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Mixed Signals: The Effects of Cell Phones on College Student Involvement

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Abstract

American college students lead the United States of America in cell phone use. This study utilized a *phenomenological* qualitative methodology to learn the lived experience of college student cell phone users and the effects of cell phones on co-curricular learning, per Alexander Astin's (1986) theory of involvement. The rapid rise and evolution of the cell phone impacts student behavior and learning. The results of the study indicated that cell phones promote student participation with peers and on-campus programs, but are unlikely to affect involvement with faculty or staff. Experientially, participants were critical of their peers' cell phone behavior, feared missing out, and favored face-to-face to communication in almost all contexts. Nevertheless, participants perceived cell phones mostly positively, even though they described the devices' undesired effects most frequently, believing cell phones are necessary to stay socially connected and informed during college.

Keywords: student involvement, cell phones, sense of belonging

Introduction

Mobile technology devices, from portable music players to tablets, help define the twenty-first century and the young adults who have grown up in it. As a result of their close connection with widely available multimedia electronics and the Internet, those born in the early 1990s to the present are known by their relationship with technology, labeled the *iGeneration*, *Generation M* (i.e., multitasking), and the *Net Generation* (Rosen & Cheever, 2010). But however familiar the PC, Mac, iPod, and iPad may be to Millennials, chief among technologies is the cell phone.

The global prevalence, popularity, and pervasiveness of cellular telephones grew tremendously in recent years. From 2005 to 2009 worldwide cell phone subscribers grew 109%, from 2.2 billion to 4.6 billion (International Telecommunications Union, 2010; MobiThinking, 2011). In 2010 alone, cell phone subscribers totaled 5.3 billion, sent 6.9 trillion text messages and, by the end of 2011, eclipsed more than 8 trillion texts sent each year (International Telecommunications Union, 2010; MobiThinking, 2011). In other words, in 2010 subscribers totaling more than three quarters of the world's population sent nearly 1.6 billion texts each day, and more than 1.8 billion texts every 24 hours a mere year later.

In the United States of America, one of the top countries for cell phone usage, 86% of people own a cell phone (Cell Signs, 2008). Leading the population are American college students, of whom 94% have a cell phone, 85% use text messaging, and 75% send texts every day (Student Affairs Administrators in Higher Education, 2008). Essentially, to be a college student is to own a cell phone. But what is often overlooked are the factors that account for the sudden growth in the use of this device among college students.

According to Wei and Lo (2006), the cell phone's swift growth in popularity is due to the technology's rapid evolution, from a business necessity and luxury item owned by a few, to an obligatory social device. Cell phones connect friends, parents, and children and, especially for parents of females, are a safety device which no daughter is to leave home without (Aoki & Downes, 2003). In the process, the cell phone advanced from a rudimentary communicator into a multimedia device with millions of applications, the ability to take photos, record video, and access the Internet, putting numerous methods for communication at users' disposal.

As a result of its rapid evolution and due to the constant contact the mobile device makes possible, cell phones profoundly shape college student behavior. Yet while the ability to communicate at any time from almost anywhere by voice or text is incredibly beneficial, the cell phone is also responsible for or linked to various undesired effects.

Research Intentions

Numerous cell phone-related issues affecting college students are known, including classroom interruptions (Burns, 2008; Campbell, 2006), impaired study memory (Smith, Isaak, Senette, & Abadie, 2011), lower relationship satisfaction and role performance (Ashforth, Kreiner, & Fugale, 2004; Beaver, Knox, & Zusman, 2010; Chesley, 2005), and high distress when separated from one's phone (Stam & Stanton, 2004). The effects of cell phones on the in-class experience are widely studied (Burns & Lohenry, 2008; Campbell, 2006; Rosen & Cheever, 2010). Yet research on the impact of cell phones on co-curricular learning is lacking.

Astin's theory of involvement. Alexander Astin's (1984) theory of involvement states that the more students are involved with the academic and social aspects of the college experience the more they learn and develop. Astin (1984) defined an involved student as one who devotes significant energy to academics, spends considerable time on campus, actively participates in student organizations and activities, and interacts frequently with faculty and staff. Involvement has both quantitative and qualitative features which impact student learning and development (Astin, 1984). That is, the more time (quantity) and seriousness (quality) a student devotes to their college experience, the more or less a student will learn and develop.

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Kuh and Love (2000) and Tinto (1993) suggested that student involvement is in large part the solution to student success, satisfaction, and retention problems. However, involvement requires energy and time. And students vary, as on a continuum, in the degree to which they can and choose to be involved in their education (Astin, 1984). As a device which promotes connection elsewhere and as a multi-media center with non-social features, cell phones can easily and significantly impact involvement. While no studies dealt directly with out-of-class learning, numerous studies suggest they considerably affect how college students relate with others and choose to be involved.

Purpose and Research Questions

At many faith-based institutions, an involved student community is a lauded element of their students' complete education (e.g., Christian Community, n.d.; Community Covenant, n.d.; Mission Statement, n.d.). That said, the effect cell phones have on students' co-curricular education is unstudied. Because no known research addresses the impact of cell phones on out-of-class learning, this study broadly sought to understand (1) what effect cell phones have on college students' out-of-class involvement with college peers, campus programs, and faculty and staff; and (2) what typifies the lived experience of college student cell phone users.

Literature Review

While 86% of Americans use a cell phone (Cell Signs, 2008), almost all American college students do. Yet, what most modifies phone use is a surprising variable. Jin and Park (2010) found that the more face-to-face interaction college students had the more they engaged their cell phone and the better their interpersonal motives were for using it. The literature shows that cell phones are used primarily to maintain already established relationships (Jin & Park, 2010; Leung & Wei, 2000; Wei & Lo, 2006). But while the motive to reinforce social bonds through electronics is not peculiar to cell phones, it is greatest among them.

Cell Phone Motives

College student cell phone users are highly motivated by a sense of belonging to a social community and use the device to preserve that connection. One example is students regularly scanning their phones to see if they need to respond (Braguglia, 2008).

In contrast to studies of landline telephones (Dimmick, Sikand, & Patterson, 1994; O'Keefe & Sulanowski, 1995), cell phones are used primarily for intrinsic or social reasons (e.g., companionship) much more than instrumental or utilitarian reasons (e.g., gathering information) (Jin & Park, 2010; Wei & Lo, 2006). Motives for using both landlines and cell phones include information gathering, social utility, and affection. Motives unique to cell phones include mobility, immediacy, fashion, and status (Jin & Park, 2010; Wei & Lo, 2006). Thus, as much as the cell phone is relied upon on-the-go and carried in case of a timely or emergency situation, much like a luxury timepiece which turns heads but also tells time, the cell phone also serves the less functional purpose of a stylish accessory. Cell phones are not simply mobile communicators; they are symbolic and expressive accessories showcasing one's personality, popularity, and taste (Jin, 2010; Wei & Lo, 2006).

When asked to place a price on their device, cell phone users tend to appraise their value higher than retail (Jin & Park, 2010; Wei & Lo, 2006). Linked to this valuation, individuals prioritize involvement with their cell phone over other sources of immaterial value which historically are more respected.

Cell Phones and Well-being

In cell phone versus educational studies, cell phones almost always win (Jin & Park, 2010). Cell phone interactions often take precedence over physically present company as well. A recurring theme within the literature is lower relationship satisfaction and worse role performance (Ashforth, Kreiner, & Fugale, 2004; Beaver, Knox, & Zusman, 2010; Chesley, 2005).

Worse role performance. When people engage their phones in social settings, even briefly, others generally perceive they have socially disengaged (Beaver, Knox, & Zusman, 2010). An unspoken rule is broken: You may not be physically present but focused elsewhere (Beaver 2010; Burns, 2008; Campbell, 2006). Yet for those glancing at their phones, they are triggered by their sense of community and hear a different message: Someone elsewhere needs me. But the distractibility and sense of urgency arguably affects student learning most of all.

One of the most reported undesired effects of cell phones is learning interruptions. Burns and Lohenry (2010) found that the vast majority of both students and faculty (85.1% compared to 84.2%, respectively) believe cell phones distract studies. Smith, Isaak, Senette, and Abadie (2011) further demonstrated through 24 Deese-Roediger-McDermott lists that students' attention and memory functioned best without cell phone distractions during study sessions and performed worse when required to call or send a text. When presented with cell phone tasks, students' true memory (i.e., the ability to remember correct answers) was negatively affected across the board, regardless of allotted time of study (i.e., 1-30 minutes), whether they were required to take a call (40 out of 100 points possible), make a call (40/100) or, most significantly, send texts (29/100), as compared to having no distractions at all (62/100). Despite evidence that cell phones have considerable negative effects on academic success and social perceptions, the desire to stay connected through the device even when it is socially unacceptable is powerful and difficult to resist.

Dependence, ill-adjustment, and fauxcellarms. In an international study conducted by Naomi S. Baron (2008), when asked what they liked most about their mobile phones, students mentioned texting, but few mentioned talking. Students globally indicated that texting's stripped-down means for communication was preferred over voice calls and not because texts are non-invasive. Ironically, the majority of participants liked most their ability to contact others, but overwhelmingly liked least that others could contact them (Baron, 2008). *Reachability* exacts a heavy toll on users worldwide (Baron, 2008). Baron (2008) linked this toll to the relative newness of the technology. Students were still learning to adapt and struggling to cope with its ever-presence (Baron, 2008). Students, whether cognitively aware of it or not, were by and large ill-equipped to adjust alone.

A sizable number (especially in South Korea) claimed to be both dependent upon mobile phones and distressed by the device (Baron, 2008). Further, *fauxcellarms* or *phantom vibrations*, the widely reported sensation of a cell phone going off in the absence of a call or text, was a source of pride for some cell phone users but reflected a major downside of the technology for others: dependence (Simon, 2007).

Stam and Stanton (2004) asked students to give up one or more electronic devices for 48 hours and journal their experience. Laptops, televisions, and other electronic devices were included in the study. But those who gave up cell phones experienced the worst effects. These students reported great distress and heightened anxiety when separated from their cell phones, indicating strong dependence and greater personal connections to the device than other technologies (Stam & Stanton, 2004). As numerous studies confirm, dependence, separation anxiety, and distress are negative psychological effects cell phones have on college students (Ashforth, 2004; Beaver, 2010; Chesley, 2005; Reid & Reid, 2007; Stam, 2006).

Methods

The present study employed a phenomenological qualitative methodology to study student involvement and what impact cell phones have on it. A phenomenological research method helped obtain a rich initial understanding of the impact on involvement.

Data for the study was based on a nonrandom sample of undergraduate student volunteers at a small, Midwestern, faith-based residential college. To best understand the essence of the college student cell phone experience, purposive sampling was used. Seven participants, four males and three females, were interviewed. All participants actively used cell phones and partook in one-on-one interviews lasting approximately an hour.

Interviews were conducted in three series. Series one were semi-structured interviews, asking open-ended, broad questions. In series two and three, participants presented a less constrained description of their lived experience while the interviewer observed and explored the themes which emerged in the previous series in greater detail (Patton, 2002).

Findings

The following findings explore the impact cell phones have on the quantity and quality of college student involvement with peers, programs, faculty and staff, and the lived experience of college student cell phone users.

The Effect of Cell Phones on Student-Student Involvement

The most popular theme, expressed by all seven participants, was cell phones increase the quantity of involvement with college peers. In their experiences, texting frequently offered invitations to gather with groups of friends who were already together. On-going activities ushered a common sentiment: Cell phones are essential for college students to connect socially. A belief held by all seven participants was that spur-of-the-moment activities present a limited window of

opportunity and that without a cell phone they and others would socially miss out. However, many mixed signals were sent in relation to students' involvement with peers.

Effect on quantity of student-student involvement. Cell phones increased the quantity of in-person interactions with students with whom they had existing relationships, namely, students they lived with, classmates, and students with whom they shared leadership responsibilities. But a phenomenon which four participants noted was that when physically surrounded by strangers, they used their cell phones to engage friends elsewhere and passively dismissed students with whom they were physically present. A female participant complained, "Sometimes having a cell phone disconnects you from students because you'll find you use it a lot to not feel awkward... to make it look like you're preoccupied." When her roommate got a new smart phone, another participant said she felt shut out because for days in a row her roommate "would sit in bed for an hour or two and scroll through Instagram, get on the Internet or watch movies." As one participant summarized, "[students] are more interested in their phone than you." This was especially felt by students without the latest technology.

A student who did not own a smart phone expressed frustration at smart phone users for using their devices as "time fillers." The participants who used smart phones supported this notion, saying they used the non-calling and non-texting features of their phones most, namely browsers, Instagram, Facebook, and Twitter. A male said, "It's easy to get lost in devices, lost in another world where you are just interested in the information on the screen as opposed to the person in front of you." Yet, smart phone users did not believe such behavior was rude or wrong, at least not at first. Instead, they justified it on generational grounds, claiming constant use of technology, including in public areas and during meals, was socially acceptable. They believed that anti-social or rude cell phone behaviors were typical of daily student life, but were the fault of others, not themselves.

Satisfied with the regular interaction cell phones provided her, a female participant said, "I think with phones in general that the interaction with students may be more frequent but more superficial." While characterized primarily as social devices which promote student-to-student involvement through the phone and in person, participants emphasized that cell phones were best for quantity of involvement rather than quality involvement.

Effect on quality of student-student involvement. More stories that were critical of their peers' cell phone use were told than positive ones. This surprised the researcher, whose own experiences with the technology are vastly positive. Exploring this theme in the second and third series of interviews, five students

reflected that in reality their cell phone behavior was just as poor as their peers'. Though still critical of others, they recognized they were part of the problem and not immune to it. A prominent perception emerged: Cell phones promote shallow relationships and restrain relationships from developing and maturing. The cell phones' perceived negative effect on the quality of involvement with other students was so strong that participants indicated relational dissatisfaction continued even when interacting face-to-face, when cell phones were no longer present. Five of the seven participants reflected the belief that if they lived in a world with few cell phones, their relationships would be superior to the relationships they have now. The researcher wondered why participants' stories were so often negative. Perhaps the interview was a rare safe opportunity to talk about cell phone experiences unfiltered and that permitted participants to more often share negative stories.

The same five complained that texting conversations are often unclear, and when a response is not immediately received, one often wonders "is this person mad at me" and rarely assumes "their phone must be dead." Students believed that texting impaired their ability to communicate rich thoughts and emotions. A male participant shared, "We can say, 'oh I've texted them, talked on the phone.' Whatever. We're not getting any closer to truly knowing each other when it comes to cell phones and technology." Participants lamented the lack of depth in their relationships and believed cell phones were at fault for much of the superficiality and shallowness they experienced. Yet, participants noted their phones occasionally promoted quality conversations because they create a sense of safety.

Three participants stated that text messaging allowed them to have conversations too uncomfortable to have in person. "Because [text messaging] is kind of impersonal, you can say things you may not say face-to-face," a female participant offered. Conversely, a male emphasized,

There are much fewer risks involved in texting somebody information as opposed to telling them [face-to-face]... You can distance yourself from [their response]... You can say something... over text that you would never say to their face because you wouldn't want to deal with the reaction.

Whether an expression of cowardice or courage, cell phones facilitated vulnerable conversations because of the perceived safety provided. Nevertheless, participants overwhelmingly preferred to communicate by other means. All participants stated texting and voice calls were not their preferred means for communicating with others, and expressly stated they preferred to communicate face-to-face whenever possible.

The Effect of Cell Phones on Student-Program Involvement

All participants said cell phones increased the quantity of their participation in on-campus programs. Most of all, cell phones increased their awareness. When a friend texted that he or she was heading to a sanctioned event, participants were much more likely to go themselves. Illustrating this point, a female participant said:

When I'm not informed about what's going on [on campus] and then I personally get a text from someone, then I'll actually want to go... Sometimes it's an event I've heard about... But because someone has actually invited me, I'll go.

Two participants who held student leadership positions in their residence halls conveyed that when they invited students by text in addition to inviting them in person, they saw a notable increase in participation. Five of the seven participants stated that texted invites from friends were the most effective means to gain their participation.

The Effect of Cell Phones on Student-Faculty and -Staff Involvement

Participants struggled to answer the question "How do cell phones connect you with faculty or staff outside of class?" Two participants stated that they used voice calls and text messaging to contact a specific faculty member with whom they closely worked. However, they emphasized that the professor's casual personality, younger age, and personal invitation to contact him or her by text message made the professor a special case.

All seven participants sensed that, in general, faculty members are unfamiliar with cell phones and uncomfortable communicating with students through the device. They also perceived that cell phones are too casual and, therefore, inappropriate for contacting faculty. The main barrier was the perception that faculty and staff are respect-oriented. All seven participants believed that professionals preferred to be contacted by email rather than voice calls and, especially, texts. Even if professionals shared their cell phone numbers, participants still perceived they were likely unfamiliar with texting, uncomfortable being on close terms through cell phones with students, and might be offended if contacted by text.

Texting is one of the most frequent ways students communicate with others, including friends, family, significant others, and acquaintances, but not faculty or staff. For this reason, one male participant likened email to "texting for faculty." All seven participants stated they were much more comfortable contacting a professor or staff member by email than by cell phone even though they rarely did so.

The Lived Experience of College Student Cell Phone Users

One of the most surprising findings of the study was how psychologically attached college students are to cell phones and how frequently they communicated dependence. Without prompting, five of the seven participants mentioned *fauxcellarms* in their interview. All five participants excitedly shared that they had experienced phantom vibrations, phantom ringtones, and even the false sensation of their phone lighting up to indicate a call or text.

Describing his experience with fauxcellarms, a male participant explained, “You think that someone is calling [because] just having [a cell phone] with you all the time becomes a part of your life. It’s just like an extension of you, like an arm. And [human beings] weren’t really built for that.” Since cell phones are with students at all times, the same participant concluded, “[cell phones] can be negative because I think being solitary for a little while is good and can be a spiritual discipline. And not ever being able to have that I’d imagine would be pretty negative.”

The fear of missing out. Connected to fauxcellarms was one of the biggest fears and anxieties of college life: the fear of missing out. Participants feared that if they did not always have a cell phone near them they would miss out in some big way. That anxious sense revealed a sad fact: College students believe that apart from a cell phone they will not be contacted in person or by any other means. Reflecting that shared experience, a female participant added:

There have been times when I have left my cell phone in my room all day, and just the feeling of not having a cell phone now that I have had it so long is—I don’t want to say sickening—but [acting panicked] “I don’t have my cell phone!” I can’t tell if anyone is contacting me or if someone is calling me. What if I have to make a phone call? I’m very dependent on it even though I don’t use it all the time.

Similarly, a male participant added, “If the phone’s missing, something’s off balance. Sometimes my phone has more importance than my wallet.” Emphasizing the fear of being socially left out, another participant concluded, “I am anxious to know what’s going on, to remain connected. Because without my cell phone my personal feeling is [I am] not connected at all on a campus-wide basis.” Experiences with missing or broken cell phones validated this fear. A female participant lamented that people did not bother to contact her by any other means when her phone broke: “I looked at some of my old texts and I had missed some important things... Not having that communication put me outside [my social group].”

After losing her phone, a second female participant determined,

Because almost everyone else has that form of communication [a cell phone] becomes a necessity... If only 50% of the population had them, then not having one wouldn't really be that big a deal. But now that we have them—that instant communication—it's like if you don't have one people are like "What's wrong? How can we get a hold of you?"

Regardless why participants experienced fauxcellarms, past experiences with being socially left out prompted forms of anxiousness and fear.

Cell Phones: Positive, Negative or Mixed?

When asked how they would appraise cell phones overall, all seven participants said mostly positive. Not a single participant appraised cell phones negatively. Based on the frequency and number of cell phone complaints and amount of times participants criticized their peers' cell phone use, this universally positive impression was surprising. When asked why they believed cell phones were mostly positive in light of their complaints, all seven participants failed to rectify their positive opinions with their mostly negative descriptions. Perhaps the interview context allowed participants to share stories they would normally filter from conversation and maximized their opportunity. Whatever the reason is for the mostly negative stories and mostly positive overall impression of cell phones, these still reflect the lived experience for college students, while illustrating an opportunity for higher education professionals to help bridge this apparent gap.

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Discussion

The results of the study indicated that cell phones positively promote face-to-face out-of-class student involvement with other college students, increase students' participation in on-campus programs, but are unlikely to facilitate involvement with faculty and staff. Furthermore, the findings indicated that participants resented, blamed, and were dissatisfied with cell phones for the unsatisfactory quality of their relationships. Nevertheless, participants emphasized their perception of cell phones was mostly positive, even though they frequently described the devices' undesired and harmful effects, believing cell phones are necessary in order to stay socially connected and informed.

Face-to-Face Interaction

Congruent with Jin and Park (2010), the study confirmed that cell phone communication is a by-product of face-to-face relationships and not a replacement for them. The upside is that college students continue to engage face-to-face with

those they know. The downside is that when no familiar persons are present those same social motives can shut out those physically present. The premise that cell phones maintain existing relationships was further confirmed by students' frustrations. Participants had higher social expectations for their cell phone than what the device can realistically deliver. They believe cell phones improve and enhance relationships, but also are disenchanted by the negative effects which they experience daily.

Sense of Community

Research by Braguglia (2008), which linked cell phones users' sense of community to their constantly scanning their cell phones, was confirmed by participants' fear of missing out. Students' sense of belonging and involvement with peers is linked to success, satisfaction, and retention (Kuh & Love, 2000; Tinto, 1993). But cell phones hurt, not help, when students measure their belonging and worth based on the quantity and quality of cell phone interactions.

Participants emphasized the social benefits of cell phones and even stressed that utilitarian motives, such as information gathering, had mostly social ends. Jin (2010) and Wei and Lo (2006) found cell phones were used for social much more than utilitarian ends. But with smart phones commonplace, utilitarian motives like information gathering have greater social implications and minimize the distinction between intrinsic and instrumental motives. Essentially, with nearly every app having social network integration, everything college students can do on a cell phone will have, or be justified on, social ends.


Furthermore, participants saw smart phones as fashion statements and status symbols, for better or worse. Participants' experiences indicated the devices showcased their owners' personality, popularity, and taste (cf. Jin, 2010; Wei & Lo, 2006). And ironically, cell phones are both capable of socially connecting students as well as creating inequity among them. In practice, cell phones roughly represent college students' self-expressed identities.

Negative Cell Phone Experiences

Participants said cell phones produced anxiety, aligning with research by Baron (2008) and Simon (2007). The self-imposed need to immediately respond to others and fauxcellarm experiences indicated cell phone-related anxiety and potentially cell phone addiction. Baron (2008) found fauxcellarm experiences were similar to withdrawal symptoms. Integrating cell phones into programs can have the two-pronged effect of illustrating redemptive cell phone behavior (e.g., text-based live polling) and illustrate mindful habits that support a positive vision for cell phone use. Tech fasting, particularly, can improve the qualitative aspects of involvement, which were most lacking. Best of all, group fasts can illumine the

impact of cell phones while avoiding the fear of being socially left out that fasts otherwise promise.

Regardless of the kind of phone used, participants equated not having a cell phone with missing out and felt disconnected when separated from their phone. Stories of sadness, fear, frustration, and anxiety when separated from the device—though one expressed relief—confirmed the research of Stam and Stanton (2004), which indicated the average college student experiences sensations of high distress when separated from their device. These experiences bear serious implications. While cell phones may help students benefit from campus life, college students' mental, emotional, and social wellbeing are higher priority concerns than involvement. Far from entirely negative, cell phones have profoundly positive effects on student life. The challenge is that cell phones, especially smart phones, are a disruptive technology. New norms for relationships are quickly created and old norms complicated. Amidst this flux, opportunities for higher educators exist, namely, where relationship expectations and cell phones meet.

As long as the technology and the norms surrounding it are in flux, the college student cell phone experience will send mixed signals. Cell phones do not provide many benefits in terms of quality involvement. But involvement with peers and programs in terms of time and participation will generally profit as long as to be a college student is to own a cell phone. 

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