ABSTRACT

Reid M. Knight, ACADEMIC CYBERLOAFING: A STUDY OF PERCEPTUAL AND BEHAVIORAL DIFFERENCES ON IN-CLASS CYBERLOAFING AMONG UNDERGRADUATE STUDENTS (Under the direction of Dr. John Cope) Department of Psychology, April 2017

The purpose of this study was to observe if any significant correlations exist between demographic characteristics and cyberloafing attitudes, as well as cyberloafing behaviors among undergraduate students. No significant correlations were found in regards to age. Significant results were found in regards to gender (women cyberloafed significantly more than men), as well as perceptions of societal norms (the more students perceived cyberloafing as a societal norm, the more likely they were to view cyberloafing as acceptable). Theoretical implications of these results are discussed.

ACADEMIC CYBERLOAFING: A STUDY OF PERCEPTUAL AND BEHAVIORAL DIFFERENCES ON IN-CLASS CYBERLOAFING AMONG UNDERGRADUATE STUDENTS

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ACADEMIC CYBERLOAFING: A STUDY OF PERCEPTUAL AND BEHAVIORAL DIFFERENCES ON IN-CLASS CYBERLOAFING AMONG UNDERGRADUATE STUDENTS

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CHAPTER I: INTRODUCTION

History is filled with examples of new products ï or technologies ï that are initially embraced with optimism, but later reveal unanticipated negative consequences (Tenner, 1996). Two examples in particular are mobile phones and laptops; although they are widely appreciated, cyberloafing is a negative consequence of their existence. Cyberloafing is defined as the act of employees engaging in non-work related Internet activities during work hours (Lim, 2002).

Research has examined how cyberloafing behaviors that are disruptive and counterproductive at work may also affect the academic environment. Indeed, research on the subject tells us that digital tools within the classroom can either create new opportunities for enhancing the learning experience, (Mang & Wardley, 2012) or prove to be an issue that academic institutions cannot ignore (Tindell & Bohlander, 2012). Specifically, multitasking with these technologies can interfere with the learning process (Junco, 2012).

For this thesis, I measured perceptions, attitudes, and behaviors involved in cyberloafing within a sample of undergraduate students. Student cyberloafing was operationalized as behaviors involving the use of mobile phones or laptops during class for non-academic purposes such as text messaging, personal emailing, Facebook or other social media, downloading music, watching videos, online shopping, and gaming. The aim of the current study was to bring to light the differences in attitudes and behaviors among undergraduate students regarding the appropriateness of electronic device usage during class/lecture at East Carolina University.

Cyberloafing

Cyberloafing was originally defined by Lim (2002) as the act of employees using their employerôs Internet access to engage in non-work related activities. More recently, cyberloafing was defined as the use of any Internet and mobile technology during work hours for non-work related purposes (Vitak, Crouse, & LaRose, 2011). Regardless of how one chooses to operationalize it, cyberloafing can be a distraction and serious detriment to the productivity of those in school and the workforce. Despite the many benefits of todayôs modern technologies, the constant social micromanagement, reachability, and connectedness they grant may have drawbacks that constrict and harm areas of our social lives and our very mental and physical health (Rigely, 2014). In his 2008 study, Michael Bugeja argued that although new technologies ï including cell phones, laptops, music players and game consoles ï keep individuals connected, they also keep them constantly distracted. Most of the literature focuses on cyberloafing in the workplace, but may provide insight into cyberloafing in academic settings.

Cyberloafing in the Workplace

Technological resources in the workplace have positively impacted organizational performance through faster communication, reduced costs, and comprehensive information access; however, employees can take advantage of these resources by using them for personal purposes (Sage, 2015, p. 1). Previous research shows that roughly 90% of employees admit to using recreational websites at work and partaking in more than two hours of general cyberloafing each day (Sharma & Gupta, 2004). From this statistic, it is unfortunately clear that cyberloafing is a widespread activity in the workplace.

Gender Differences in Perceptions of Workplace Cyberloafing

Viewing the statistics above, one can see that cyberloafing is prevalent in the workplace. However, not every employee perceives cyberloafing in the same manner, especially when it comes to gender. Lim & Chen (2009) found men were significantly more likely than women to cyberloaf. In addition to differences in likelihood of cyberloafing the study also found that on average, men cyberloaf for significantly longer periods of time and perceive cyberloafing as more acceptable than do women. Lim & Chen (2009) also found that women felt cyberloafing had a more negative impact on their work performance than did men. Jia, Jia & Karau (2013) also found that male workers were more likely to loaf on the Internet than female employees. With all statistical considerations taken into account, a significant difference was found between men and women in regards to perceptions of workplace cyberloafing.

Cyberloafing in Academia

Educators are constantly looking for ways to improve the learning experience for students, so it is no surprise that most research concerning electronic devices in the classroom focuses on how it enhances studentsô pedagogical experience. (Baker, Lusk, & Neuhauser, 2012). However, with the expansion of computers and Internet access in school settings, concerns over cyberloafing in educational environments have grown (Baturay & Toker, 2015). When it comes to academic cyberloafing with cellphones and laptops specifically, research concerning the learning pros and cons is still inconclusive (Baker et al., 2012). Because of this lack of conclusiveness, I aim to add to the existing literature regarding one of the cons of cellphones and laptops in the classroom: cyberloafing.

Prevalence of Cyberloafing via Mobile Phone in the Classroom

Virtually limitless access to mobile phones has not gone unnoticed in the classroom. In a 2012 study, it was found that ñ95% of students bring their phones to class every day, 92% use

their phones to text during class time, and 10% admit they have texted during an exam on at least one occasionò (Tindell & Bohlander, 2012, p. 1). In another study, survey data found that nearly 25% of students said that they had sent a text message in almost every class whereas another 15% had sent 5-10 texts in class each week (Baker et al., 2012). Additionally, in a study conducted with a sample of 195 graduate students from Arizona and Illinois campuses, 34.9% claimed to use their cell phone during class time (Burns & Lohenry, 2010). Acknowledging these statistics, it is clear that cyberloafing during class is a widespread activity on college campuses.

Perceptions of Faculty and Students on Electronic Devices in Class

It is important to gain a thorough understanding of the cognitions associated with both students and faculty in regards to cyberloafing. Previous research suggests that faculty may view electronic devices as more inappropriate in the classroom than do students, however, no research currently suggests either studentsô or faculty membersô perceptions toward electronic devices in class are universally positive or negative (Baker et al., 2012). Although there is no definitive norm for student or faculty perceptions regarding technology in the classroom, generational differences could play a role in viewpoints.

A rationale for the inherent differences in perspective between students and faculty was provided by Prensky (2001), who offered the distinction between *digital immigrants* in contrast to *digital natives*. Prensky states that even if faculty members use electronic devices consistently, because they are from a generation that didnôt depend upon such devices, they are *digital immigrants*. He explains that members of the millennial generation ï which encompasses most of todayôs students ï are digital natives. Even though digital immigrants know how to use electronic devices, digital natives are so accustomed to such devices that they become like bodily

appendages, and digital natives might feel that attempts to remove these appendages are irrational or wrong (Prensky, 2001). Supplementing Prenskyôs theory, a study conducted in 2008 by Julie Domitrek and Rebecca Raby examined differences among teachers, administrators and students and found that students view electronic devices as essential elements of social life, necessary at all times for safety, and integral factors in everyday life. In short, the majority of students are digital natives, teachers are predominantly digital immigrants, and most administrators are neither. Ironically, however, it is administrators who create most policies forbidding electronic devices in the classroom, without consulting either students or teachers (Baker et al., 2012).

In 2006, S.W. Campbell conducted one of the most comprehensive studies of cell phone use in the college classroom. Campbellôs study examined the perceptions of faculty and students across all college disciplines and majors regarding policies banning cell phones in classrooms, ringing of cell phones during class, complaints regarding cell phone use during class, and the likelihood of cheating using mobile phones. ñIn regards to student and faculty member attitudes about mobile phones in classrooms, faculty member and students reported some unfavorable attitudes toward the use of cell phones in college classrooms.ò One major distinction between the two groups was that younger participants reported significantly less support for policies restricting cell phone in-class cell phone usage and more tolerance for ringing during class than did older participants. All participants in the study, both students and faculty members, regarded ringing cell phones as a problem that was serious enough to necessitate policies prohibiting in-class use. Though not as commonly perceived as a problem, cell phones were sometimes also perceived as catalysts for cheating or sources for complaints. Campbell linearly combined several variables: age, sex, and phone usage. He explained differences between faculty and

students, and found that age was a dominant predictor variable. Of course, age is confounded with status (faculty or students).

Students could be affected by faculty perceptions of electronic device usage during lecture. However, even on faculty perceptions on in-class policies of electronic devices, there is no consensus. In 2007, Michael Bugeja, a Communications professor at Iowa State University, argued that soon *all* faculty members will include policies regarding the in-class use of electronic devices on their syllabi. On the other hand, Gilroy (2003), claimed that the opinions of faculty regarding the use of cell phones in the classroom are quite diverse, with some faculty members wishing to ban them and others feeling that even guidelines on cell phone use are overly restrictive and unnecessary. In sum, there is no universal norm for how faculty members view the enactment of in-class policies regarding electronic devices.

Cyberloafing: An Academic Impairment

Cell phones. One of the most predominant forms of academic cyberloafing, text messaging via cell phone during class, is a behavior that is hard to ignore or disrupt. 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 (Chaklader & Bohlander, 2009). Similarly, Rosen, Lim, Carrier, and Cheever (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 studentôs texting (Tindell & Bohlander, 2011). These studies confirm that cyberloafing can be disruptive to learning in the classroom.

Laptops. In addition to text messaging via cell phones being an academic impairment for students, laptops may also offer distraction from learning in the classroom. Access to desktop computers in the classroom can increase student engagement as students take an active role in learning, especially when the school-provided desktops block access to sites with no educational value; however, laptops in the classroom (owned by the students and without restrictions on Internet usage) can lead to less engagement because of increased access to off-task activities, like the web, email and games (Skolnik & Puzo, 2008). Fried (2008) found in her research that students using laptops frequently engage in multitasking, but studentsô learning ï as measured by self-reported understanding of course material and overall course performance ï is negatively affected, and laptop use can also be distracting to fellow students. Hembrooke and Gay (2003) focused solely on the effects of multitasking using laptops, and also concluded that laptop use decreases the ability to learn [or concentrate] in the college classroom. Ironically, Skolnik & Puzo (2008) found that in-class lectures accompanied by PowerPoint slides most often resulted in off-task activities, suggesting that passive learning creates the greatest opportunity for students to be distracted by the laptop technology.

Types of Cyberloafing

In a very recent study, a confirmatory factor analysis of an academic cyberloafing measure yielded five distinct factors regarding different types of cyberloafing: sharing, shopping, real-time updating, accessing online content, and gaming/gambling (Akbulut, Dursun, Donmez, & Yusuf, 2016). *Sharing* referred to any activity in which one could post to a social network forum. *Shopping* defined any activity that involved searching for, reading about, or purchasing

online products. *Real-time updating* particularly referred to Twitter usage. *Accessing online content* covered downloading music or watching videos online, and *gaming/gambling* was any electronic usage (online or not) that involved playing a game or gambling. Upon testing this five-factor structure, 70.44% of the variance was captured by these factors.

Theory of Planned Behavior and Attitudes Toward Cyberloafing.

The Theory of Planned Behavior (TPB) predicts a personôs intention to engage in a behavior. This theory posits that individual behaviors are driven by behavioral intentions, where behavior intentions are a function of three determinants: an individualôs attitude toward behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). Subjective norms refer to an individualôs perception of the social environment that surrounds the behavior. This facet of the Theory of Planned Behavior may support the idea that believing academic cyberloafing is a normal behavior may influence a studentsô attitude toward academic cyberloafing.

Current Study Hypotheses

Age. In Campbellôs 2006 study, among faculty and students, both parties generally reported negative attitudes about mobile phones in college classrooms; however, students, especially younger, were more lenient toward the use of mobile phones in class than older students and faculty. Supporting the idea that age makes a difference in leniency toward in-class electronic device usage, members of the millennial generation ï which encompasses the majority of todayôs students ï are digital natives, as opposed to digital immigrants (Prensky, 2001). With these sources taken into account, it is believed that younger students will view cyberloafing in class as more acceptable.

Hypothesis 1: Younger students will view cyberloafing activities more leniently than older students.

Student cyberloafing behaviors. In a 2012 study, it was found that ñ95% of students bring their phones to class every day, 92% use their phones to text during class time, and 10% admit they have texted during an exam on at least one occasionò (Tindell & Bohlander, 2012, p. 1). In another 2012 study, survey data found that ñalmost one quarter of students said that they send a text message in almost every class whereas another 15% send 5-10 texts in class each weekò (Baker et al., 2012). Additionally, in a study conducted with a sample of 195 graduate students from Arizona and Illinois campuses, 34.9% claimed to use their cell phone during class time (Burns & Lohenry, 2010). Taking these findings into account, the majority of student respondents may see nothing wrong with using electronic devices during class-time for non-academic purposes.

Hypothesis 2: The majority of student respondents will claim to use their electronic devices during class-time for non-academic purposes.

Men vs. women. Although cyberloafing is a popular activity, not everyone perceives cyberloafing in the same manner, especially when it comes to gender; Lim & Chen (2009) found that men were significantly more likely to cyberloaf than women. In addition to differences in the likelihood of engaging in cyberloafing, they also found that on average men (a) cyberloaf for significantly longer periods of time, and (b) perceive cyberloafing as more acceptable than do women. With all statistical considerations taken into account, a significant difference was found between men and women in regards to perceptions of workplace cyberloafing.

Hypothesis 3a: Men will claim to engage in cyberloafing more than will women.

Hypothesis 3b: Men will view cyberloafing as more acceptable than will women.

Subjective norms and attitudes toward academic cyberloafing. The Theory of Planned Behavior is a model that predicts someoneôs likelihood of performing a particular

behavior (Ajzen, 1991). Subjective norms refer to an individualôs perception of the social environment that surrounds the behavior. This facet of the Theory of Planned Behavior may support the idea that believing academic cyberloafing is a normal behavior may influence a studentsô attitude toward academic cyberloafing.

Hypothesis 4: Students that believe academic cyberloafing is a normal behavior will have more positive attitudes toward academic cyberloafing.

CHAPTER II: METHODS

Participants

The current studyôs sample consisted of undergraduate students at a large Southeasterm University. . Students participated in the study by visiting the universityôs psychology research participation portal, SONA. To accelerate the recruiting process, the head of the universityôs undergraduate psychology courses was contacted and asked to send out a mass email to all students in an undergraduate psychology course about the study. Upon their participation in the study, students were granted 0.25 research credit points for their participation. Data were downloaded from Qualtrics Survey Software and analyzed with IBM SPSS Statistics 22 software.

Demographics

A total of 176 undergraduate student participants were surveyed. 14.2% (*N*= 25) of students did not answer validity questions appropriately, so they were not included in the sample. Thus, 141 undergraduate student participants were included in the final sample. Thirty-six percent (*N* = 51) of the participants were male in the age range of 18 to 38 (*M* = 19.65, *SD* = 3.17). Women accounted for 64% (*N* = 90) of the participants and were in the age range of 18 to 25 (*M* = 18.84, *SD* = 1.04). A majority of the participants were Caucasian (75.2%) (*N* = 106), followed by African American (14.1%) (*N* = 20), biracial (5.7%) (*N* = 8), Asian (1.4%) (*N* = 2), Native American (1.4%) (*N* = 2), Hispanic/Latino (1.4%) (*N* = 2), and Indian (.07%) (*N* = 1). Most participants were in the freshman class (75.1%) (*N* = 106), followed by sophomores (17.0%) (*N* = 24), juniors (6.4%) (*N* = 9), and seniors (1.4%) (*N* = 2). On average, participants had a self-reported GPA of 3.07 (*M* = 3.07, *SD* = .6502). All participants (*N* = 141) claimed to own a cellphone, 9.9% (*N* = 14) claimed to own a desktop, and 96.4% (*N* = 136) claimed to own

a laptop. Eight and a half percent (*N* = 12) of the respondents claimed to have access to a computer at work, and 39% (*N* = 55) claimed to have access to a computer at school (See Appendix A).

Measures

Electronic device usage and attitudes toward cyberloafing. This study used a modified version of Baker et al.ôs (2012) survey measure of cyberloafing. Their survey was designed to capture differences in access to and use of technology, and differences in perceptions on cell phones and laptops in class between students and faculty members. Given the popularity of mobile phones and electronic devices, questions were added to Bakerôs survey that assessed perceptions of societal norms, a facet of the Theory of Planned Behavior (Ajzen, 1991). The purpose of this was to observe and operationalize how perceptions of societal norms influenced attitudes toward cyberloafing behaviors in the classroom. Additionally, items focusing on MP3 players were removed, as most of todayôs phones replace the need for an MP3 device.

The survey was designed to measure electronic behaviors, perceptions, and attitudes of students regarding cyberloafing. Students were asked to reveal their attitudes toward cellphones and laptops in the classroom and behaviors regarding electronic device usage in the classroom. Question responses include *Yes/No*, multiple choice, five point Likert scale, and 1-7 scale responses. Item analyses were conducted to measure attitudes toward cyberloafing behaviors with cellphones and laptops. A full list of items included for measuring those attitudes is shown in Table 1 in the Results section. Question 31,ñHow often do you use cell phones during class for non-academic (texting, surfing the internet, using social media, etc.) purposes?ò was used to measure student behaviors of academic cyberloafing. One survey question measured studentsô views of acceptability, specifically regarding the theme of societal norms. For example, ñMost

people would agree that a student using a cellphone in class, for non-academic purposes, is a societal norm.ò Additionally, other items were used to observe the various types of student cyberloafing behaviors - sharing, shopping, real-time updating, accessing online content and gaming/gambling (Akbulut et al., 2016). For example, Question 32, ñFor what purpose do you cyberloaf during class with a cellphone?ò was used.

Finally, the survey contained validation measures, such as test time and validity items, in order to determine which participants were eligible to include in the study. The Qualtrics platform provided a feature that recorded the amount of time a participant took to complete the survey. On average, participants took 5 minutes to complete the survey. With that information in mind, data from participants who took less than 3 minutes to complete the survey were removed from the study as such a short time strongly implies that participants were not properly reading the questions. Additionally, the survey contained four validity items testing whether participants were paying attention to the survey questions Question 8 (e.g.: ñFor validity purposes, please mark ôDisagreeô for this questionò). If participants did not answer these questions appropriately (mark the answer requested), these participants were removed from the study. Of the original 176 participants in the survey, 35 were removed due to not passing the validation measures included in the study.

CHAPTER III: RESULTS

In addition to tests of Hypotheses 1, 2, 3a, 3b, and 4, the frequency of different types of cyberloafing performed with cellphones and laptops were explored.

Types of Cellphone and Laptop Cyberloafing Behaviors. To analyze the most common types of in-class cyberloafing, two frequency tables were constructed to count types of cyberloafing with either cellphones or laptops.

In Table 1, results indicated that among cellphone cyberloafing activities, 30.5% of students used Facebook, 14.9% of students participated in online shopping, 39.7% used Twitter, 13.5% either downloaded music or watched videos, 9.9% participated in either gaming or gambling, 88.7% participated in text messaging, and 14.1% claimed to not participate in cyberloafing with a cellphone at all during class.

In Table 2, results indicated that among laptop cyberloafing activities, 27.7% of students used Facebook, 23.4% participated in online shopping, 14.2% used Twitter, 9.9% either downloaded music or watched videos, 5.0% participated in either gaming or gambling, and 56% of students claimed to not participate in cyberloafing with a laptop at all during class.

Table 1. *Percentage (N) of Type of In-Class Cellphone Cyberloafing.*

	Activity					
	Facebook	Online Shopping	Twitter	Downloading Music/Watching Videos	Gaming/Gambling	Text Message
Yes	31%(43)	15%(21)	40%(56)	14%(19)	9%(14)	88%(125)
No	69%(98)	85%(120)	60%(85)	86%(122)	91%(127)	12%(16)

Table 2. *Percentage (N) of Type of In-Class Laptop Cyberloafing*.

	Activity				
	Facebook	Online Shopping	Twitter	Downloading Music/Watching Videos	Gaming/Gambling
Yes	28%(39)	23%(33)	14%(20)	10%(14)	5%(7)
No	72%(102)	77%(108)	86%(121)	90%(127)	95%(134)

Psychometric Analyses

As seen in Table 3, the Cronbachôs alpha with all sixteen Cellphone Attitude items included was .816. Only one of the sixteen items was deleted to increase the overall measureôs alpha value (to .822): ñCell phones can potentially be used by some students to gain an unfair advantage on quizzes or exams.ò

Table 3. *Reliability Analysis on Cellphone Attitude Items*

Item	Alpha	Alpha if Item Deleted
	.816	
Using a cell phone to make calls or check messages in class is never appropriate.		.803
Using a cell phone to send text messages or check email in class is never appropriate.		.795
Using a cell phone to send text messages or check email in class is appropriate when the lecture is not interesting.		.805
Cell phone use in class is appropriate only if it does not involve talking, beeping, or other noises.		.793

Cell phone use in class is appropriate only if it is done quietly and the phone is being used to look up information that is relevant to the class material being discussed.	.817
It is appropriate for a student to send/answer email or text using a cell phone during class.	.793
It is disruptive when another student's cell phone goes off (rings or makes other noises) during class.	.811
Students who let their cell phones ring or make other noises in class are being rude or disrespectful.	.814
Any use of cell phones in class is generally disruptive to the learning process.	.794
Certain types of cell phone use in class can assist in the learning process.	.816
If the instructor asks students to turn off their cell phones, students should be required to do so.	.810
It is appropriate for instructors to prohibit the use of cell phones during an exam.	.815
Cell phones can potentially be used by some students to gain an unfair advantage on quizzes or exams.	**.822**
It is okay for instructors to answer a cell phone call during class as long as they leave the classroom.	.804
It is okay for students to answer a cell phone call during class as long as they leave the classroom.	.809
Instructors should allow the use of a cell phone in class as long as the device is completely silent.	.797

Note. Boldface type indicates item that was deleted from scale and therefore not used in statistical analysis.

Another reliability analysis was conducted in order to get information on which items could be deleted to increase Cronbachôs alpha for the Laptop Attitude Items. The results of the reliability analysis are shown in Table 4. The Cronbachôs alpha, including all seven items, was .690. As seen in the table, no items could have increased Cronbachôs alpha by being deleted.

Table 4. *Reliability Analysis on Laptop Attitude Items*

Item Number	Alpha	Alpha if Item Deleted
	.690	
Laptop computers are useful and should be permitted in the classroom.		.665
Laptop computers are useful and should be a required part of every course.		.667
The use of laptops in class creates an unfair advantage for those students who own laptops over those students who do not.		.657
It is distracting when other students surf the web during class using a laptop computer.		.671
It is appropriate for a student to send or answer email using a laptop during class.		.647
Instructors should allow the use of a laptop in class as long as the device is completely silent.		.637
It is appropriate for an instructor to insist that students close or put away their laptops during class.		.650

Tests of Hypotheses

Hypothesis 1: Age. It was hypothesized that older students would be less accepting of cyberloafing in class than younger students.

There was no significant correlation found between age and attitude toward cellphones, r_s = -.005. p = .954, but there was a significant negative relationship between age and use of laptops in class, r_s = -.227. p = .007. Thus, Hypothesis 1 was supported in part.

Hypothesis 2: Frequency of use. It was predicted that the majority of students would report using their electronic devices in the classroom. Statistically, Hypothesis 2 equates to p Ò .5, where p is the proportion of students reporting that they do not use these devices. To investigate Hypothesis 2, an exact binomial test was conducted. For cellphones, it was found that P(Y Ó129 | N = 141, p = .5) = P(Y Ò12 | N = 141, p = .5) = < .001. For laptops,

it was found that P(Y Ó65 | N = 141, p = .5) = P(Y Ò76 | N = 141, p = .5) = .84. Based on this exact binomial test, Hypothesis 2 was confirmed in regards to cellphones, but not laptops.

Hypothesis 3a, 3b: Sex differences. Because of positive skewness in the usage data, nonparametric analysis (Mann-Whitney U) was employed to investigate sex differences in the use of cellphones and laptops in class. Women reported using cell phones significantly more frequently (*Mdn* = 4, *SD* = 1.74) than did men (*Mdn* = 3, *SD* = 1.56), z = 2.57, p = .01but the sex difference fell short of significance in regards to laptop use, z = 1.39, p = .16: For women, *Mdn* = 1.5, *SD* = 1.75. For men, *Mdn* = 1, *SD* = 1.31. These data did not support Hypothesis 3a. Instead of men cyberloafing more than women in class, the opposite was shown to be true - specifically with cellphones. Men and women showed no significant differences in the use of laptops for non-academic purposes during class.

To test Hypothesis 3b, independent *t*-tests were conducted. Regarding cellphone attitudes, an independent *t*-test revealed no significant difference between men (*M* = 2.82, *SD* = .57) and women (*M* = 2.88, *SD* = .58), *t(105.1)* = .278, p = .78. For laptop attitudes, an independent t-test revealed no significant difference between men (*M* = 3.43, *SD* = .61) and women (*M* = 3.40, *SD* = .64), *t*(105.6) = .646, p = .520. These results did not support Hypothesis 3b; attitudes toward using cellphones or laptops during class were not significantly different between males and females.

Hypothesis 4: Subjective norms and attitudes toward cyberloafing. To Test Hypothesis 4, bivariate correlation analyses were conducted to observe the relationship between perceived societal norms of in-class cyberloafing (a facet of the Theory of Planned Behavior) and attitudes toward cyberloafing behaviors. The relationship between perceived societal norms regarding the in-class use of cellphones and reported attitudes toward cyberloafing behaviors

with cellphones was significant, $r(139) = .312$, $p < .001$. However, the relationship between perceived societal norms regarding the in-class us of laptops and reported attitudes toward cyberloafing behaviors with laptops was not significant, $r(139) = .149$, $p = .078$.

CHAPTER IV: DISCUSSION

Hypothesis 2 and Hypothesis 4 were supported in the study; however, Hypotheses 1, 3a and 3b were not supported. Though Hypothesis 3a predicted that men would cyberloaf in class more often than women, as suggested in Lim (2012), the present study found the opposite to be true ï primarily regarding cellphones. Interestingly, women not only engaged in more cellphone cyberloafing activities in class than men, they did so significantly more. This was not the case for using a laptop in class, where no significant differences were found between sexes.

Implications of Results

No significant negative correlation between age and positive attitudes toward cyberloafing was found. Prensky (2001) made the case that the younger one is, the more experience they will have with technology ï leading to younger individuals being ñdigital nativesò, or those who feel technology is an intimate part of life. In addition, Campbell (2006) found that the younger individuals were, the more likely they were to perceive in-class cyberloafing as acceptable. Despite these sources being the primary foundations for Hypothesis 1, Hypothesis 1 was not supported in the study.

Previous research, by Tindell & Bohlander (2012), supports the idea that most college students engage in cyberloafing activities during class. In their study, it was found that 95% of students bring their phones to class every day, 92% use their phones to text during class time, and 10% admit they have texted during an exam on at least one occasion. Additionally, in a study conducted with a sample of 195 graduate students from Arizona and Illinois campuses, 34.9% claimed to use their cell phone during class time (Burns & Lohenry, 2010). Results also support these earlier findings, but only in regards to cellphones - not laptop usage. A possible reason for this finding is that cyberloafing with a cellphone is more discrete than using a

laptop. Additionally, many students use laptops during class to take notes; this could possibly lead students to cyberloaf less on a laptop as they may already be using it for academic purposes.

Upon observing sex differences in behaviors and perceptions of in-class cyberloafing, the findings opposed previous research. For example, Lim & Chen (2009) found that men perceived cyberloafing as more acceptable and displayed more cyberloafing behaviors than women. However, the findings displayed the opposite, showing women used cellphones to cyberloaf more than men in class. On the other hand, there was no significant difference at all between men and women using laptops to cyberloaf in class. Regarding perceptions of appropriateness, there were no significant differences between men and women regarding the use of either cellphone or laptops to cyberloaf during class. A possible reason for this lies in cultural differences; Lim & Chenôs study was conducted with an Asian sample, and this present study was conducted in the United States. Additionally, Lim and Chen (2009) looked at cyberloafing in the workplace, not in classrooms. With both cultural and contextual differences between studies, it is quite possible that where one cyberloafs (work or class/Asia or the United States) may make a difference (Rosenfield & OôConnor-Petruso, 2014).

From the Theory of Planned Behavior (Ajzen, 1991), it was hypothesized in the current study that the more a student believed cyberloafing in class was a societal norm, the more likely they would have positive attitudes toward academic cyberloafing behaviors. In other words, if students viewed cyberloafing in class to be a normal activity in todayôs society, they were significantly more likely to display lenient attitudes toward cyberloafing in class. The relationship between perceived societal norms regarding the in-class use of cellphones and reported attitudes toward cyberloafing behaviors with cellphones was significant, $r(139) = .312$, $p = .000$. However, the relationship between perceived societal norms regarding the in-class use

of laptops and reported attitudes toward cyberloafing behaviors with laptops was not significant, $r(139) = .149$, $p = .078$. The findings support the theory of subjective norms; the more you perceive a behavior to be normal in society, the more likely you are to believe it is acceptable. The relationship between perceiving in-class cyberloafing to be a societal norm and having a positive attitude toward academic cyberloafing with a cellphone seems to be rather intuitive, but it is exciting that these findings support the theory.

Finally, the most common forms of academic cyberloafing were observed. Among cellphone cyberloafing activities, 30.5% of students used Facebook, 14.9% of students participated in online shopping, 39.7% used Twitter, 13.5% either downloaded music or watched videos, 9.9% participated in either gaming or gambling, 88.7% participated in text messaging, and 14.1% claimed to not participate in cyberloafing with a cellphone at all during class. Among laptop cyberloafing activities, 27.7% of students used Facebook, 23.4% participated in online shopping, 14.2% used Twitter, 9.9% either downloaded music or watched videos, 5.0% participated in either gaming or gambling, and 56% of students claimed to not participate in cyberloafing with a laptop at all during class. It comes as no surprise that the majority of students used text messaging services to cyberloaf with cellphones, with social media outlets like Twitter and Facebook coming in second and third respectively. Regarding laptop cyberloafing, most students claimed to not use laptops to cyberloaf at all, with Facebook being the most popular form of cyberloafing among those who did.

Limitations and Future Research

This research aimed to discover differences among undergraduate students that may shed light on which subpopulations of students are most likely to cyberloaf during class. A limitation in this study is that the survey asks students to reveal how much they cyberloaf during class ï an

inherently self-incriminating act. Although this is unavoidable due to the nature of the research questions, it is something that respondents may be reluctant to answer if they believe it is self-incriminating. For future research, it might be wise to try to make it as clear as possible that the survey is completely and totally anonymous. Hopefully, this allows students to be truthful and forthright.

An additional limitation is that students were not evenly distributed in regards to age and sex. If at all possible, future researchers should aim to gather as large a sample as possible with a distribution among sex and age groups that is as even as possible. The bigger the sample, the more power the research contains.

Future research should aim to uncover differences between students and faculty in regards to perceptions of cyberloafing and cyberloafing behaviors. Although observing differences between students can lead to a better understanding of the current undergraduate population and their relationship with cyberloafing, it would be interesting to observe the differences among faculty and students as the comparisons would be cross-generational. Such insights could shed light on the relationship between students and faculty members and how they perceive and behave with electronic devices in the classroom.

Conclusions

The current research investigated a sample of 141 undergraduate and their experiences with in-class cyberloafing. Age was not a significant predictor of attitudes toward in-class cyberloafing. Although most students cyberloafed during class, it proved to only be the case with cellphones and not laptops. Additionally, women were significantly more likely to cyberloaf in class than were men.

Another finding revealed that a studentsô perception of societal norms was a significant predictor of how lenient their attitude was toward cyberloafing in class. Specifically, if students thought it was a normal in todayôs society for a student to cyberloaf during class, they were significantly more likely to have lenient attitudes toward cyberloafing in class. This was specifically found to be true in regards to cellphones, but not laptops. This finding supports a portion of the Theory of Planned Behavior. Regarding the form in which students cyberloafed, students claimed to mostly cyberloaf with text messaging (on cellphones) and Facebook (on laptops). Cyberloafing is an intriguing topic, and one that is very deserving of attention in the academic community. I hope my findings on academic cyberloafing help future classrooms enhance the educational experience for students.

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APPENDIX A: INFORMED CONSENT & SURVEY INSTRUMENT

Informed Consent

You are being invited to participate in a research study titled ñAcademic Cyberloafing: A Study of Perceptual and Behavioral Differences on In-Class Cyberloafing between Students and Facultyò being conducted by Reid Knight, a graduate student at East Carolina University in the Psychology department. The goal is to survey 400 students at East Carolina University. The survey will take approximately 10-15 minutes to complete. It is hoped that this information will assist us to better understand the perceptions and behaviors of students regarding the in-class use of electronics. With the exception of your Banner ID, the survey is anonymous: your Banner ID will only be used to validate your current GPA. All efforts will be taken to ensure that all of your information is kept private and used **only** for our research purposes. Your participation in this study is voluntary. You may choose not to answer any or all questions, and you may stop at any time. There is no penalty for not taking part in this research study. Please call Reid Knight at 205-767-2802 for any research related questions or the Office of Research Integrity & Compliance (ORIC) at 252-744-2914 for questions about your rights as a research participant.

Qualtrics Academic Cyberloafing Survey

Demographic Information:

Please provide your Banner ID:

(Fill in the Blank)

Please provide your GPA:

(Fill in the Blank

Please indicate your class:

- Freshman
- Sophomore
- Junior
- Senior

Please provide your age:

(Fill In The Blank

Please indicate your sex:

- Men
- Women

Please indicate your ethnicity:

- Asian
- Black
- Caucasian
- Hispanic
- Native American
- Pacific Islander
- Multiethnic

Section I: Please answer the following questions as accurately as possible.

Do you own a cell phone?

- Yes
- No

Please indicate your cell phone use on a typical day:

- None
- < 10 minutes
- 10-30 minutes
- 30-60 minutes
- 1-2 hours
- 2-3 hours
- > 3 hours

Do you have access to a computer or laptop? (Choose all that apply)

- Own a desktop
- Own a laptop
- Computer at work
- Computer at school

Please indicate your computer/laptop use on a day when school is in session:

- None
- < 1 hour
- 1-2 hours
- 2-4 hours
- 4-6 hours
- > 6 hours

Section II: Please indicate the level to which you agree with the statements below.

Using a cell phone to make calls or check messages in class is never appropriate.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Using a cell phone to send text messages or check email in class is never appropriate.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Using a cell phone to send text messages or check email in class is approprate when the lecture is not interesting:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

For validity purposes, please mark ñDisagreeò for this question.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Cell phone use in class is appropriate only if it does not involve talking, beeping, or other noises:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Cell phone use in class is appropriate only if it is done quietly and the phone is being used to look up information that is relevant to the class material being discussed:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

It is appropriate for a student to send or answer email or to text using a cell phone during class:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

It is disruptive when another student's cell phone goes off (rings or makes other noises) during class:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Students who let their cell phones ring or make other noises in class are being rude or disrespectful:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Any use of cell phones in class is generally disruptive to the learning process:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Certain types of cell phone use in class can assist in the learning process:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

If the instructor asks students to turn off their cell phones during class, students should be required to do so:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

It is appropriate for instructors to prohibit the use of cell phones during an exam:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

It is appropriate for instructors to collect students' cell phones during an exam:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

For validity purposes, please mark ñAgreeò for this question.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Cell phones can potentially be used by some students to gain an unfair advantage on quizzes or exams:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

It is okay for instructors to answer a cell phone call during class as long as they leave the classroom:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

It is okay for students to answer a cell phone call during class as long as they leave the classroom:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Instructors should allow the use of a cell phone in class as long as the device is completely silent:

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Section III: Please indicate the level to which you agree with the statements below.

Laptop computers are useful and should be permitted in the classroom.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Laptop computers are useful and their use in class should be a required part of every course.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

The use of laptops in class creates an unfair advantage for those students who own laptops over those students who do not.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

It is distracting when other students surf the web during class using a laptop computer.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

It is appropriate for a student to send or answer email using a laptop during class.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Instructors should allow the use of a laptop in class as long as the device is completely silent.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

For validity purposes, please mark ñNeutralò for this question.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

It is appropriate for an instructor to insist that students close or put away their laptops during class.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Section IV

Most people would agree that a student using a cellphone in class, for non-academic purposes, is a societal norm.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Most people would agree that a student using a laptop in class, for non-academic purposes, is a societal norm.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Section V

I am confident that I could keep myself from checking my cellphone (for non-academic purposes) for an entire class period, if I wanted to.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

I am confident that I could keep myself from using my laptop (for non-academic purposes) for an entire class period, if I wanted to.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

Section VI:

How often do you use/check cellphones during class for non-academic (texting, surfing the internet, using social media, etc.) purposes?

- Never
- Once
- 2-3 times
- 4-6 times
- More than 6 times

If you use your cellphone during class for non-academic purposes, for what purpose do you generally use it?

- Facebook
- Online Shopping
- Twitter
- Downloading Music or Watching Videos

- Gaming or Gambling
- Text Messaging

How often do you use laptops during class for non-academic (texting, surfing the internet, using social media, etc.) purposes?

- None
- Once
- 2-3 times
- 4-6 times
- More than 6 times

If you use your laptop during class for non-academic purposes, for what purpose do you generally use it?

- Facebook
- Online Shopping
- Twitter
- Downloading Music or Watching Videos
- Gaming or Gambling

During class, do you only use your cell phone during emergency situations?

- Yes
- No

For validity purposes, please mark ñStrongly Disagreeò for this question.

Strongly Disagree *Disagree* *Neutral* *Agree* *Strongly Agree*

When a professor tells the class to turn off cellphones before class starts, do youé

- Turn it off

- Set to vibrate
- Do nothing
- I donôt bring my phone to class

APPENDIX B: IRB APPROVAL DOCUMENTATION

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board Office
4N-70 Brody Medical Sciences Building · Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office 252-744-2914 · Fax 252-744-2284 · www.ecu.edu/irb

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB
To: Reid Knight
CC: John Cope
Date: 3/4/2016
Re: UMCIRB 16-000198

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) is for the period of 3/4/2016 to 3/3/2017. The research study is eligible for review under expedited category #7. The Chairperson (or designee) deemed this study no more than minimal risk.
Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB.
The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.
Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).
The approval includes the following items:

Name	Description
Academic Cyberloafing	Study Protocol or Grant Application
Academic Cyberloafing Survey	Surveys and Questionnaires
Academic Cyberloafing Survey	Data Collection Sheet
Informed Consent and Demographics	Surveys and Questionnaires
Informed Consent Statement	Consent Forms

The Chairperson (or designee) does not have a potential for conflict of interest on this study.
IRB00000705 East Carolina U IRB #1 (Biomedical) IORG0000418
IRB00003781 East Carolina U IRB #2 (Behavioral/SS) IORG0000418
Study.PI Name:
Study.Co-Investigators:

APPENDIX C: ITEMS TABLE

Items Table

	Response	Response %
Q1: Do you own a cellphone?		
Yes	141	100%
No	0	0.0%
Total	141	100%
Q2: Do you have access to a computer or laptop? (More than one answer may be chosen for this question)		
Own a desktop	14	10.0%
Own a laptop	136	96.5%
Computer at work	12	8.5%
Computer at school	55	39.0%
Q3: Using a cell phone to make calls or check messages in class is never appropriate.		
Strongly Disagree	9	6.4%
Somewhat Disagree	43	30.5%
Neither Agree nor Disagree	21	14.9%
Somewhat Agree	43	30.5%
Strongly Agree	25	17.7%
Total	**141**	**100%**
Q4: Using a cell phone to send text messages or check email in class is never appropriate.		
Strongly Disagree	13	9.2%
Somewhat Disagree	57	40.4%
Neither Agree nor Disagree	22	15.6%
Somewhat Agree	35	24.8%
Strongly Agree	14	10.0%
Total	**141**	**100%**
Q5: Using a cell phone to send text messages or check email in class is appropriate when the lecture is not interesting.		
Strongly Disagree	28	19.9%
Somewhat Disagree	48	34.0%
Neither Agree nor Disagree	39	27.7%
Somewhat Agree	24	17.0%
Strongly Agree	2	1.4%
Total	**141**	**100%**
Q6: Cell phone use in class is appropriate only if it does not involve talking, beeping, or other noises.		

Strongly Disagree	11	7.8%
Somewhat Disagree	24	17.0%
Neither Agree nor Disagree	17	12.1%
Somewhat Agree	71	50.4%
Strongly Agree	18	12.8%
Total	**141**	**100%**
Q7: Cell phone use in class is appropriate only if it is done quietly and the phone is being used to look up information that is relevant to the class material being discussed.		
Strongly Disagree	4	2.8%
Somewhat Disagree	13	9.2%
Neither Agree nor Disagree	17	12.1%
Somewhat Agree	69	48.9%
Strongly Agree	38	27.0%
Total	**141**	**100%**
Q8: It is appropriate for a student to send/answer email or text using a cell phone during class.		
Strongly Disagree	14	9.9%
Somewhat Disagree	31	22.0%
Neither Agree nor Disagree	41	29.1%
Somewhat Agree	46	32.6%
Strongly Agree	9	6.4%
Total	**141**	**100%**
Q9: It is disruptive when another student's cell phone goes off (rings or makes other noises) during class.		
Strongly Disagree	1	0.7%
Somewhat Disagree	7	5.0%
Neither Agree nor Disagree	14	10.0%
Somewhat Agree	52	37.1%
Strongly Agree	66	47.1%
Total	**141**	**100%**
Q10: Students who let their cell phones ring or make other noises in class are being rude or disrespectful.		
Strongly Disagree	1	0.7%
Somewhat Disagree	13	9.2%
Neither Agree nor Disagree	13	9.2%
Somewhat Agree	45	31.9%
Strongly Agree	69	48.9%
Total	**141**	**100%**
Q11: Any use of cell phones in class is generally disruptive to the learning process.		
Strongly Disagree	18	12.9%
Somewhat Disagree	37	26.4%

Neither Agree nor Disagree	29	20.7%
Somewhat Agree	41	29.3%
Strongly Agree	15	10.7%
Total	**141**	**100%**
Q12: Certain types of cell phone use in class can assist in the learning process.		
Strongly Disagree	1	0.7%
Somewhat Disagree	6	4.3%
Neither Agree nor Disagree	16	11.3%
Somewhat Agree	73	51.8%
Strongly Agree	45	31.9%
Total	**141**	**100%**
Q13: If the instructor asks students to turn off their cell phones, students should be required to do so.		
Strongly Disagree	4	2.8%
Somewhat Disagree	19	13.5%
Neither Agree nor Disagree	24	17.0%
Somewhat Agree	48	34.0%
Strongly Agree	46	32.6%
Total	**141**	**100%**
Q14: It is appropriate for instructors to prohibit the use of cell phones during an exam.		
Strongly Disagree	1	0.7%
Somewhat Disagree	5	3.5%
Neither Agree nor Disagree	14	9.9%
Somewhat Agree	25	17.7%
Strongly Agree	96	68.1%
Total	**141**	**100%**
Q15: It is appropriate for instructors to collect students' cell phones during an exam.		
Strongly Disagree	37	26.2%
Somewhat Disagree	43	30.5%
Neither Agree nor Disagree	16	11.3%
Somewhat Agree	26	18.4%
Strongly Agree	19	13.5%
Total	**141**	**100%**
Q16: Cell phones can potentially be used by some students to gain an unfair advantage on quizzes or exams.		
Strongly Disagree	2	1.4%
Somewhat Disagree	4	2.8%
Neither Agree nor Disagree	12	11.3%
Somewhat Agree	55	18.4%
Strongly Agree	68	13.5%

Total	**141**	**100%**
Q17: It is okay for instructors to answer a cell phone call during class as long as they leave the classroom.		
Strongly Disagree	20	14.2%
Somewhat Disagree	26	18.4%
Neither Agree nor Disagree	33	23.4%
Somewhat Agree	51	36.2%
Strongly Agree	11	7.8%
Total	**141**	**100%**
Q18: It is okay for students to answer a cell phone call during class as long as they leave the classroom.		
Strongly Disagree	11	7.8%
Somewhat Disagree	21	14.9%
Neither Agree nor Disagree	23	16.3%
Somewhat Agree	62	44.0%
Strongly Agree	24	17.0%
Total	**141**	**100%**
Q19: Instructors should allow the use of cell phones in class as long as the device is completely silent.		
Strongly Disagree	11	7.8%
Somewhat Disagree	22	15.6%
Neither Agree nor Disagree	43	30.5%
Somewhat Agree	52	36.9%
Strongly Agree	13	9.2%
Total	**141**	**100%**
Q20: Laptop computers are useful and should be permitted in the classroom.		
Strongly Disagree	1	0.7%
Somewhat Disagree	2	1.4%
Neither Agree nor Disagree	7	5.0%
Somewhat Agree	63	44.7%
Strongly Agree	68	48.2%
Total	**141**	**100%**
Q21: Laptop computers are useful and should be a required part of every course.		
Strongly Disagree	20	14.2%
Somewhat Disagree	33	23.4%
Neither Agree nor Disagree	40	28.4%
Somewhat Agree	34	24.1%
Strongly Agree	14	9.9%
Total	**141**	**100%**
Q22: The use of laptops in class creates an unfair advantage for those students who own laptops		

over those who do not.		
Strongly Disagree	15	10.6%
Somewhat Disagree	39	27.7%
Neither Agree nor Disagree	46	32.6%
Somewhat Agree	32	22.7%
Strongly Agree	9	6.4%
Total	**141**	**100%**
Q23: It is distracting when others students surf the web during class using a laptop computer.		
Strongly Disagree	20	14.2%
Somewhat Disagree	41	29.1%
Neither Agree nor Disagree	20	14.2%
Somewhat Agree	47	33.3%
Strongly Agree	13	9.2%
Total	**141**	**100%**
Q24: It is appropriate for a student to send or answer email using a laptop during class.		
Strongly Disagree	7	5.0%
Somewhat Disagree	24	17.0%
Neither Agree nor Disagree	38	27.0%
Somewhat Agree	56	39.7%
Strongly Agree	16	11.3%
Total	**141**	**100%**
Q25: Instructors should allow the use of a laptop in class as long as the device is completely silent.		
Strongly Disagree	2	1.4%
Somewhat Disagree	3	2.1%
Neither Agree nor Disagree	26	18.6%
Somewhat Agree	64	45.7%
Strongly Agree	45	32.1%
Total	**140**	**100%**
Q26: It is appropriate for an instructor to insist that students close or put away their laptops during class.		
Strongly Disagree	13	9.2%
Somewhat Disagree	33	23.4%
Neither Agree nor Disagree	41	29.1%
Somewhat Agree	38	27.0%
Strongly Agree	16	11.3%
Total	**141**	**100%**
Q27: Most people would agree that a student using a cellphone in class, for non-academic purposes, is a societal norm.		
Strongly Disagree	0	0.0%
Somewhat Disagree	4	2.8%

Neither Agree nor Disagree	15	10.6%
Somewhat Agree	80	56.7%
Strongly Agree	42	29.8%
Total	**141**	**100%**
Q28: Most people would agree that a student using a laptop in class, for non-academic purposes, is a societal norm.		
Strongly Disagree	1	0.7%
Somewhat Disagree	11	7.8%
Neither Agree nor Disagree	17	12.1%
Somewhat Agree	76	53.9%
Strongly Agree	36	25.5%
Total	**141**	**100%**
Q29: I am confident that I could keep myself from checking my cellphone (for non-academic purposes) for an entire class period, if I wanted to.		
Strongly Disagree	1	0.7%
Somewhat Disagree	10	7.1%
Neither Agree nor Disagree	11	7.8%
Somewhat Agree	44	31.2%
Strongly Agree	75	53.2%
Total	**141**	**100%**
Q30: I am confident that I could keep myself from using my laptop (for non-academic purposes) for an entire class period, if I wanted to.		
Strongly Disagree	1	0.7%
Somewhat Disagree	5	3.5%
Neither Agree nor Disagree	7	5.0%
Somewhat Agree	43	30.5%
Strongly Agree	85	60.3%
Total	**141**	**100%**
Q31: How often do you use cellphones during class for non-academic (texting, surfing the internet, using social media, etc.) purposes?		
Once	12	8.5%
Twice	18	2.8%
Three	32	22.7%
Four	40	28.4%
Five	17	12.1%
Six	3	2.1%
Seven+	19	13.5%
Total	**141**	**100%**
Q32: For what purpose do you cyberloaf during class with a cellphone? (More than one answer may be chosen for this question.)		
Facebook	43	30.5%
Online Shopping	21	14.9%

Twitter	56	39.7%
Downloading Music or Watching Videos	19	13.5%
Gaming or Gambling	14	9.9%
Text Messaging	125	88.7%
Donôt Use During Class	20	14.2%

Q33: How often do you use laptops during class for non-academic (texting, surfing the internet, using social media, etc.) purposes?		
Once	76	53.9%
Twice	19	13.5%
Three	19	13.5%
Four	11	7.8%
Five	9	6.4%
Six	3	2.1%
Seven+	4	2.8%
Total	**141**	**100%**

Q34: For what purpose do you cyberloaf during class with a laptop? (More than one answer may be chosen for this question.)		
Facebook	39	27.7%
Online Shopping	33	23.4%
Twitter	20	14.2%
Downloading Music or Watching Videos	14	9.9%
Gaming or Gambling	7	5.0%
Donôt Use During Class	79	56.0%

Q35: During class, do you only use your cell phone during emergency situations?		
Yes	38	27.0%
No	103	73.0%
Total	**141**	**100%**

Q36: When a professor tells the class to turn off cellphones before class starts, do you…		
Turn It Off	42	29.8%
Set to Vibrate	90	63.8%
Do Nothing	8	5.7%
I Donôt Bring My Phone to Class	1	0.7%
Total	**141**	**100%**