

# The Effect of Technology on Face-to-Face Communication

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## Abstract

*Recent technological advancements have had a drastic impact on the way individuals communicate. In this research, previous studies were analyzed, field observations were conducted, and an online survey was administered to determine the level of engagement individuals have with their cell phones, other technologies and with each other in face-to-face situations. Findings suggest that technology has a negative effect on both the quality and quantity of face-to-face communication. Despite individuals' awareness of the decrease of face-to-face communication as a result of technology, more than 62% of individuals observed on Elon's campus continue to use mobile devices in the presence of others.*

## I. Introduction

Celebrity couple Kristen Bell and Dax Shepard star in a recent Samsung Galaxy Tab S ad that follows them on a day in their lives repeatedly distracted by technology. The couple decides to ditch their plans to go hiking and, instead, spend the day completely attached to their tablets. The commercial highlights the couple playing games on their separate devices at dinner, video chatting each other from different rooms in their house, and missing a black-tie event to watch a movie on their tablet instead. While it seems as though this should be a PSA promoting face-to-face interaction rather than screen-to-screen, it is just another ploy to sell more technology. This ad, along with many others, has emphasized the fact that as the use of devices and technology that allow people to communicate digitally increase, face-to-face interaction decreases.

Little by little, technology has become an integral part of the way that people communicate with one another and has increasingly taken the place of face-to-face communication. Due to the rapid expansion of technology, many individuals fear that people may be too immersed in this digital world and not present enough in the real world. In reaction to the overwhelming replacement of face time with screen time, a Massachusetts family decided to implement an Internet Sabbath each weekend in which no video games, computers or smartphones can be used. The father, William Powers, expressed the difficulty of the weekly detox stating, "It almost had an existential feeling of, 'I don't know who I am with the Internet gone.' But after a few months it hardened into a habit and we all began to realize we were gaining a lot from it" (Adler, 2013). Many others have expressed shared concerns regarding the overuse of technology and its impact on face-to-face communication, so much so that some Los Angeles restaurants have banned the use of mobile devices to ensure customers enjoy both their meal and their company (Forbes, 2013). Throughout this study, the author sought to answer questions regarding technology usage and investigated whether technology affects face-to-face communication negatively.

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## II. Literature Review

Before analyzing the effect of technology on face-to-face communication, it is important to understand the rapid growth of various technologies and their current usage throughout the United States. Over the past few decades, technology usage has grown significantly. Per the U.S. Census, 76% of households reported having a computer in 2011, compared with only 8% in 1984 (File, 2012). Of that number, 72% of households reported accessing the Internet, up from just 18% in 1998, the first year the Census asked about Internet use (File, 2012). As of 2013, 90% of American adults had a cell phone of some kind, and for people under the age of 44, the number was closer to 97% (Madrigal, 2013). The drastic increase in technology usage is especially noticeable in younger generations. One study, conducted by the Kaiser Family Foundation, found people ages 8 to 18 spent more time on media than on any other activity – at an average of 7.5 hours a day (Rideout, Foehr, & Roberts, 2010).

Many studies have been conducted regarding technology's effect on social interaction and face-to-face communication since the rise of cellphone and social media usage in the late 2000s. As Przybylski and Weinstein of the University of Essex wrote in 2013, "Recent advancements in communication technology have enabled billions of people to connect more easily with people great distances away, yet little has been known about how the frequent presence of these devices in social settings influences face-to-face interactions" (Przybylski & Weinstein, 2012, p. 1).

One study examined the relationship between the presence of mobile devices and the quality of real-life, in-person social interactions. In a naturalistic field experiment, researchers found that conversations in the absence of mobile communication technologies were rated as significantly superior compared with those in the presence of a mobile device (Misra, Cheng, Genevie, & Yuan, 2014). People who had conversations in the absence of mobile devices reported higher levels of empathetic concern, while those conversing in the presence of a mobile device reported lower levels of empathy (Misra et al., 2014).

In another study, Przybylski and Weinstein (2012) showed similar results that proved the presence of mobile communication devices in social settings interferes with human relationships. In two separate experiments, the authors found evidence that these devices have negative effects on closeness, connection, and conversation quality, especially notable when individuals are engaging in personally meaningful topics.

Though much research has shown the negative effects of technology on face-to-face interaction, one study found that cell phone use in public might make individuals more likely to communicate with strangers. In 2011, Campbell and Kwak (2011) examined whether and how mobile communication influences the extent to which one engages face to face with new people in public settings. By accounting for different types of cell phone uses, the study found evidence that mobile phone use in public actually facilitated talking with copresent strangers, for those who frequently rely on cell phones to get and exchange information about news.

Brignall and van Valey (2005) analyzed the effects of technology among "current cyber-youth" – those who have grown up with the Internet as an important part of their everyday life and interaction rituals. The two authors discovered that due to the pervasive use of the Internet in education, communication and entertainment, there has been a significant decrease in face-to-face interaction among youth. They suggest that the decrease in the amount of time youth spend interacting face-to-face may eventually have "significant consequences for their development of social skills and their presentation of self" (p. 337).

Many other authors have focused specifically on technology's effect on personal relationships. In *Alone Together: Why We Expect More from Technology and Less From Each Other*, Turkle (2012) examined the effects of technology on familial relationships. After interviewing more than 300 young people and 150 adults, Turkle found that children were often times the ones complaining about their parents' obsession with technology. Turkle discovered that many children believed their parents paid less attention to them than to their smartphones, often times neglecting to interact with them face to face until they had finished responding to emails.

Contrary to many researchers' beliefs that technology impacts face-to-face communication negatively, Baym, principal researcher at Microsoft Research, does not share these concerns. Rather, Baym believes that research suggests digital communications enhance relationships and that "the evidence consistently shows that the more you communicate with people using devices, the more likely you are to communicate with those people face to face" (Adler, 2013).

The literature review above dominantly shows that the use of mobile technologies for recreational

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purposes typically affects face-to-face interactions with strangers, acquaintances, and families alike in a negative manner. Based on the review, the following three research questions were asked in this study:

RQ1. How does the use of technology affect people's ability to communicate face to face?

RQ2. Does the mere presence of technology affect people's ability to communicate with individuals in a public place?

RQ3. Has the increase of technology decreased both the quantity and quality of face-to-face interactions?

### III. Methods

The author conducted field observations and a survey to measure the level of engagement Elon students have with their cell phones, other technologies, and each other in face-to-face situations.

The survey was administered to Elon University students who were recruited using a non-probability sample via Facebook and email. Students were asked 11 questions regarding their technology use, habits, perceptions of face-to-face communication in the presence of technology, and engagement both face to face and screen to screen, which would help better answer the question of whether technology has a negative effect on face-to-face communication (For a full list of survey questions, reference Appendix A).

The survey resulted in 100 responses.

Based on the survey findings, field observations were conducted at four highly populated areas on campus, including dining halls. Observations were conducted during heavy foot-traffic times, including in-between classes and during lunch hours, when students would most likely be present and interacting with others. A variety of different interactions between other students and technology were recorded, including those texting or talking on the phone, those interacting with others, and those who did not have contact with devices. (Refer to Appendix B to see a full description of field observations).

### IV. Findings

All 100 respondents owned a smartphone or tablet. When asked how frequently students use their cell phones, 60% of respondents said they use their phone more than 4 hours a day, with 18% of respondents admitting to more than 8 hours of usage a day. Almost all students (97%) bring their cell phones or tablets with them every time they leave the house and only one respondent said they rarely do. Some students (18%) reported that when spending time with friends or family, they always use their cell phone or tablet. The majority of students use their cell phone sometimes when they are with family or friends (74%), and only 8% of students rarely use their phone in the presence of friends and family. No respondents indicated that they never use their cell phone or tablet when spending time with friends or family. Additionally, 46 percent of respondents said they communicate with friends or family more frequently via technology than in person, while 26% said the opposite.

Field observations yielded similar results regarding technology use and habits among Elon students. Of more than 200 students observed, 69% were using technology in one way or another. The author found that 78 of 134 students observed alone (58%) were either texting or holding their phones, 21 (16%) were talking on the phone or wearing ear buds, and only 35 students (26%) were not using any technology.

The author found it important to observe students' technology use and habits while with others as well. The author found that 38 of 100 students (38%) while with others used no technology; 62% were either texting, talking on the phone, or using a computer or tablet.

In an effort to determine what impacts technology has on face-to-face communication, the survey asked students to rank the statement on a scale from strongly agree to strongly disagree: "It bothers me when my friends or family use technology while spending time with me." Seventy-four percent of respondents said that they either agreed or strongly agreed with this statement, while only 6% disagreed. Among respondents, 20% neither agreed nor disagreed.

Another survey question asked students whether they believed the presence of technology, while

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spending time with others, affects face-to-face interpersonal communication negatively. An overwhelming 92% of respondents believed technology negatively affects face-to-face communication, and only 1% did not. Only 7% of respondents neither agreed nor disagreed.

A third question regarding the impacts of technology on face-to-face communication asked students whether they noticed quality degradation in conversation amongst the presence of technology. Eighty-nine percent of respondents believed there was a degradation, only 5% disagreed, and 6% neither agreed nor disagreed.

While conducting field observations, similar results found evident degradation in the quality of conversation among those students using technology in the presence of others. One student, observed outside a campus building, was FaceTiming an individual on her iPhone. When a friend proceeded to join her in person, the female ignored her friend and continued her conversation on FaceTime. Many students at Lakeside Dining Hall ate lunch with their friends, but neglected to engage in any conversation. Instead, a large majority of the students in the dining hall sitting with others (73%) spent their time texting or using their computers or tablets.

When asked for additional feedback regarding technology use and face-to-face communication, students provided a number of insightful responses. One student said, "I don't like using my phone when I'm with friends in person, and I don't like it when they use theirs, but if it is used in a way to stimulate conversation – like showing a funny video, or documenting our time together via Snapchat or photos – then I think it is acceptable." Another student agreed, mentioning that whether technology affects face-to-face communication positively or negatively depends on how it is used. A third student shared similar opinions stating, "I don't mind if it's used to enhance a conversation (looking up important information or things relevant to a conversation); otherwise, it typically takes away from the experience in general as you can tell the other person(s) attention is divided and unfocused on the present moment."

Many respondents voiced their concerns that technology is diminishing society's ability to communicate face to face. One student stated, "People have lost the ability to communicate with each other in face-to-face interactions," while another respondent said, "Technology is making face-to-face communication much more difficult because people use technology as a crutch to hide behind." A third student responded, "I think technology impedes our ability to interact with people face to face," and a fourth agreed that technology "both enhances what we share online and decreases what we say face to face."

Other students shared sentiments that using technology to communicate is acceptable, but when used in the presence of others is disrespectful. One student responded, "I think putting away phones and technology is a sign of respect when having a conversation with someone and shows that you have their full attention. Even though it's sometimes hard to have those times when people are not attached to their phones, I think it is more important than ever." Many students mentioned that while spending time with friends or family, they have to make a conscious effort not to use technology. One respondent said, "At dinners with my friends, we do a cell phone tower and the first to touch the tower has to pay." It appears that despite being aware of their own behaviors and habits regarding technology, the majority of students agree that face-to-face communication and the quality of conversations are negatively impacted by technology.

## V. Conclusion

Field observations, a survey of 100 Elon students, and an analysis of previously conducted studies provided evidence that the rapid expansion of technology is negatively affecting face-to-face communication. People are becoming more reliant on communicating with friends and family through technology and are neglecting to engage personally, uninhibited by phones and devices, even when actually in the presence of others. A majority of individuals felt the quality of their conversations degraded in the presence of technology, and many individuals were bothered when friends or family used technology while spending time together. Additionally, nearly half of survey respondents (46%) communicate more frequently with friends and family via technology than in person, indicating strongly that face-to-face interactions have decreased both in quality and in quantity.

Only time will tell what the long-term impacts of this radical shift in communication methods will yield. Will employees be less able to communicate with their employers and, therefore, less able to succeed in the

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workforce? Or will the new skills developed through hours of cell phone use and texting result in a workforce that is more nimble and more qualified to multi-talk? Will Millennials be unable to communicate face to face with their children, or will the new tools available to them bring their families closer together? Will the new technologies bring us closer together as a community, or result in fewer actual friends and a life that is more isolated and less fulfilling? With technology advancing at the speed of light and human interaction changing just as quickly, it may be impossible to predict the results. However, everyone should be aware that human interaction as was once known may have already changed forever.

### **Limitations**

It is important to consider limitations to this study. The survey used a convenience sample, and therefore, cannot be generalized to a greater population. Additionally, the survey used a volunteer sample of self-selected subjects to participate in the study, potentially bringing about biases. Another potential bias is possible because only individuals with a Facebook account had access to the survey, which excluded students who do not regularly check or use the social media platform. There was also an extreme gender bias since 86% of respondents were female, even though females consist of approximately 60% of Elon University's student body.

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## Appendix A: Survey Questions and Responses

- 1.) Do you own a smartphone or tablet?
    - a. Yes (100%)
    - b. No (0%)
  - 2.) How frequently do you use your cellphone or tablet per day
    - a. 0-2 hours (6%)
    - b. 2-4 hours (34%)
    - c. 4-6 hours (32%)
    - d. 6-8 hours (10%)
    - e. more than 8 hours (18%)
  - 3.) How frequently do you bring your phone or tablet with you when leaving the house?
    - a. Always (97%)
    - b. Sometimes (2%)
    - c. Rarely (1%)
    - d. Never (0%)
  - 4.) How often do you use your smartphone or tablet while hanging out with friends or while spending time with family?
    - a. Always (18%)
    - b. Sometimes (74%)
    - c. Rarely (8%)
    - d. Never (0%)
  - 5.) It bothers me when my friends or family use technology while spending time with me
    - a. Strongly agree (21%)
    - b. Agree (53%)
    - c. Neither agree nor disagree (20%)
    - d. Disagree (6%)
    - e. Strongly disagree (0%)
  - 6.) I communicate more frequently with friends and family via technology than I do in person
    - a. Strongly agree (5%)
    - b. Agree (41%)
    - c. Neither agree nor disagree (27%)
    - d. Disagree (24%)
    - e. Strongly disagree (2%)
  - 7.) I think that the presence of technology while spending time with others affects face-to-face interpersonal communication negatively
    - a. Strongly agree (38%)
    - b. Agree (54%)
    - c. Neither agree nor disagree (7%)
    - d. Disagree (1%)
    - e. Strongly disagree (0%)
  - 8.) I notice a degradation in the quality of my conversations with others when technology is present or being used
    - a. Strongly agree (31%)
    - b. Agree (58%)
    - c. Neither agree nor disagree (6%)
    - d. Disagree (5%)
    - e. Strongly disagree (0%)
  - 9.) Do you have any comments regarding technology use and face-to-face communication?
  - 10.) What year are you at Elon?
    - a. first (0%)
    - b. second (17%)
    - c. third (20%)
    - d. fourth (61%)
    - e. fifth (2%)
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- 11.) What is your gender?
- a. male (10%)
  - b. female (89%)
  - c. other (1%)

## Appendix B: Field Observations

|                                | Alamance  | Moseley   | Lakeside  | McEwen    | Total      | Total %     |
|--------------------------------|-----------|-----------|-----------|-----------|------------|-------------|
| Texting/Holding (Alone)        | <b>27</b> | <b>30</b> | <b>8</b>  | <b>13</b> | <b>78</b>  | <b>33%</b>  |
| Talking/Listening (Alone)      | <b>5</b>  | <b>7</b>  | <b>3</b>  | <b>6</b>  | <b>21</b>  | <b>9%</b>   |
| No technology (With others)    | <b>14</b> | <b>5</b>  | <b>9</b>  | <b>10</b> | <b>38</b>  | <b>16%</b>  |
| Using technology (With others) | <b>12</b> | <b>11</b> | <b>24</b> | <b>15</b> | <b>62</b>  | <b>27%</b>  |
| No technology (Alone)          | <b>16</b> | <b>11</b> | <b>1</b>  | <b>7</b>  | <b>35</b>  | <b>15%</b>  |
| <b>Total</b>                   | <b>74</b> | <b>64</b> | <b>45</b> | <b>51</b> | <b>234</b> | <b>100%</b> |

*Notes:* Alamance represents observations in front of the Alamance Fountain between 12:10-12:25 p.m. on Nov. 11, 2014; Moseley represents observations on the patio in front of the Moseley Center between 2:05-2:20 p.m. on Nov. 11, 2014; Lakeside represents observations inside of Lakeside Dining Hall between 12:10-12:25 p.m. on Nov. 13, 2014; McEwen represents observations on the patio in front of McEwen Dining Hall between 2:05-2:20 p.m. on Nov. 13, 2014. Texting/Holding (Alone) represents the individuals observed who were either texting or holding their phones while alone; Talking/Listening (Alone) represents the individuals observed who were involved in a phone conversation or listening to music with headphones while alone; No technology (With others) represents the individuals observed who were with other people and not using technology; Using technology (With others) represents the individuals observed who were either talking on the phone, texting, or using a computer or tablet while with others; No technology (Alone) represents the individuals observed who were not using technology while alone.

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