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Effects of social media on adolescents

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SOCIAL MEDIA AND THE EFFECTS ON ADOLESCENTS' ABILITY TO USE

COMMUNICATION SKILLS

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Abstract

Social media has a strong influence on adolescents. The effects of social media use can be both positive and negative for adolescents. Social media makes adolescents feel more connected to their friends, family, and interests. On the other hand, it creates an unhealthy reliance by some adolescents which can cause problems with addiction, communication, mental health, and schooling. Addiction to technology and cell phones in particular is a negative pertaining to adolescents. Negative effects occur when adolescents are overly dependent and unfocused due to the use of social media while at school. Studies show that communication skills can be harmed due to addiction to devices and social media. Studies on adolescent mental health show that depression and loneliness are an effect of social media abuse. Awareness is needed by parents and caregivers regarding adolescents and technology issues. The education system needs to be prepared and aware of how this topic is influencing adolescents and the future of education.

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CHAPTER I: INTRODUCTION

Context

Social media is part of our everyday lives. We use this technology to keep in touch with our peers and friends, socialize with people near and far from us, entertain ourselves, and also to waste time. In schools, social media can be a great learning tool when used correctly for education or communications. "Smartphones, email, texting, Facebook, Twitter, 24-hr news, and other technological and communication advances continue to change the way individuals and communities live, work, play, and socialize" (Scott et al., 2016 p.605). This overload of information, in turn, is setting some students up for failure in their future life due to an overload of information and is exacerbating mental health issues (Scott et al., 2016).

Mobile devices have changed daily life as technology has evolved over time. According to the Telecommunications History Group (2010), in 1973, the mobile phone was invented, nearly 100 years after Alexander Graham Bell's invention of the telephone; this device allowed users to communicate over thousands of miles wherever they were at the time. The original use of the mobile phone was to communicate one-on-one with others through calls and sometimes texting. The introduction of smartphones or phones with access to the internet started to change the way people communicated beyond talking and texting. Once smartphones came into play in 2000, people were able to get more information faster than ever before. This included research and facts, as well as information for personal interest as well.

When one asks adolescents if they have a problem with their cell phone use, many state that they don't have a problem even though they don't know what to do without their device. David and Robert (2017) found that the average female college student spends 10 hours daily on

her phone while males spend eight hours daily. It is clear that the students' desire to be connected is very strong. David and Robert (2017) go on to relay that "68% of Americans sleep with their smartphone next to their bed, and 79% reach for their phone within 15 minutes of waking up" (David & Robert, p. 155). They also found that Americans check their phone an average of 221 times a day and two-thirds of people will even check their phone without an alert. These startling statistics indicate that many individuals surround themselves all day with this kind of technology. Adolescents in particular are finding themselves on their devices more, which in turn causes them to spend less time on other tasks or day-to-day activities. A study by Rosen (2012) found that 60% of people are more likely to check their smartphones every 15 minutes or less if they are from the Net Generation or iGeneration but only 40% of Gen Xers will check their phone at this frequency.

Theoretical Framework

When looking into the effects of social media on adolescents, one needs to look at many different topics for a better understanding. One of these topics includes the addiction to cell phones and their social media applications for adolescents. Adolescents are spending more time on their devices as Cheever et al. (2014) states that "more than 60% of younger people-specifically those in the iGeneration and Net Generation- check their smartphones every 15 minutes or less, while just 40% of Gen Xers, … 50% of young people reported they felt anxious when they could not check their technology" (p. 291). The adolescents are unaware of the increase in time on their cell phones and social media applications and, in turn, causing addictions to the devices.

The effect on communication skills of adolescents is another topic to understand when looking at the effects of social media on adolescents. Adolescents' communication skills are in the developing stages during these years of their lives. Cell phones and social media applications have changed how these communication skills have developed. Przybylski and Weinstein (2013) state that the amount of information that adolescents are processing through social networking may be causing them to have a harder time comprehending or disengage in the present activity or conversation (p.30). Face-to-face conversation allows individuals to use non-verbal's and other senses compared to communicating via social networking.

The mental health of adolescents has been affected by the use of social media as well. Adolescents that show an addiction to cell phones and social media applications are having negative self-image or self-identity and are having an increase in feelings such as anxiety, withdrawal, anxiety, and loneliness as shown in research by David & Roberts (2017), Lin et al. (2015), Hsieh et al. (2019), and Darcin et al. (2016). Having a preexisting disorder such as attention-deficit/hyperactivity disorder (ADHD) may also have a correlation to technology addiction, says Yoo (2004).

The effects of technology use in the education setting may be affecting adolescents' learning process. End et al. (2010) and Froese et al. (2012) theorize that the mere presence of an individual's phone may decrease the amount of learning or processing one may be experiencing. The brains of an adolescent are fragile due to it still developing and one needs to be aware of this in order to help them progress in their daily lives. The education system is in place to prepare adolescents for adulthood and they may be missing out on knowledge or skills due to what is taking place on their cellular devices and social media applications.

Rationale

Students' face-to-face social skills with other students or adults have been shown to be lacking, which may also be affecting their learning environment. "Technology can interrupt, distract, or delay individuals' vital behaviors such as eating, exercising and sleeping, which can increase stress" (Afifi et al., 2018, p. 266). Although asking questions to a staff member is difficult for many students, is the stress from social media affecting students' ability to seek help from others? "Digital and in-person communication differ significantly in their affordance for quantifiable interactions. Whereas in-person communication is necessarily qualitative and involves subjective interpretation, many online environments allow for feedback that is purely quantitative" (Sherman et al., 2016, p. 2). Holding face-to-face conversations may be getting harder for students since they are used to talking online.

When thinking about how social media affects adolescents, one needs to first look at how these platforms and applications are being used and if they are an addiction to the information intake. According to Sternberg et al. (2016), addiction is the compulsive need to use a habit-forming substance or the irresistible urge to engage in an activity or behavior. Persistent use may lead to dependence and ultimately tolerance, or the need to increase the amount or duration of the substance or activity in order to achieve the same effect. Discontinuation of the addiction can lead to withdrawal, which can be an unpleasant symptom that arises when the addicted person is prevented from using the chosen substance or engaging in the behavior (Sternberg et al., 2012). Many people associate addiction to drugs or alcohol but people can also be addicted to many other substances or activities such as gambling, video gaming, food, fitness, sex, and of course, technology. When these substances and behaviors are overused, they can have

a negative impact on our daily lives. Recently, people are using their phones more frequently since these devices have become more advanced in their capabilities. Although there are many different reasons for the overall increase in social media usage, adolescents, in particular, tend to surround themselves with what is happening outside their daily lives through apps on their phones. A major contributor to the increased cell phone usage is social media apps, which allow users to share their lives and see what is happening with others while sometimes making an emotional connection. The emotional connection is where adolescents don't understand the difference between reality and their screens. Ward et al., 2017 questions, "how dependence on these devices affects the ability to think and function in the world off-screen" (p. 140-141). Children don't understand why social media causes these feelings, so it opens the opportunity for an addiction to present itself.

There are many different traits or characteristics of addiction that may be present. One universal trait of addiction is the inability to stay away from the substance or stop engaging in the activity. People are becoming more and more attached to their mobile devices and more specifically, to social media. A lack of control is also a sign of addiction, which can be seen when adolescents have a hard time not looking at their phones when they receive a notification. The act of denial, or hiding one's actions, can also be seen as a sign of addiction.

With adolescents using their devices for social media or gaming more frequently, the amount of focus on school could be changing as well. "Teens are spending less time on homework, paid work, volunteering, and extracurricular combined, not more (Twenge, 2017, p. 32). The amount of focus on school has shown to be decreasing as many teens are not focusing on these important times in their lives. It is not that they don't want to do the work for school but

rather that they have a hard time staying focused and staying engaged due to the constant stimulation they are receiving on their devices.

Research Focus

The topic of adolescents and their focus on social media and communicating with their peers is an ever evolving topic due to changes in technology and society. The interest in this topic came about due to being an educator and wanting to learn more about what is going on with them. The focus on social media and its effects on them is something that is discussed with educators due to concerns with it. A specific research question that came about this topic included: What are the effects of social media on adolescents' education and mental health?

CHAPTER II: LITERATURE REVIEW

Literature Search Procedures

To locate the literature for this thesis, searches of EBSCO, Educational Journals, Academic Search Premier, and Elsevier were conducted to find broad topics or journal articles from 2000-2019. This list was narrowed down by using key terms or phrases such as social media, adolescents, communication, mental health, academics, and addiction. The structure of this chapter is to review the literature on social media and the effects on adolescents in four sections in this order: addiction to technology, communication, mental health issues and technology, and use of technology at school.

Addiction to Technology

In 2015, Andrews, Ellis, Shaw, and Piwek conducted a study on the use of phones by college participants. They looked at the accuracy of the students' perceived usage of their phones and how it compared to the participants' actual usage of their phones. Students were asked to estimate how much they used their phones on a daily basis for 14 days, while they had an application that recorded their actual use for this period of time. The results showed that "participants used their phones a mean of 84.68 times each day and spent 5.05 hours each day using their smartphones…55% of all phone uses were less than 30 seconds in duration" (Andrews et al., 2015, p. 4). Having the majority of their phone uses being under 30 seconds shows that users are constantly going onto messaging or social media platforms to communicate with others or check posts for interaction. The researchers found that the students didn't realize how many times they actually used their phones on a daily basis. Students estimated an average of checking their phone 37.2 times a day and a total of 4.12 hours, while the actual results were

84.68 checks per day and 5.05 hours. People are looking and using their phones more often than they realize; it is becoming a habit more than a purposeful act. Andrews et al. (2015) explain that idea in further detail:

> Rapid mobile phone interactions are habitual. While phone interactions under thirty seconds have previously been classified as checking behaviors, our data suggest that habitual goal and reward-based actions are likely to be less than 15 seconds in duration when it comes to checking the time or message notifications. (p. 6)

As a whole, this study shows that students are on their phones more than they realize; they are using their devices for very short segments and as a habit rather than for a purpose.

Many students share that they might have a problem with being on their mobile phones too much and that their use could be causing a problem. At San Francisco State University, Peper and Harvey (2018) conducted a survey with 135 students asking about their phone use, multitasking, and any symptoms of digital addiction. When comparing the lowest and highest 30% of phone users, the researchers found that there was an increased level of isolation, depression, and anxiety with the higher-use group. Students also reported the ability to multitask even when they understood that they should focus on one task at a time before moving on to other tasks (p. 5). People are aware that they may have a problem, but they have a hard time stopping, which shows the beginning signs of an addiction. Peper and Harvey (2018) stated that, "the behavioral addiction of smartphone use begins forming neurological connections in the brain in ways similar to how opioid addiction is experienced" (p. 6). They want people to be aware that digital addiction is a problem and that people need to help themselves so that it

doesn't take over one's life. Adolescents aren't able to realize why the "high" is happening and want that feeling. It is important to educate them on what is happening and why.

When students don't have their mobile devices with them, they have an increased level of anxiety, especially amongst users that are on them for multiple hours a day, reports Cheever et al. (2014). The researchers wanted to see, "students' anxiety levels when their device is absent, … to compare anxiety levels of those with and without their device in local proximity, and to examine how wireless mobile device use habits relate to anxiety levels with or without the device nearby" (Cheever et al., 2014, p. 292). The participants were split up into two groups- one group had their device taken away while the other had their device, but it was turned off. All participants were instructed to sit quietly and were instructed to take the State/Trait Anxiety Inventory at three different times to measure their anxiety levels as time went without their devices (p. 293). They also took a survey to measure the amount of technology use they experienced on a typical day. The results showed that low device users had a low level of anxiety throughout the test, the moderate device users had an anxiety level increase at the beginning of the test but leveled out as the test went on, and the high device users had a continuous increase in anxiety throughout the test (Cheever et al., 2014, p. 294). They also concluded that having the device taken away or with them turned off, especially for the high device users increased anxiety levels in both groups. With school policies of not having a device or students not able to look at them, this study supports that the students have a hard time focusing on the learning aspect since they are having an increase in anxiety levels due to simply not being able to look at their devices.

According to Ward et al. (2017), the mere presence of a phone can cause one to decrease their ability to sustain attention in a learning environment is what Ward et al. (2017) researched.

The researchers wanted to know how participants were able to complete tasks that measured their cognitive capacity while having their phone in either their pocket, a desk, or another room. They researched how one is able to stay focused on relevant information while completing a complex task through the Automated Operation Span task (OSpan). The results showed that having the phone in another room proved to have the highest scores, and having the phone in the desk had the lowest scores (Ward et al., 2017, p. 145). Even without looking at their phone, the mere presence can have an effect on one's performance.

In 2015, Clayton, Leshner, and Almond didn't want to just look at how students act and feel when separated from their phones, but rather they wanted to assess students' reactions when their phones rang during the experiment. They asked students to conduct a word search puzzle while unable to answer their phone when it rang. The researchers looked at the participants' blood pressure, heart rate, and self-reporting measures during the study. The participants were given two word searches - one with their phone present and the other with it taken away but hearing distance away and having it ring during the word search. The researchers wanted to know how the participants would react to their phones ringing without being able to answer or see who called them. The results showed that participants' heart rates, anxiety, and blood pressure increased when they did not have their phones and couldn't look at them when they rang (Clayton et al., 2015, p. 131). This study helps show that students have a physical desire to have their phones, and when they cannot look at their notifications, they experience a decreased ability to focus and learn in classes due to their physical connection to the phone.

Sherman et al. (2016) used a study entitled The Power of the Like in Adolescence to examine adolescents' reactions to viewed pictures on Instagram. This study used an MRI scanner

to look at participants' brains as they looked at pictures. The researchers wanted to see how adolescents viewed pictures with neutral or risky content (alcohol, skimpy clothing, paraphernalia), as well as photos from the participant with different amounts of likes attached to the image. The researchers also wanted to see if the participants would like the photo when comparing it to the number of likes the photo had associated with it. The results showed that with a photo that had more likes (23-45) of neutral or risky behavior photos, they were more likely to like the picture themselves. The MRI showed increased activity in the visual cortex when viewing neutral photos with many likes. The MRI also indicated increased activity in the left frontal cortex when viewing risky behavior photos with many likes. When viewing their own photos with many likes, the MRI showed activity in many regions of the brain (Sherman et al., 2016, p. 1031). This study helps to explain where in the brain a great deal of brain activity is happening when people are on social media. It also helps to explain that when content is viewed and liked by many other people, one may be more inclined to like it as well.

A study conducted by Jeong et al. in 2015 aimed to assess how a variety of characteristics, including self-control, sensation seeking, loneliness, and stress traits and how they coincide with technology addiction. Surveys were completed by 944 upper elementary school students, which looked at different characteristics that could be associated with smartphone addiction through social media and gaming. The researchers wanted to see how social network services and gaming can be addictive and what personal traits one might have led towards addition. When determining how these characteristics relate to phone addiction, the study indicated that people with less self-control are more likely to be addicted. One's loneliness has less of an impact on their addictive traits. However, there was a significant correlation

between sensation seeking and being addicted to their device. There was also a greater addiction rate when the participant's stress level was at a higher level as well. Addiction to social media and gaming can vary, but this study shows different traits and how it may affect their chances of being addicted to their device. These traits or characteristics go along with how people associate themselves with others. Someone with high stress and low self-control may find it difficult to communicate with others, which could be why they are surrounding themselves with social media.

A study in Turkey by Ozturk et al. (2013) looked at how internet addiction can relate to high school students' temperament and emotional difficulties. The researchers had the students at Erzurum Atatruk High School, Turkey, complete different surveys in order to compare their sociodemographics, internet addiction, behavior strengths and problems, and temperament. Ozturk et al. had surveys completed by 210 high school adolescents (p. 3). The study was to indicate if there was a correlation with internet addiction to students' temperament and emotional characteristics. One of the surveys that was completed was the Internet Addiction Scale (IAS) survey, which indicated that students that had a history of internet use for more than two years and had it readily available scored higher on the addiction scale than those who did not (p.2). When comparing the IAS results with the results from the Temperament Evaluation of Memphis, Pisa, Paris, and San Diego Autoquestionnaire (TEMPS-A), it showed an increase in anxious temperament for students addicted to the internet (15%) compared to non-addicted students (2.8%) (p.3). Ozturk et. al. concluded that as students increase their accessibility to the internet, they are more likely to become addicted as well as have problems with their temperament.

Communication

Human beings are hardwired to communicate with others. Our mobile device has adapted and changed over time to allow us to communicate with others in more effective and easier ways. Communication is good, but when people are trying to learn or take in information at the same time as communicating with others, it may be harder to learn and take in the learned material. When multitasking is combined with our communication device, more specifically our social media aporetic, it becomes apparent that people are trying to do too much at one time. "Constant connectivity throughout the day provides for a continual source of interruptions and distractions and potentially diminishes our ability to maintain attention and to concentrate and think deeply about things" (Thornton et al., 2014, p. 479). It is healthy to try and learn as much as we can, but there comes a point when taking in too much information at the same time hinders our learning. There is also a benefit to focusing and completing one task at a time.

A study conducted by Bowman et al. (2010) looked at how instant messaging affects one's ability to read. Students were asked to read an article and answer questions afterward. Some students received instant messages before reading, some during reading, and others didn't receive any instant messages. If the students received a message, they had to respond to it immediately. The researchers found that students who received messages before reading showed no difference in their ability to read or comprehend the information than the students who did not receive a message. On the other hand, students who received a message during the reading were found to take on average 22-59% more time to complete the task (p. 930). However, there wasn't a decrease in comprehension of the reading when receiving a message during the reading, which was a surprise to the researchers.

Another study was conducted about how the mere presence of a cell phone could distract people. Thornton et al. (2014) wanted to know if merely having a phone nearby could affect the performance or ability. The researchers wanted to know if having a cell phone nearby would cause a decrease in quantity and quality of output from students and people in the workforce. If so, this could have implications on one's ability to drive effectively while in possession of a cell phone. Thornton et al. (2014) concluded that the presence of a cell phone does have a negative impact on performance, especially when the task is more mentally demanding. The researchers had the participants conduct a timed survey, which consisted of them looking at numbers and canceling specific ones out. When having a cell phone, the mean score of correct answers was 21.29, and when there wasn't a phone present, the mean score of correct answers was 26.17. Simple tasks didn't show a difference in performance compared to more complex tasks when having a phone or not. Due to the need for people to be connected to others with social media, just having the device near oneself causes people to think about others.

Having a phone near ones-self can cause distraction, but can the presence of the phone cause a disruption with trying to have a meaningful face-to-face conversation with someone? Przybyliski and Weinstein (2012) wanted to know how a mobile device can influence in-person conversation. During this study, they looked at two dynamics of having a mobile device. First, they examined the quality of the conversation when discussing an interesting event with and without a phone present. Then, they looked at how a mobile phone affects conversation when talking in a casual manner when compared to a meaningful conversation. Przybyliski and Weinstein (2012) concluded that "partners who got to know one another in the presence of a mobile phone felt less close with their partners and reposted a lower quality of relationship than

did partners who shared a conversation without a mobile phone present" (p.241). Then, they looked at how a mobile phone affects conversation when talking casually compared to a meaningful conversation. They also found that there was less trust and empathy built between the two participants when having a meaningful conversation with a phone present. While having a casual conversation, the phone had no effect on partners' conversation when a mobile phone was present (p. 243). This study shows that the presence of a phone decreases the ability to have a meaningful and empathetic conversation with another person but doesn't affect a casual conversion. This indicates that youth likely have a hard time having a meaningful conversation or making connections when they are thinking about what is happening on their phones.

When engaging in conversation with someone, emotion recognition or identifying human emotions is oftentimes being processed in our minds. A study by Chun et al. (2017) wanted to determine if excessive smartphone users are neurologically affected when it comes to facial recognition. The researchers used pictures of different emotions as well as an MRI machine to be able to see the results of how participants were reacting to the emotions. The MRI showed a decrease in activity in multiple parts of the brain for the excessive smartphone users compared to the average phone users. This includes the left temporal gyrus, left lingual gyrus, right inferior temporal, right thalamus, left cerebellum, dorsolateral prefrontal cortex, and dorsal anterior cingulate cortex, as well as other parts of the brain that showed a decrease in the activity (Chun et al., 2017, p.4). When comparing happy and angry pictures, the subjects had an increased description for the angry faces as well. This suggests that an excessive phone user has a harder time reading facial expressions than individuals who use their phones less. The cognitive control

of individuals who use their phones excessively could have a harmful effect on emotional processing related to social interaction (Chun et al., 2017, p.7).

In Australia, Walsh et al. (2008) used focus groups with adolescents in order to learn more about youths' perceptions of the youth about mobile phone usage and addiction. The participants took part in six different group sections or meetings each consisting of an hour in length each to discuss different aspects of their phone usage. This included general questions, situational questions, phone addiction questions, and phone problem questions (Walsh et al., 2008, p. 81). The results indicated that a mobile phone acts as more than just a tool for communication; it is a device that teens have a hard time living without. The participants stated that they are constantly checking their phones; in fact, if they walk away from it, they oftentimes have a hard time thinking of other tasks until they go back to check if there are any messages (Walsh et al., 2008, p. 86). Participants reported feeling disconnected with their surroundings if they were not receiving messaging or hearing what is happening outside their direct personal lives. When asked about putting their phones aside for a few days, the participants simply could not entertain this idea with one 17-year-old teen stating that she would rather fight to keep it (Walsh et al., 2008, p. 87). At the same time, most of the participants didn't feel they were actually addicted or could even become addicted to their phones. Mobile phones play a major role in adolescents' lives, and this study shows the extent to which many teens feel the compulsive need to be connected to their phones.

A study conducted by Aoki and Downes (2003) looked at how college students use their phones as well as the attitudes they hold towards their cell phones. In this study, the researchers first conducted four conversational interviews with 32 participants to identify various themes of

their cell phone use (Aoki & Downes, 2003, p. 352). Then, based on these themes, the researchers developed a questionnaire to be completed by a new group of participants on their cell phone use. The themes that resulted from the conversations included the following: personal safety; individuals' initial reason to get a phone was for communication; financial incentive, or a way to save money; ease with accessing information, or not needing to remember so many numbers; social interaction; parental contacts, or a way of keeping in touch with their parents; time management/coordination, being able to coordinate with peers to meet or talk with less waiting time; dependency, or participants becoming more attached to their devices; peer pressure of image; and privacy management, to allow for the continuation of some privacy in their lives (Aoki & Downes, 2003 p.353-358). This information allowed the researchers to develop a questionnaire to learn more about cell phone users. The questionnaire was grouped into five categories: necessity in modern times, cost efficiency, safety/security, dependency, sophisticated, and practical users to look at attitudinal factors and behavioral variables. The results show that the longer someone has a cell phone, the more one becomes more attracted to and dependent on the device. The researchers also found that students who fell in the safety/security category used their phones the least as it seemed to serve as more of a safety blanket for emergencies. The sophisticated users use their cell phones the most since they are focused on the social aspect of their lives and care about their image more than the other groups. No matter what category the participants fell into, the longer they owned a phone, the more it became part of their lives and the harder it was for them to separate.

In a study by Lee et al. (2020), researchers were interested in the effects of smartphone addiction on adolescents as they become less addicted to their devices. The researchers were able

to study the behavior and mental health of adolescents over a six month period to see any changes. The study included a group of adolescents that continued to use technology as they have been and a group that was using technology less with the help of parental guidance. The students were given surveys at the beginning, after three months, and at six months in order to collect data on how the adolescents were in their addiction and recovery. Lee et al. reported results that showed an increase in the anxiety and depression levels of the group that continued technology as they had been. The recovery group showed an increase in quality of life and positive emotions as shown in the surveys given (p. 8). One aspect of the study looked at the number of conversations the adolescents were having with their mothers to see if there was a change with the recovery group over the period of the study. The study found that there was more conversation time with their mothers on weekdays for the recovery group than the technology persistent group.

A study by Xu et al. (2014) looked at family dynamics affecting adolescents' internet addiction. The study collected data through questionnaires from 5,122 adolescents and families in six different school districts in and around Shanghai, China (p. 2). Researchers looked at family dynamics of life, relationship, and social-economic status, which was then compared to the adolescents' internet addiction. Xu et al. (2004) found that adolescents who had a negative relationship with their parental figures had a higher internet addiction than those adolescents who had parents involved in their lives (p. 3). If parents were separated, the adolescents were more likely to develop an internet addiction as well. Family dynamics are important to adolescents' development socially and emotionally. This study shows how internet addiction can be increased by negative family relationships and dynamics.

Mental Health Issues and Technology

We have found ourselves in a society that is sharing more about our daily life than we ever did before, and in turn, this causes us to start comparing our lives with others. Communication is a big part of how society works. Social media has been an effective way to communicate with others, especially those with whom we lose touch. However, many people have been using social media platforms to compare their lives with others. This oftentimes daily exercise of comparison has caused many adolescents to feel more down or depressed due to a feeling of missing out. In a survey conducted in 2014, 64% of American adults reported that they owned a smartphone, and 46% of these owners highlighted that their smartphone was something that they could not live without (Pew Research Center 2015).

Phones have become more user-friendly over time as they have evolved so that the user is able to use more applications on them and at a faster pace. With more and more people having access to social media, the device itself has become addictive. People who suffer from loneliness or depression can become addicted to social media since they often desire a connection to others; however, this also can have a negative impact by making them feel more depressed and lonelier.

Smartphones allow us to be connected to more people from our current life as well as from our past. Using our phones, we are able to see what others are doing as well as have the occasional conversation with friends and family members. Having the ability to see what others are doing or going through can be associated with being called the "present-absent paradox," according to David and Roberts (2017). These researchers describe the phrase as being, "physically present for others but are really absent" (David and Roberts, 2017, p. 155). One is able to see what others are doing without actually being there. David and Robert "show that

feelings of exclusion have a significant effect on need for attention" (p. 160). This has caused

some people to feel lonely or depressed since they aren't part of the actual experience. Pittman

(2017) refers to this idea of being lonely due to smartphone addiction as "phoneliness" to refer to

the perception of being lonely due to smartphone addiction. This can be compared to Peper and

Harvey's (2018) research that shows that students with high levels of smartphone use report

having significantly higher levels of isolation, depression, loneliness, and anxiety when

compared to those who don't use their phones as much (p. 5).

Mental health is a growing concern in society. There have been studies that examine how

smartphones may be having an impact on people's mental state. In Turkey, Darcin et al. (2016)

conducted a study that looked at college-level students and how their smartphone use has

affected their mental state (2016). Students were asked to complete questionnaires to find out

information about their personal life and phone usage using a Smartphone Addiction Scale

(SAS), a UCLA Loneliness Scale (UCLA-LS), and a Brief Social Phobia Scale (BSPS). The

results of the SAS study showed that the students use their smartphones primarily for social

networking and internet use and very little for the telephone ability. The study also found that

people who use their smartphones primarily for social networking have a much higher risk for

smartphone addiction when compared to those who use them for internet use and phone calls.

"The risk of addiction to a smartphone increased because social anxiety causes the avoidance of

real-time relationships"(Darcin et al., 2016, p.4). People become trapped in a cycle of wanting a

relationship with others so they go onto social media. However, as a result, they become addicted

and avoid real-world relationships. In conclusion, the study found that some reasons for

excessive smartphone use may differ in relation to both social anxiety and loneliness. The use of

social media as a way to communicate has been shown to affect people's mental state in a negative way; part of this may be due to them not having the face-to-face conversation we, as humans, are programmed to have. We are substituting the face-to-face conversation with a false-positive feeling when we are on a social media application. In other words, we are not actually having a face-to-face conversation but perceive it to be one.

A study by Dolev-Cohen and Barak (2012) wanted to look at how conversations between Instant Messaging (IM) users affect their mental state. The study looked at 150 adolescents (ages 14-18) and the conversations among them using self-reporting and surveys to measure the mental state of the participants. The researchers wanted to see how the IMing would affect the participant's mood, from feeling positive to feeling highly distressed. The researchers used a 10 (normal/positive mood) to 40 (highly distressed) score range from a 10 question survey that the participants completed. The participants who were in the control group, which had a positive emotional state, showed a score of 11 before and after their conversations with peers. When participants showed a negative emotional state before the conversation, the mean survey question score was 28 and a 22 for after the conversation. This shows that when participants' mental state was in a calm or positive state before communicating over IM, the participant tends to stay calm. When the participants' mental state is in a distressed state before communicating over IM, their stress level lowers due to being able to talk to their peers. This study shows that adolescents are able to help decrease their stress levels through IMing with peers. For adolescents, it may be easier for them to be more free with their conversations over IM and in person since they are not face to face with the other person.

Phoneliness is a term that Matthew Pittman (2017) used in his dissertation that looked at how social media correlates with personality and loneliness. Pittman wanted to see how loneliness in individuals is affected by different social media platforms. He looked at texting, Instagram, Snapchat, and Facebook. Pittman had 352 undergraduates fill out a survey in order to gather his information. He found that social media can decrease the sense of loneliness in people when using social media in moderation. The participants' sense of loneliness was found to be less when compared to those who didn't use the platforms or used them very little. Pittman showed that loneliness is lessened somewhat due to the ability to communicate and interact with others more often, but he also showed that all things need to be used in moderation. When looking at how long the participants used social media, their sense of loneliness was at its lowest when using the platforms between 30 and 45 minutes a day. However, after that time period, the trend shows an increase in the participants' sense of loneliness when used for 2 hours or more (p. 73-75). Social media is a useful and helpful thing when used in moderation, as Pittman showed that Phoneliness is something that people need to be aware of.

A study conducted by Lin et al. (2015) wanted to see how smartphone users and non-smartphone users in Singapore differed with mobile phone dependency characteristics, which included productivity loss, a feeling of anxiety, and withdrawal (p. 1,213). The researchers emailed a survey to undergraduates in order to receive their data on phone dependency as well as sociability. The results showed that in all characteristics, the smartphone users had a higher degree of mobile dependency (p.1,213). The non-smartphone users had no degree of dependency, which allowed them to be able to be productive, be in more control of their emotions as well as not feel any form of withdrawal.

The amount of screen time that young children are receiving is associated with their attention span. Christakis et al. (2004) looked at how much TV screen time a young age (1 to 3 year olds) can affect their attention ability when they are older. Their survey showed that watching a screen for more than 2 hours a day is being done by 68% of children under the age of 2 (Christakis et al., p. 679). Of the students in the study, 10% of them showed signs of attention problems when they were seven years old (p. 679). This much exposure at a young age can change the brain's mental and emotional growth and affects their abilities later on to stay focused on school and environmental factors. When young children watch TV this much at a young age, it may lead to being in front of a screen more as they get older as well.

A study conducted by Afif et al. (2018) wanted to see how different members of a family are affected by technology use. The study wanted to see how different members of a family (mother, father, and adolescents) differ in stress (cortisol) and inflammation (interleukin IL-6) levels (p. 265) depending on their technology use. Cortisol awakening response (CAR) and IL-6 levels were used in this study since they allow researchers to look at the stress or mental wellbeing of the participants. Afif et al. collected data from 62 families over a week's time period to look at several factors: media and technology use, night time technology use, hours of sleep, and physiological measures for cortisol and IL-6 levels (p. 268). Afif et al. wanted to see how the amount of social media use and hours slept can affect the mental wellbeing of the participants. When looking at the results, the researchers found that the adults had a lower level of stress level when compared to the adolescents. When the adolescents increased their phone use or social media use, their CAR and IL-6 levels increased more significantly than the adult's levels did (p. 269). This indicated that adults are able to control or cope with their technology

use, but adolescents' bodies are unable to properly deal with the technology use and, as a result, have a chemical imbalance.

A study by Yoo et al. (2004) in South Korea was conducted to see if there was a correlation between attention-deficit/hyperactivity disorder (ADHD) and internet addiction with adolescents. The Yoo et al. (2004) conducted the study with 752 4th-6th grade students by having them complete questionnaires (p. 488). The researchers indicated if they fit the criteria for having ADHD via the Diagnostic and Statistical Manual of Mental Health Disorders-IV (DSM-IV) and ADHD rating scale (ARS). Yoo et al. used this information alongside internet use questionnaires to find their results. The results show that of the students with ADHD, 32.7% met the criteria for internet addiction, while 3.2% of the non-ADHD students met the criteria (p. 491). Students with ADHD show a need for constant change or stimulation, which is evident by them being more susceptible to being addicted to the internet and gaming.

The Centers for Disease Control (CDC) conducted a ten year study to monitor youth risk behaviors from 2007-2017. This study was conducted throughout the United States on high school students and was done through the National Youth Risk Behavior Survey (YRBS) (p. 7). One of the categories studied was the mental health and suicide rate of high schoolers. Specifically, "the percentage of high school students who felt sad or hopeless almost every day for two weeks or more in the past year" (p. 7). By asking students this question over ten years, the CDC wanted to monitor how the mental state of students changed over time. Having poor mental health may lead to other negative or poor life decisions, which the CDC wanted to track if there was a correlation. The survey found that the percentage of students feeling sad or hopeless increased over the ten years from 28.5 to 31.5 percent (p. 48).

According to Hsieh et al. (2019), internet addiction has a correlation with people that struggle with self-identity. The researchers investigated the mediating effects of self-identity and internet addiction and how they relate to psychological inflexibility and experiential avoidance (p. 3). The study was conducted with 500 college students in Taiwan (p. 3). Using student questionnaires to collect the information needed for the study, the researchers were able to show a correlation between self-identity and internet addiction. Hsieh et. al. found that self-identity confusion was increased as the student's internet addiction increased. The study also showed that the severity of psychological inflexibility and experiential avoidance increased with internet addiction. Students may be unwilling to put themselves in situations that are negative or out of their comfort zone. Students struggling with personal identity might surround themselves with the internet or social media as the study shows the correlation between the two.

Use of Technology at School

The increase of technology in schools has shown an increase in accessibility to resources, but it has also shown an increase in the amount of distractions one can have in a learning environment. A majority of grade schools in today's day and age are providing students with some sort of technology apparatus in order to allow them to learn in a way that better fits their generation's ability to learn. With these other devices being accessible, students don't necessarily need their mobile devices with them. Depending on the school, some might have a no phone policy; each class has their own rule or no phone policy at all. Students are continuing to use them and showing a need or addiction to having the device with them at all times. This could be causing many to have a harder time in school by taking in the material being learned.

Having a mere cell phone ring can cause interruption and missed academic materials. In 2010, a study was done to see if the ringing of a cell phone causes students to miss materials during a learning environment. End et al. (2010) looked at this by having participants watch a video, take notes, and take a short test after their comprehension. One group was able to watch the video, but had a cell phone go off two different times during the video and the other group had no disruptions. They looked at how many notes the participants wrote down as well as how they did on the test. The researchers found that the participants in the two control groups who had no distraction of a cell phone ringing during the video were able to score on an 8 question test an average discord of 94.9% and 79.2% as well as 79.5% and 82.1% of participants were able to take notes. The participants that had a cell phone go off during the video scored an average of 68.8% and 50.0% on the test and 53.1% and 43.8% of participants were able to take notes (End et al., 2010, p.56). This shows that the mere ringing of a phone can decrease the understanding of the materials presented to one's class. This study just looked at the ringing of a phone, but students are sometimes receiving multiple notifications an hour on their personal devices. So how much are they missing in class when this is happening?

Along with phones ringing, instant messaging (IM) is another way that students communicate a great deal. A study by Fox et al. (2009) looked at how IM during reading affects students' ability to comprehend what they read. They wanted to look at how long it took students to read an article, while some were IMing and others were not. The researchers also wanted to know how well they understood the material by taking a short test afterwards. Their findings revealed that participants in the IM condition took a great deal longer to read the material as well as to take the test than those who didn't partake in IM conversation (Fox et al., 2009 p. 52).

While it took longer for them to complete the task, it was found that the students did not lose the ability to answer the questions. The researchers questioned that due to the participants Instant Messaging frequently as well as with multiple people at the same time, they may be able to score the same, but just take longer due to switching their things more often. Due to the results, the researchers look at the correlation of participants' amount of IM time compared to their school GPA and found that "there was a negative association between IM use and two independent self-report measures of cognitive performance" (Fox et al., 2009, p. 52). Even though IM didn't show a decrease in their ability, it did show an increase of time to complete a task, as well as showing a correlation between the amount of IM and GPA.

The amount of information one learns during a lesson differs from person to person, but when one is texting on their cell phone, the participants are learning less than if they were not. The ability to comprehend and understand what you are being taught is very important. A study about the effects of classroom cell phone use looked at this information. Students at Sterling College looked at how much information students think they learn compared to how much they actually take in when texting and not texting during the lesson. When students were asked about many questions in a 10 question questionnaire they would get correct when they were texting or not texting during a lecture, and the results showed that they thought they would on average, score a 8.93 questions correct when not texting and 6.01 correct questions when texting during the instruction (Froese et al., 2012, p. 326). They then gave the participants two lectures and gave them a 10 question questionnaire to see how close they were to the predictions. The results showed that when they were texting, they scored an average of 6.02 correct answers when texting and 8.25 questions correctly when they were texting (Froese et al., 2012, p.328). While

students are learning less when they are communicating with others through their phones, they are at the same time missing out on classroom conversations and building communication skills.

In the Netherlands, a study by Van Den Eijnden et al. (2018) looked at how social media and gaming affects adolescents' mental state and school performance. The researchers used a number of surveys and self-reporting tools from 538 participants over a 2-year span starting in 7th or 8th grade (p. 699). Over the 2-year span, the researchers examined the number of hours spent playing games, using social media usage, social competence, life satisfaction, and educational GPA. As a result of the information collected over the 2 years, the researchers compared the information from the surveys with social media disorders and internet gaming disorders (p. 700). The internet gaming disorders and social media disorders were negatively aligned with social competence and life satisfaction for the participants. The social media disorders showed a negative result for female participants' GPA. As well as the more the participants used social media, their GPA was negatively affected. This study demonstrated that adolescents are more likely to show negative results in school or life satisfaction when the amount of social media and gaming are impacting their focus on school work and relationships with peers.

CHAPTER III: DISCUSSION & SUMMARY

Summary of Literature

Technology, specifically social media, is something that is evolving on a daily basis and becoming a daily life necessity. Through the evolution of technology, social media has become a way to increase communication among friends, family, colleagues, and mutual friends (Przybyliski and Weinstein, 2012, p. 238). The increase in the reliance on technology applications for social communication has affected daily life. Adolescents have grown up always having technology and the ever-evolving social media platforms always at their fingertips. Social Media has affected many adolescents to struggle with social-skill development and interpersonal communication skills (Sherman et al., 2016, p. 1027). The literature review was broken up into four sections to show how adolescents have been affected by technology addiction, communication skills, mental health, and the use of technology in the academic setting.

Addiction to technology is a growing field of study due to the amount of time adolescents and people spend on their devices. Andrews et al. (2015) and Peper & Harvey (2018) looked at how adolescents perceived themselves with their phone usage. Peper & Harvey (2018) stated that, "the behavioral addiction of smartphone use begins forming neurological connections in the brain in ways similar to how opioid addiction is experienced" (p. 6), and Andrews et al. (2015) adds that the students are unaware of how much time they are spending on their devices. When adolescents do not have control over their devices, they have an increase in anxiety, decrease in attention, and an increase in alertness to sounds that may be related to their phones, says Cheever et al. (2014), Clayton et al. (2015), and Ward et al. (2017). Jeong et al. (2016) and Oztuk (2013) looked at why adolescents are more susceptible to technology addiction and they found that if

they have ADHD or less self-control, they may be more susceptible to technology addiction. Sherman et al. (2016) looked at how the brain reacts to participants looking at Instagram pictures and how it relates to when they are on social media. "We found that the popularity of a photo had a significant effect on the way that photo was perceived" (Sherman et al. 2016 p. 2031).

Communication is a skill that develops as we get older. Communicating through online devices and in person has changed over the years, but it has also affected the amount of information that we are taking in. This section looked at how social media and cellular devices have affected how we take in information. Having a conversation in a face-to-face setting, one-self is using more senses than just their voice and visual. Przybylski and Weinstein (2013) and Chun et al. (2017) looked at how phone use has affected the ability to read others' emotions and have a face-to-face conversation. They found that "excessive smartphone use is likely to fail on cognitive control during emotional processing, and this impairment might be influenced on emotional processing related to social interaction" (Chun et al., 2017 p. 1). Studies by Aoki & Downes (2003) and Walsh et al. (2008) used group conversations with adolescents to learn about their perspective of conversation as it relates to social media addiction. They learned that adolescents become more dependent on social media and their technology/cell phone the longer they have them. The adolescents would have a hard time keeping the cell phone away without checking it frequently to see what is happening with their peers. Receiving a notification on social media to an adolescent will give them endorphins, and if they don't reach it, they will struggle to continue with a task. Bowman et al. (2010) and Walsh et al. (2008) saw a decrease in comprehension with the adolescents when they didn't have their device or couldn't look at their notifications. Bowman et al. (2010) found that adolescents had a harder time focusing on a

reading task with 22-59% increased reading time when they received a notification during the reading process. Lee et al. (2020) and Thornton et al. (2014) saw that the mere presence of a phone was distracting to adolescents due to the desire to give the phone their attention instead of what was in front of them, and the longer they were with the phone, the more likely they were to become more addicted to it. Lee et al. (2020) added that by separating/decreasing the amount of time on a device, showed an increase in quality of life as well as conversation with their mother figure. Depending on family dynamics, adolescents may be affected in different ways as Lee et al. (2020) and Xu et al. (2014) showed that more involved parents would decrease the likelihood of the adolescent being addicted to technology as well as communicating with family.

The mental health of adolescents has shown to have a correlation to technology in some aspects. Family dynamics and how they are using technology can affect their mental state. Afifi et al. (2018) and Christakis et al. (2004) looked at the family and found that the amount of screen time at a young age can increase the dependency when in adolescence. In adulthood, they have less dependency due to having a period of time in their life without technology. When a technology addiction is present, the research of David & Roberts (2017), Lin et al. (2015), Hsieh et al. (2019), and Darcin et al. (2016) showed that adolescents are having a negative self-image or self-identity and are having an increase in feelings such as anxiety, withdrawal, anxiety, and loneliness. A section of a study by the CDC looked at mental health and suicide rate, which showed that as the mental state of adolescents went down, the suicide rate increased. When adolescents are communicating over social media Dolev-Cohen and Badak (2012) and Pittman (2017) found that there was an increase or positive emotional state during that moment of conversation compared to when they are not partaking in a conversation. Yoo (2004) looked at

students with attention-deficit/hyperactivity disorder (ADHD) and found a correlation of students who had a technology addiction compared to students without ADHD.

The educational system is set up for students to learn and prepare themselves for adulthood. When the learning is interrupted, the amount of information that one takes in decreases. Technology and social media have increased the accessibility to educational knowledge but it has also increased the distractions during the educational environment. When in an educational setting and a phone rings or a social media notification comes through, the amount of educational knowledge being taken in decreases as End et al. (2010) and Froese et al. (2012) state. Froese et al. (2012) and Fox et al. (2009) conducted studies to see how texting would affect the understanding during reading and the finding showed a 27% decrease in understanding compared to when texting was absent (Froese et al. 2012 p. 329). As more social media is used, adolescents' school grades tended to decrease, as the study by Van Den Eijnden et al. (2018) showed.

Limitations of the Research

When selecting the literature for this thesis, a search was done using EBSCO, Educational Journals, Academic Search Premier, and Elsevier to find broad topics or journal articles from 2000-2019 that had to deal with adolescents' internet addiction and communication skills. This list was narrowed by using key terms or phrases such as social media, adolescents, communication, mental health, academics, and addiction. Many limitations were found with finding articles that researched adolescents' communication skills. Reviewing the bibliography of articles to see any relationship to my topic and other articles allowed more articles and search topics to be located. With technology changing so fast, articles that were less than five years old

were difficult to find. The trend of technology and social media is also changing constantly for adolescents, which made it difficult to find articles that dealt with current trends. Focusing on the following four topics allowed for specific topics to be focused on while still following the research question: addiction to technology, communication, mental health issues and technology, and use of technology at school.

Implications for Future Research

With technology and social media ever changing, society will continue to evolve around it. Researchers will continue to play catch-up to what is happening with technology since the finding of one day will be obsolete with tomorrow's technology. One can only keep asking questions and answer what is in front of them. After researching how technology is affecting adolescents and their communication skills, future research should focus on how society can decrease these addictions at a young age. Technology is not going away but instead growing so researchers could look at how society can achieve a balance with technology and the mental state of people. The communication skills of people are important to society and it would be interesting to see more research on how technology, specifically internet communication, has affected in-person communication.

Implications for Professional Application

The education system is an ever evolving system that is preparing future generations. With technology evolving at a rapid pace, educators are constantly learning what is new each year and thinking about what is in the students' best interest. When it comes to social media and the use of technology, there needs to be a balance in all learning styles when it comes to teaching our students a healthy lifestyle. The research that is presented in this paper helps the education

system see that technology is a good thing to help us grow, but we also need to be aware of the amount of use and the effect on future generations. A big part of the education system is to educate the youth on different topics, including English, Science, and Math, Social Studies, but it is also to prepare them for all aspects life will present to them. Having students communicate with staff and peers allows educators to measure how the students are doing in school mentally and physically. This may be harder for some students as they may be addicted to technology and struggle with communication skills. As educators, being aware of the impacts of technology and social media use on our students will allow us to be aware of the impact of their ability to learn what we are teaching as well as grow as human beings.

The research presented in this paper allows us to see the impact of cellular devices and social media on still developing minds. While communication is an important part of growing up, it also needs a balance of use with other parts of our daily life. Social media has allowed humanity to be more connected with one another, but it has also allowed adolescents to become more reliant on these devices and applications to connect without the need to have communication skills.

The minds of adolescents are in constant search mode for what is the newest or most interesting topic of that moment, and as educators, we need to find ways to keep them interested in the learning process. Being able to teach not just the subject content but also life skills will allow adolescents to be well rounded. As educators, we need to continue to learn the positives and negatives of what is happening to our students so that we can better understand what they are going through as well as how we can educate them.

Conclusion

Based on existing literature, social media has allowed the population to be more connected, but it has also increased the reliance we as a population have on it. This reliance has shown an increase in mental health as well as a decrease in some social communication skills. Adolescents are giving their cell phones or social media applications more attention at times than their schooling, which is, in turn, causing them to miss out on the learning process of academics and social skills. It is not that they don't want to do the work for school but rather that they have a hard time staying focused and staying engaged due to the constant stimulation they are receiving on their devices. Research is limited on this topic, but it has shown to be a growing field of concern as more information comes out about the effects of social media as well as the mental state of adolescents. Communication skills and social media addiction may have more impact on students with existing mental health concerns. Being aware of how our adolescents are being affected by social media and their state of mind will allow the education system to be able to educate and prepare students for their futures.

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