likely to use their cell phone during class instead of concentrating on their learning.

**Discussion**

The research findings indicate that the top four reasons students report they were more likely to use their cell phone during class were to keep in touch with a friend, to check the time, to answer an incoming text message, and to relieve boredom. The study hypothesis that students would report that they use their cell phone primarily to keep in touch with their friends was therefore supported.

The reason with the highest mean score of 4.00, to answer an incoming text message, was reported by 94% (50 out of 53) of the participants. The second highest reported reason was to check the time which had a mean score of 3.96, and was reported by 92% (49 out of 53) of the participants. To keep in touch with a friend followed with a mean score of 3.70, and was reported by 89% (47 out of 53) of the participants. The last of the top four reasons students use their cell phone during class was to relieve boredom. This reason had a mean score of 3.40, and was reported by 38 out of 53 participants, or 72%.

For further analysis, the 15 reasons listed in the survey were grouped into three categories of common reasons, including social reasons, cheating purposes and off-task behaviour. Social reasons included to keep in touch with a friend, visit a social networking site, to answer an incoming call, to answer an incoming text message, and to call a parent. The mean scores for the reasons categorized as social ranged from 1.79 to 4.00. When the five reasons in this category
were combined, the mean score was 2.82 which indicated that students are more likely to use their cell phone during class for the reasons listed in the survey and categorized as social reasons. Space was provided at the end of the survey for participants to list other reasons why they might use a cell phone during class. Students listed the following reasons which may be considered social reasons: “to text parents about test scores”, “to text parents if I’m feeling sick, and want to go home”, “to ask mom for help”, and “to ask about work”.

The mean scores for the reasons categorized as cheating purposes ranged from 1.17 to 1.40. When the four reasons in this category were combined, the mean score was 1.29 which indicates that students are less likely to use their cell phone during class for the reasons listed in the survey and categorized as cheating. Participants did not list any other reasons in the space provided at the end of the survey which may be considered as cheating.

In the category of off-task behaviours, the mean scores ranged from 2.04 to 3.96. When the six reasons in this category were combined, the mean score was 2.68 which indicated that students were less likely to use their cell phone during class for the reasons listed in the survey and categorized as off-task behaviours. At the end of the survey participants listed other reasons not included in the survey list that they use a cell phone during class. The reasons, provided by the participants, which may be included as off-task behaviour include: “to check the date”, “to check sports events”, “to use the calculator”, “to use the dictionary”, “to use the organizer”, “to use the daily planner to set reminders”, “to keep homework assignments”. Depending on the circumstances, some of these reasons may be argued as being part of the learning process in the classroom.
Limitations

A number of possible threats to validity may exist in research studies. Most threats to validity in this study were controlled by the author administering the same survey in the same classroom on the same day to four separate classes. The same instructions were read aloud and followed in each class surveyed. Some possible limitations to this survey are acknowledged and include the survey itself, the topic and the participants.

Would results differ if the survey was shorter (if the survey was one page instead of two), had a different format (if the rating scale was beside instead of below each question), or if the questions were worded differently? The survey listed 15 possible reasons that students may use their cell phone during class and space was provided at the end for participants to include other reasons not already listed. It cannot necessarily be concluded that no other reasons exist beyond the listed reasons and those provided by the students.

Other limitations to the study include questioning whether the topic was interesting enough for students to engage in the survey and provide thoughtful answers. The survey format provided no opportunity to engage in clarification. Would results have been different if the survey was conducted as a focus group where questions could be clarified and discussed?

Space was provided at the end of the survey for students to add reasons that they use their cell phone during class that were not listed in the survey. The survey format did not provide opportunity to clarify reasons provided by students. It is unclear what the student who wrote “to ask my mom for help” meant. Did they need help with school work or personal help? Was the student who wrote “to use the dictionary” referring to a reason which might be concluded as off-task behaviour or a cheating or learning reason?
Parental consent was required for students to participate in the survey. Not all students returned a signed consent form. As a result, not all students that were given the opportunity to participate did so. Did the extra step required by the students to participate in the study exclude a certain demographic of the student population? Did the exclusion of some students affect data results? A trial study was conducted prior to this study where parental or guardian consent was not required and 100% of surveys were returned. Results of the data were subject to the interpretation of the author of the present study.

**Suggestions for Further Research**

Further research in student use of cell phones in the classroom is suggested. As new technologies and features become the norm for student use, new possibilities and challenges will present themselves. Educational leaders must be aware of these advances and be prepared to adapt policies and methodology as necessary in order to enhance student learning.

The present study asked students to report why they use their cell phone during class. Further research could ask: Why do students choose to disengage from their learning by using their cell phone? What are the characteristics of the classes students use their cell phone in more often? What are the characteristics of the classes students use their cell phone in less often? How often do students use their cell phone during class? Which cell phone features do students use more often?

Further research could also ask students: What would discourage cell phone use in the classroom? What could teachers and administrators do to engage them in their learning and keep them engaged? What do they think are educational uses of their cell phone? Are students aware of the negative educational impact of multitasking? Is this knowledge important to them?
Answers to these and other questions will provide teachers and administrators with much needed information about student behaviours and attitudes regarding the use of cell phones in the classroom. Such knowledge may help to open communication between students who use their cell phones and teachers who attempt to enforce the school rules that students are not to use them. A better understanding on both sides may lead to the creation of more effective policies that can be followed by students and enforced by educational leaders.
References


Appendix A

Student Use of Cell Phones in the Classroom

Please Note: As clearly stated in the NDSS Student Handbook the school does NOT encourage students to bring cell phones to school. If students bring them to school they must be turned off and out of sight during class.

Part One: Short answer questions

Instructions: In the space provided at the end of each question please check YES or NO to make the statement true

1. Do you have access to a cell phone? _____ Yes _____ No
2. Have you ever brought a cell phone to school? _____ Yes _____ No
3. Have you ever brought a cell phone to class? _____ Yes _____ No
4. Have you ever used a cell phone during class? _____ Yes _____ No

If you answered NO to question 4 above, please STOP here. Thank you for your participation. Please place your survey in the envelope marked SURVEY.

If you answered YES to question 4 above, please continue to answer the questions in part two.

Part Two: Self Rate List

Instructions: Rate the following prompts: For each reason listed below circle the number on the bar which best represents why you use a cell phone during class.

I use my cell phone during class:

1. To keep in touch with a friend.
   1 2 3 4 5
   (Never the Reason) (Sometimes the Reason) (Always the Reason)
2. To visit a social networking site (Face Book, MySpace, Twitter, etc.).
   1 2 3 4 5
   (Never the Reason) (Sometimes the Reason) (Always the Reason)

3. To check text messages.
   1 2 3 4 5
   (Never the Reason) (Sometimes the Reason) (Always the Reason)

4. To answer an incoming call.
   1 2 3 4 5
   (Never the Reason) (Sometimes the Reason) (Always the Reason)

5. To answer an incoming text message.
   1 2 3 4 5
   (Never the reason) (Sometimes the Reason) (Always the Reason)

6. To text friends about answers to quizzes tests or assignments.
   1 2 3 4 5
   (Never the Reason) (Sometimes the Reason) (Always the Reason)

7. To call a parent.
   1 2 3 4 5
   (Never the Reason) (Sometimes the Reason) (Always the Reason)

8. To relieve boredom. *because you are bored*
   1 2 3 4 5
   (Never the Reason) (Sometimes the Reason) (Always the Reason)

9. To look at pictures on your camera setting.
   1 2 3 4 5
   (Never the Reason) (Sometimes the Reason) (Always the Reason)

10. To take a picture with your camera.
    1 2 3 4 5
    (Never the Reason) (Sometimes the Reason) (Always the Reason)
11. To take a picture of a quiz or test.

1 2 3 4 5
(Never the Reason) (Sometimes the Reason) (Always the Reason)

12. To look up something on the internet.

1 2 3 4 5
(Never the Reason) (Sometimes the Reason) (Always the Reason)

13. To search the internet for answers to an assignment, quiz or test.

1 2 3 4 5
(Never the Reason) (Sometimes the Reason) (Always the Reason)

14. To store information or notes to look at during a quiz or test.

1 2 3 4 5
(Never the Reason) (Sometimes the Reason) (Always the Reason)

15. To listen to music.

1 2 3 4 5
(Never the Reason) (Sometimes the Reason) (Always the Reason)

Are there any other reasons that you use a cell phone during class that was not listed above? Please list here: ________________________________

______________________________

Please place your completed survey in the envelope marked “Survey” that is on the table at the back of the room.

Thank you
Appendix B

RESEARCH CONSENT FORM
“STUDENT USE OF CELL PHONES IN THE CLASSROOM”
September, 2010

Randi Turner
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Vancouver Island University
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Harry Janzen, Ph.D., Supervisor
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Vancouver Island University
(250)740-6221

I am a student in the Masters Degree in Educational Leadership Program at Vancouver Island University. This course requires us to gain applied experience in designing and conducting research. As such, I have designed a research project to study the reasons why students use their cell phones during class.

In this survey your child will be asked to rate a list of possible reasons why they use a cell phone during class. The survey will take approximately three minutes to complete and will be collected in a box that is placed on the counter in the school front office.

There are no known harms associated with your child’s participation in this research.

All records of participation will be kept strictly confidential, such that only I and my supervisor will have access to the information. Data will be stored in a locked filling cabinet. Data will be destroyed by shredding at the end of the research, approximately September 2011. Electronic files will also be deleted at that time. The results of the study will be reported in a written research paper. Information about the project will not be made public in any way that identifies individual participants.

Your child’s participation is completely voluntary and anonymous. They may withdraw at any time for any reason without explanation. Once they have submitted their answers, however, it will not be possible to withdraw them as there will be no way to distinguish their responses from those of other respondents. They may choose not to answer any question that makes them feel uncomfortable.
If you consent to allow your child to participate in this research, please sign below and have your child return this consent form as soon as possible.

I, _________________________ parent/guardian of ________________________________

(Name of parent/guardian) (Name of child)

Give consent for him/her to participate in the research project described above.

__________________________ __________________________

(Parent/guardian signature) (Date)

If you have any concerns about your child’s treatment as a research participant during this survey, please contact the VIU Research Ethics Officer, by telephone at 250-753-3245 (ext, 2665) or by email at reb@viu.ca.

If you have any questions about this research project, or would like more information, please feel free to contact me at the e-mail address below:

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Masters Student  
Vancouver Island University  
billandrandi@gmail.com  
(250) 754-6101