

The Impact of Digital Technology on Interpersonal Communication

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Table of Contents

- I. Introduction to the Problem/Question
- II. Highlights/Findings from the Literature
- III. Methodology
- IV. Findings
- V. Conclusion
- VI. References
- VII. Annotated Bibliography
- VIII. Appendixes

I. Introduction

This project investigated how the usage of digital technology impacts the way people communicate interpersonally, both positively and negatively. This research explored if individuals are less likely to engage in a face-to-face conversation due to technology availability and use. The research also dissected how individuals have altered their self-identification since using technology.

What prompted the investigation to this topic is the personal experience of the researcher speaking to an individual on Facebook, but not speaking to each other in-person out of fear. The reality is, many people may be experiencing hindered interpersonal skills due to technology. The research provided an understanding of how technology is positively and negatively impacting individuals' interpersonal skills, and their overall self-image.

The study is being guided and informed by the *Interpretative and Interaction Theory of Interpersonal Communication*. According to University of Twente (2017), this theory focuses solely on interpersonal communication, and its five axioms: one cannot not communicate; human beings communicate both digitally and analogically; communication = content + relationship; the nature of the relationship depends on how both parties punctuate the communication sequence; all communication is either symmetrical or complementary. The two axioms the researcher focused on primarily are “one cannot not communicate,” and “human beings communicate both digitally and analogically.” The growth of humans who use technology to communicate has significantly increased. Therefore, communication is nearly unavoidable. After being surrounded by individuals all day at work and school, going home to several mobile technologies prevent users from truly escaping. Individuals with mobile technologies are constantly communicating.

II. Highlights/Findings from Literature

In an early study titled, *Evaluating video as a technology for informal communication. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (1992), Robert Fish conducted a study 25 years ago to discover efficiency of a business video/audio conferencing system via the employees' desktop. Today, there is Skype for Business, Facebook Messenger, Slack, etc. to communicate with fellow employees without having to use face-to-face interaction. The author noted, "Collaborations in organizations thrive on communication that is informal because informal communication is frequent, interactive, and expressive. Informal communication is crucial for the coordination of work, learning an organization's culture, the perpetuation of the social relations that underlie of the social relations that underlie collaboration, and, in general, any situation that requires communication to resolve ambiguity" (Fish, 1992, p. 1). Fish's study informed the researcher that people prefer to use electronic systems to communicate, rather than a formal face-to-face conversation. Fish's research gave a basis as to how the survey methodology questions for this study will be framed.

Another study conducted five years later, *Friendship and social development in children and adolescents: The impact of electronic technology* (1997), Mark Griffiths' study allowed the researcher to conduct self-reflection as a young child. When the researcher was growing up, she never had up-to-date technology, therefore, consistently felt out of place. Griffiths discussed how children may not feel included with other children if they're not up-to-date on current technologies. The feelings of seclusion and unpopularity may be detrimental to a young child, and damage their social interaction skills, as well as their self-image. Griffiths conducted an observational study of boys and girls playing arcade games, as well as a survey of boys and girls who play home video games; boys were dominant in both categories. Griffiths highlighted the negative aspects of technology within children and adolescents. The findings helped inform my

study as the results displayed that there is more competition and less interaction between children, and adolescents, due to technologies. Griffiths encouraged the researcher to further investigate if the feelings of competition and less interaction prevent individuals from speaking face-to-face, and therefore, hinder interpersonal communication.

A study performed by Kumiko Aoki and Edward J. Downes drove the researcher's methodology. In the article titled *An analysis of young people's use of and attitudes toward cell phones* (2003), Aoki and Downes studied college-aged students through a behavioral and psychological approach. The authors of this study drove inspiration to the researcher's survey methodology. By using focus groups and surveys, they gathered information that showed many individuals, especially college students, have varying attitudes towards cell phone usage. In the study, they discovered individuals use cell phones for many purposes such as: safety, financial, time-management, and connections. As college-aged students are the researcher's primary audience, it supported her judgement that individuals in the millennial generation are heavily dependent on cell phones.

In an article titled *Health Information Technology and Physician-Patient Interactions: Impact of Computers on Communication During Outpatient Primary Care Visits* (2006), Elizabeth L. Heidt also validated the researcher's prediction that individuals are less likely to engage in face-to-face interaction if digital technology is present. Heidt assessed the impact of health information technology (HIT) on the interaction between the physician and patient. The study was conducted two months before, and seven months after computers were brought into the examination room. After the study, patients' satisfaction significantly increased, as well as the familiarity between physicians and their patients. Although the study was based on the

healthcare industry, the researcher was able to apply this data to her methodology because there are many college-aged students who pursue the healthcare field after college.

In a study conducted by Patti M. Valkenburg titled, *Friend Networking Sites and Their Relationship to Adolescents' Well-Being and Social Self-Esteem* (2006), she studies social media sites and the overall well-being of adolescents. In her study, she discussed the usage of friend networking sites, and how profile feedback stimulates relationships between users. Her initial hypothesis aligned well with the researcher's investigation, "We expect that for most adolescents the use of friend networking sites will be positively related to their social self-esteem. We base this view on theories of self-esteem, which assume that human beings have a universal desire to protect and enhance their self-esteem" (Valkenburg, 2006, p. 586). Her findings showed that the frequency of individuals using social media sites had no effect on adolescents' self-esteem and well-being, however, the individuals did stimulate relationships. Valkenburg's study informed the researcher that relationships are being stimulated, but the portion of the interpersonal communication aspect was missing. The researcher took it upon herself to develop a methodology that targeted if people go on to communicate interpersonally after forming a relationship online.

In *Reconfiguring Friendships: Social relationships and the Internet* (2007) Corinna Gennaro and William H. Dutton conducted a fascinating study that is incredibly beneficial to the researcher's study. Gennaro and Dutton conducted research to discover whether the internet isolates or connects users. The primary purpose for the internet is to connect individuals. However, how many times have users felt isolated due to being so engaged online? The researcher based her methodology questions off Gennaro's and Dutton's study. An interesting finding notes, "The findings indicate that about 20 percent of Internet users have met new friends

online, and about half of these individuals go on to meet one or more of these virtual friends in person” (Gennaro and Dutton, 2017, p.1). The research discovered that people are more likely to migrate to individuals who are similar to them based on their marital status, social status, etc. Additionally, the analysis provides the researcher with content as to what drives individuals to meet up in person, rather than just staying as “digital friends.”

In Patti M. Valkenburg’s study titled, *The Effects of Instant Messaging on the Quality of Adolescents’ Existing Friendships: A Longitudinal Study* (2009) it was determined that instant messaging (IM) enhances friendships and relationships. Valkenburg examined all variables of instant message, and its impact on friendships. Her original hypothesis stated that instant messaging enhances relationships due to its private and intimate nature. In the study, she conducted a survey on 812 Dutch adolescents between the ages of 10 and 17. Each individual was surveyed twice within 6 months. Although the study was conducted 9 years ago, the researcher was determined to see if the results were still the same, therefore, developed survey questions based upon Valkenburg’s study. The researcher’s survey does not focus on instant messaging, however, as she feels that the platform is not as relevant as Facebook Messenger, Snapchat, and Instagram.

The Impact of Social Media on Children, Adolescents, and Families (2011) provides important information to the researcher’s study. Gwenn O’Keeffe guided the researcher’s survey questions through her examination of the impact social media has on adolescents. O’Keeffe discovered that adolescents may face harassment, sexting, Facebook depression, as well as feeling disconnected from the world when engaging in social media. O’Keeffe’s analysis guided the researcher’s methodology as she determined how many users feel more disconnected with the world after engaging in social media. The feelings of disconnectedness may result in altered

interpersonal skills as individuals may feel as though they act as an outcast. In this article, the author discovered that there is real danger associated with social media, even though it is highly attractive to many users.

In *The Use and Abuse of Cell Phones and Text Messaging in the Classroom: A Survey of College Students* (2012), Deborah R. Tindell and Robert W. Bohlander conducted a fascinating study that not only informed the researcher's study, but also generated questions for her survey methodology. Tindell and Bohlander determined the frequency of cell phone usage in the classroom. As college-aged students are the researcher's primary audience, this study was extremely applicable to guide and inform the researcher's study. This study was of interest to the researcher as she had previously experienced students texting, and inattentive throughout her college courses. Both researchers surveyed 269 college students, including 153 females and 116 males, all from a variety of majors from a small university in Pennsylvania. Each student received the opportunity to receive \$50.00 if they truthfully, and accurately, participated in the survey. The survey determined the frequency of cellphone usage in the classroom. At the end of the study, Tindell and Bohlander discovered that 95% of students have their cellphone in class daily, 92% text during class, and 10% admitted to texting during an exam at least once. Additionally, students revealed that they felt their professors were unaware about the frequency of students using distracting technologies in their class. These numbers were not astonishing to the researcher as she has had personal experiences with distracted classmates due to digital technologies. This study drove the researcher's methodology as she wanted to discover how many individuals bring their cellphones to class at her small college in Massachusetts, and examine if the numbers were similar. If the numbers were as high as Tindell and Bohlander's study, she could determine if individuals are becoming more distracted in classes, and therefore,

affecting the interpersonal communication between the individual, his or her classmates, and professor.

In a study titled, *The iPhone Effect: The Quality of In-Person Social Interactions in the Presence of Mobile Devices* (2014), Shalini Misra, Lulu Cheng, Jamie Genevie, and Miao Yuan studied mobile devices and the quality of face-to-face social interactions. The researchers conducted a naturalistic observation where 100 strangers were assigned to conduct a casual or meaningful conversation together. The participants were being observed from a distance for 10 minutes, and made note whether a participant placed the mobile device on the table, or kept it in his or her hand. The researchers discovered that those who didn't have their cellphones present engaged in superior conversations; whereas those who had their mobile devices present engaged in a more short-term, less meaningful conversation. Additionally, those who didn't use their cellphones reported feeling more empathetic to their partner than those who had their cellphones present. This study informed the researcher that digital technologies are impacting the way people communicate, and are distracting people from the "now." This study also drove the researcher to conduct a survey question regarding how many individuals engage in conversations with their cellphones present.

III. Methodology

The research methodology that drove the researcher's study was a survey. After the researcher's personal experience with peers and their seemingly addiction to cellphones, it was determined that the most effective approach to receive honest and accurate results was through a survey. Additionally, by conducting a survey, the researcher wanted to raise awareness among

the participants of how they are as an interpersonal communicator, and the severity of their usage of digital technologies. The researcher also used previous research to guide the study.

The researcher conducted a systematic survey to every other student that entered a Student Center in a small college in Massachusetts during lunchtime. The researcher first asked the individual if they were willing to participate in the survey for her Communication Research course, and noted to each participant that no personal information was asked of them. The only demographic information the researcher required was to state their class year and gender for data purposes. The survey was developed on a popular, online survey tool called SurveyMonkey. The researcher conducted the survey until 50 students were reached. After the survey was complete, the researcher analyzed the data in an Excel spreadsheet.

IV. Findings

After gathering and analyzing the results of the survey, the results did not surprise the researcher. The researcher analyzed the survey results through an Excel spreadsheet, and determined that 28 women and 22 men answered each question. Additionally, the participants consisted of 10 freshmen, 11 sophomores, 17 juniors, and 12 seniors. In total, there were 50 survey participants. Although there were more women that participated in the survey, women illustrated that they have higher chances of their interpersonal skills being impacted by digital technologies.

The researcher's first question asked, "How often do you experience feelings of disconnectedness after using your phones?" The survey question was developed from Gwenn O'Keefee's previous study, where she discovered that adolescents may feel disconnected after engaging in social media. Therefore, the feelings of disconnectedness may alter interpersonal skills in adolescents. The researcher discovered that 22 women and 5 men felt disconnected *often*

after using their phones; 6 women and 11 men felt disconnected *sometimes*; and 6 men *never* felt disconnected. The researcher's study validated O'Keefee's study, and although the researcher's primary age group was young adults, the results were still the same.

The researcher's second question asked, "How many friends do you have online that you have never had a conversation with in-person?" 8 women and 4 men responded *some*; 20 women and 18 men responded *several*; and no one responded *none*. A majority of those surveyed stated that they have several friends that they have never had a conversation with in-person. Therefore, digital communication is becoming much more frequent and normalized than speaking face-to-face. This survey question was built off Corinna Gennaro and William H. Dutton's research, where they discovered about 20% of people meet friends online, and less than half of those people meet in person. As their study was conducted 10 years ago, it was fascinating to understand that people are still communicating online, and not meeting face-to-face. The researcher anticipates that these situations will start occurring much more frequently as the advancement of technology continues to grow.

The researcher was not surprised with the results to the question, "Do you use your cellphone during classes?" The researcher's previous experience with college classes, and students texting throughout the lectures, led her to believe that several people would answer often to the question. The results showed that 23 women and 19 men answered *often*, whereas only 5 women and 3 men answered *sometimes*. No one answered *never*. This survey question echoed the *Interpretative and Interaction Theory of Interpersonal Communication's* first axiom that one cannot communicate. The survey showed raw data that individuals are constantly communicating, even when they are in class. It is nearly impossible to separate digital technologies from individuals. This survey question was developed by Deborah R. Tindell and

Robert W. Bohlander's previous research, where they determined the frequency of cellphone usage in the classroom. Although the two researchers surveyed a total of 269 college students, which is much larger than the researcher's sample, the results were still very parallel. The researchers discovered that 95% of students have their cellphone in class daily, 92% text during class, and 10% admitted to texting during an exam at least once. Therefore, the amount of cellphone usage in the classroom is clearly affecting the interpersonal communication between the individual, his or her classmates, and the professor.

Patti M. Valkenburg conducted a study titled, *The Effects of Instant Messaging on the Quality of Adolescents' Existing Friendships: A Longitudinal Study* (2009). Valkenburg discovered that instant messaging had a positive effect on the quality and length of relationships. The researcher conducted a survey nearly 10 years later, and asked the participants to answer using a Likert Scale. The question stated, "Having a cellphone enhances your relationships." The researcher initially hypothesized that the results would be similar to those of Valkenburg's; however, the data showed otherwise. 3 women and 1 man answered *strongly agree*; 4 women and 6 men answered *agree*; 5 women and men answered *neutral*; 6 men and 9 women answered *disagree*; and 4 men and 7 women answered *strongly disagree*. In this survey question, many of the respondents answered to disagree and strongly disagree. The researcher concluded that most individuals do not feel that cellphones enhance relationships. The researcher was intrigued that in just nearly 10 years, the findings changed drastically.

V. Conclusion

In conclusion, the researcher's survey and previous literature confirmed that interpersonal communication is being impacted, both positively and negatively, by digital technologies. Through the examination of the survey data, it is prevalent that women are more likely to be impacted by digital technologies due to their higher reporting average. The survey results determined that people are less likely to engage in face-to-face communication due to the convenience and informality of digital technologies.

Given that the researcher's main target audience was primarily college-aged students, it was determined that digital technologies impact ages 18 through 22 significantly. In order to prevent digital technologies from taking over face-to-face communication completely, it is crucial that technology users take it upon themselves to implement change for the greater good. As technology continues to advance, the amount that individuals choose to hide behind screens will continue to rise. Perhaps, schools will start implementing strategies in their classrooms to prohibit cellphone usage, and encourage face-to-face communication. Any strategy implemented to increase face-to-face communication must be taught from the top, down. It is fundamental for humans to understand how to communicate, and as future generations continue to be born into technology eras, their chances of learning face-to-face communication decreases. Humans must reverse the damage done, and instead of distracting children with an iPad, encourage a meaningful conversation.

VI. References

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doi:10.1080/87567555.2011.604802

Valkenburg, P. M., & Peter, J. (2009, 03). The Effects of Instant Messaging on the Quality of Adolescents' Existing Friendships: A Longitudinal Study. *Journal of Communication*, 59(1), 79-97. doi:10.1111/j.1460-2466.2008.01405.x

Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006, 10). Friend Networking Sites and Their Relationship to Adolescents' Well-Being and Social Self-Esteem. *CyberPsychology & Behavior*, 9(5), 584-590. doi:10.1089/cpb.2006.9.584

VII. Annotated Bibliography

Aoki, K., & Downes, E. J. (2003, 11). An analysis of young people's use of and attitudes toward cell phones. *Telematics and Informatics*, 20(4), 349-364. doi:10.1016/s0736-5853(03)00018-2

Kumiko Aoki and Edward J. Downes conducted a fascinating study in *An analysis of young people's use of and attitudes toward cell phones* (2003), utilizing both a behavioral and a psychological approach. By using focus groups (qualitative) and surveys (quantitative), they gathered information that showed many individuals, especially college students, have varying attitudes towards cell phone usage. In the study, they discovered individuals use cell phones for many purposes such as: safety, financial, time-management, and connections. This article is extremely applicable to my research as I am a college student, and it supports my judgment that college-aged students are heavily dependent on cell phones. Additionally, the focus groups presented fascinating results. The focus groups outlined the motivation factors as to why college students were so addicted to their cell phones (as stated above), and went into each motivational factor in great depth. This article outlines pertinent information to my study that discusses the detrimental effects of cell phone addiction.

Fish, R. S., Kraut, R. E., Root, R. W., & Rice, R. E. (1992). Evaluating video as a technology for informal communication. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems - CHI '92*. doi:10.1145/142750.142755

In *Evaluating video as a technology for informal communication. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (1992), Robert Fish conducted a study extremely pertinent to my research. The author notes, "Collaborations in organizations thrive on communication that is informal because informal communication is frequent, interactive, and expressive. Informal communication is crucial for the coordination of work, learning an organization's culture, the perpetuation of the social relations that underlie of the

social relations that underlie collaboration, and, in general, any situation that requires communication to resolve ambiguity” (Fish, 1992, p. 1). It is fascinating that this study is over 25 years old, and still holds true. Today, there are various types of informal communication in businesses such as Skype, Slack, and Voxer. These technologies are designed to enhance our communication, yet, it takes away from the face-to-face communication aspect. In the quote, it notes, “resolve ambiguity.” In 2018, I believe that informal communication causes more ambiguity, rather than solves it. In this study, Fish sets out to discover the efficiency of a business video/audio conferencing system via the employees’ desktop. Fish discovered that the system was used often, and it acted more of a telephone or e-mail, as opposed to face-to-face communication. The study conducted by Fish demonstrates that people prefer informal, non-face-to-face technologies.

Gennaro, C. D., & Dutton, W. H. (2007, 10). Reconfiguring Friendships: Social relationships and the Internet. *Information, Communication & Society*, 10(5), 591-618.

doi:10.1080/13691180701657949

In *Reconfiguring Friendships: Social relationships and the Internet* (2007) Corinna Gennaro and William H. Dutton conduct a fascinating study that is incredibly beneficial to my study. Both researchers set out to discover whether the internet isolates or connects individuals. The study primarily focuses on how individuals make friends via the internet, and how they change their social media sites to their virtual friend’s expectations. An interesting finding notes, “The findings indicate that about 20 percent of Internet users have met new friends online, and about half of these individuals go on to meet one or more of these virtual friends in person” (Gennaro and Dutton, 2017, p.1). The data in the study reminds me of how myself and friends create digital friends. For example, people are more likely to migrate to individuals who are

similar to them based on their marital status, social status, etc. Additionally, the analysis provides me with content as to what drives individuals to meet up in person, rather than just staying as “digital friends.” It is a fascinating study, and the data within can provide my research with some excellent points.

Gottman, J., Gonso, J., & Rasmussen, B. (1975, 09). Social Interaction, Social Competence, and Friendship in Children. *Child Development*, 46(3), 709. doi:10.2307/1128569

In *Social Interaction, Social Competence, and Friendship in Children* (1975) John Gottman, Jonni Gonso, and Brian Rasmussen explore the relationship between social skills, interaction, and popularity. In the study, the researchers examined 198 children in the third and fourth grades in middle- and low-income schools. In the study, Gottman, Gonso, and Rasmussen measured social skills by assessing each child individually based on their ability to perform facial expressions, friend-making knowledge, giving help, and ability to take on tasks. The researchers also measured social interaction based on a naturalistic observational study. This study is relevant to my research because the children’s ability to make friends, focus in class, and receive positive reinforcement was based off popularity. Unpopular children were less likely to make friends and receive positive reinforcement, and they are more likely to daydream. This study shows that building relationships at an early age is fundamental for school, and future success. Although this study doesn’t necessarily talk about technology, it still talks about social interaction. It is easy to assume that if the unpopular children had devices, they may seclude themselves even more.

Griffiths, M. (1997). Friendship and social development in children and adolescents: The impact of electronic technology. *Educational and Child Psychology*, 14(3), 1-13.

In *Friendship and social development in children and adolescents: The impact of electronic technology* (1997), Mark Griffiths explored every aspect of the research I am conducting. The article notes, “The research has demonstrated that interaction with peers plays an important role in fostering interpersonal skills, poise and social competence in children” (Dworetzky, 1996, p. 1). The article really reflects how I, as a child, felt growing up. It touches on how children may not feel included with other children if they’re not up-to-date on current technologies. When I was a young child, many of my friends had touchphones, whereas I still had a flip phone. The feelings of seclusion and unpopularity can be very detrimental to a child, and damaging to their social interaction skills. The article conducts an observational study of boys and girls playing arcade games, as well as a survey of boys and girls who play home video games. Not to my surprise, boys were dominant in both categories. Griffiths highlighted the negative aspects of technology within children and adolescents. This study is very beneficial to my research as it shows how there is more competition and less interaction between children, and adolescents, due to technologies.

Heidt, E. L. (2006, 03). Health Information Technology and Physician-Patient Interactions:

Impact of Computers on Communication During Outpatient Primary Care Visits. *Journal of the American Medical Informatics Association*, 13(2), 236-236. doi:10.1197/jamia.m1999

The primary purpose of Elizabeth L. Heidt’s study throughout *Health Information Technology and Physician-Patient Interactions: Impact of Computers on Communication During Outpatient Primary Care Visits* (2006) was to assess the impact health information technology (HIT) on the interaction between the physician and patient. The study was conducted two months before, and seven months after computers were brought into the examination room. After the study, patients’ satisfaction significantly increased, as well as the familiarity between physicians

and their patients. The health industry requires a lot of communication, although some individuals may not realize it. The article fascinated me as computers enhanced the connection between a physician and a patient. Although it is a different approach to my research, it still mentions technology and its positive impact on interpersonal communication. Additionally, this study can be resourceful to those in the medical and healthcare industry who are reading my research.

O'keeffe, G. S., & Clarke-Pearson, K. (2011, 03). The Impact of Social Media on Children, Adolescents, and Families. *Pediatrics*, 127(4), 800-804. doi:10.1542/peds.2011-0054

In *The Impact of Social Media on Children, Adolescents, and Families* (2011), Gwenn O'Keeffe goes into depth about how all social media sites such as MySpace, Facebook, Twitter, YouTube, Club Penguin, the Sims may be appealing for children and adolescents, but there is real danger associated with social media. O'Keeffe discovers dangers associated with behavior and overall well-being, in relation to social media and technology. According to the article, "Many parents today use technology incredibly well and feel comfortable and capable with the programs and online venues that their children and adolescents are using. Nevertheless, some parents may find it difficult to relate to their digitally savvy youngsters online for several reasons. Such parents may lack a basic understanding of these new forms of socialization, which are integral to their children's lives" (O'Keeffe, 2011, p. 4). Although O'Keeffe does not conduct a study herself, she discusses many dangers that children may face when participating in social media such as: harassment, sexting, and Facebook depression, which may cause a disconnect in many lives of children. O'Keeffe validates that many individuals, especially in early adolescence, may experience some form of cyberbullying or clique-forming when involved with social media, which then may result in altered interpersonal communication skills.

Tindell, D. R., & Bohlander, R. W. (2012, 01). The Use and Abuse of Cell Phones and Text Messaging in the Classroom: A Survey of College Students. *College Teaching*, 60(1), 1-9. doi:10.1080/87567555.2011.604802

In *The Use and Abuse of Cell Phones and Text Messaging in the Classroom: A Survey of College Students* (2012), Deborah R. Tindell and Robert W. Bohlander conducted a study that is still very relevant to this day, the usage of cellphones in the classroom. As I reflect on the several courses I've taken in college, I've experienced at least two students in each course distracted by their technologies. In this article, Tindell and Bohlander surveyed 269 college students, 153 females and 116 males, from several different majors from a small university in Pennsylvania. The students (65 freshman, 62 sophomores, 74 juniors, and 63 seniors) who participated in the survey were automatically entered to win \$50.00 as an incentive. All of the students were required to report their use of cellphones in the classroom. At the end of the study, Tindell and Bohlander discovered that 95% of students have their cellphone in class daily, 92% text during class, and 10% admitted to texting during an exam at least once. Additionally, students revealed that they felt their professors were unaware about the frequency of students using distracting technologies in their class. As my main audience for my research is college-aged students, this study was fascinating and extremely resourceful. I will be conducting a study similarly to Tindell's and Bohlander's, and I'm eager to see if my results align with theirs.

Valkenburg, P. M., & Peter, J. (2009, 03). The Effects of Instant Messaging on the Quality of Adolescents' Existing Friendships: A Longitudinal Study. *Journal of Communication*, 59(1), 79-97. doi:10.1111/j.1460-2466.2008.01405.x

The Effects of Instant Messaging on the Quality of Adolescents' Existing Friendships: A Longitudinal Study (2009) explores the impact of instant messaging (IM). Patti M. Valkenburg

wanted to conduct a study that explored all mediating variables of instant messaging, rather than just direct effects of instant messaging and friendships like most studies. Valkenburg initially hypothesized that instant messaging enhanced the quality of friendships due to its intimate and private nature. Valkenburg conducted a survey on 812 Dutch adolescents ranging from 10 to 17 years in age. Each individual was surveyed twice within 6 months. At the end of the study, Valkenburg's hypothesis was validated as instant messaging did have a positive effect on the quality and length of friendships. Although this study was conducted in 2009, I still believe the results would stay the same today, except for minor nuances. For example, not many people are still using instant messaging, rather Facebook Messenger, Snapchat, and Instagram direct messaging. However, the digital technologies still enhance, and lengthen, friendships as opposed to solely communicating face-to-face.

Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006, 10). Friend Networking Sites and Their Relationship to Adolescents' Well-Being and Social Self-Esteem. *CyberPsychology & Behavior*, 9(5), 584-590. doi:10.1089/cpb.2006.9.584

Friend Networking Sites and Their Relationship to Adolescents' Well-Being and Social Self-Esteem (2006) studies social media networking sites and the correlation of adolescents' self-esteem and overall well-being. Patti. M. Valkenburg discusses the usage of the networking sites in which they stimulate relationships through profile feedback. Valkenburg conducts a study consisting of 881 Dutch students ranging from ages 10 through 19 who use a Dutch social networking website. Valkenburg states an interesting hypothesis, "We expect that for most adolescents the use of friend networking sites will be positively related to their social self-esteem. We base this view on theories of self-esteem, which assume that human beings have a universal desire to protect and enhance their self-esteem" (Valkenburg, 2006, p. 586). After the

study was conducted, to Valkenburg's surprise, she discovered that the frequency of individuals using the social site had no effect on adolescents regarding social self-esteem and well-being. However, the site did stimulate relationships, which is relevant to my research. Valkenburg's study focuses heavily on relationships built through friend networking sites. Although she doesn't discuss its impact on interpersonal communication, I think her research is still applicable to my study. Given that this study was conducted in 11 years ago, I do believe that if this same study were to occur again, the results would be different. It was shocking to discover that the frequency of which individuals used the social site had no effect on self-esteem. If this research were to occur in 2018, I'm certain that the frequency would influence individuals' self-esteem.

VIII. Appendixes**Survey Questions**

1. How often do you experience feelings of disconnectedness after using your phones?
 - a. Often
 - b. Sometimes
 - c. Never

2. How many friends do you have online that you have never had a conversation with in-person?
 - a. Some
 - b. Several
 - c. None

3. Do you have your cellphone out (on the table or in lap) while eating meals?
 - a. Often
 - b. Sometimes
 - c. Never

4. Do you use your cellphone during classes?
 - a. Often
 - b. Sometimes
 - c. Never

5. Having a cellphone enhances your relationships

Strongly agree Agree Neutral Disagree Strongly Disagree

6. Do you spend more time on your phone than you do with family and friends?
 - a. Yes
 - b. No

7. What is your gender?
 - a. Female
 - b. Male

8. What is your class year?
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior

Survey Results







