Fall 2020

Student's Perceptions of Smartphone Use at Home and at a High School Regarding a New Smartphone Policy: A Case Study

Ana Zurita

STUDENTS' PERCEPTION OF SMARTPHONE USE AT HOME AND AT A HIGH SCHOOL REGARDING A NEW SMARTPHONE POLICY: A CASE STUDY

by

ANA MARIA ZURITA-GARCIA

(Under the Direction of Peggy Shannon-Baker)

ABSTRACT

The new generation raised in the digital era continues to present unresolved challenges for both parents and teachers. The purpose of this case study is to analyze students' usage of their smartphones in their lives, and understand the success of a new school policy on smartphone use at an arts school in the U.S. For this qualitative research, I interviewed ten participants from the high school. The literary review informs us that smartphones are potentially addictive, with negative effects for healthy mental, emotional and social child development, as well as a source of misleading information. As a consequence, smartphones in the classrooms for instructional purposes are a distraction and present discipline and classroom management problems. The theory that guides my research is the bioecological system with its emphasis both on context (parents, school, smartphones) and on the influence of different systems on the child (proximal processes) where the context is situated. The findings of this study regarding the smartphone use corroborate some of the expectations drawn upon the literary review. The students who received their phones before high school are more attached and spend more hours on social media than students who receive their phones after high school and with boundaries. They are less addictive and more responsible smartphone users as well as appreciative of their parental values. The conclusion of the second research question indicates that a phone policy in schools that includes

discipline consequences and a supportive administration is a deterrent of using the phone for non-instructional purposes during class. The implications of this study are: high school is the most appropriate time for young people to receive a smartphone, parental guidance is crucial to develop responsible use, a strict smartphone policy with administrative support is critical to diminish students' distraction in class, and finally, common students' uses of social media highlight the urgent need for digital media literacy to empower new generations as media critical thinkers, especially given the current social and political atmosphere.

INDEX WORDS: Digital era, Youth smartphone use, Internet addiction, Social media, School smartphone use policy, Smartphones in schools, Smartphone for non-instructional purposes, Generation gap, Digital media literacy.

STUDENTS' PERCEPTION OF SMARTPHONE USE AT HOME AND AT A HIGH SCHOOL REGARDING A NEW SMARTPHONE POLICY. A CASE STUDY

by

ANA MARIA ZURITA-GARCIA

B.S., Universidad de Córdoba, Spain, 1993

M.F.A., Universidad Nacional Autónoma de México, México, 2005

A Dissertation or Thesis Submitted to the Graduate Faculty of Georgia Southern University

in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

STUDENTS' PERCEPTION OF SMARTPHONE USE AT HOME AND AT A HIGH SCHOOL REGARDING A NEW SMARTPHONE POLICY. A CASE STUDY

by

ANA MARIA ZURITA-GARCIA

Major Professor:	Peggy Shannon-Baker
Committee:	Robert Lake
	Antonio Gutierrez de Blume
	Mete Akcaoglu

Electronic Version Approved:

December 2020

DEDICATION

A mi madre, y a mi padre

que me enseñaron a vivir con intensidad y entusiasmo

y el valor del aquí y el ahora.

(To my mother,

Who taught me how to live fully and with passion

And the value of the here and now)

ACKNOWLEDGMENTS

I wholeheartedly thank the wonderful academic and personal support that my chair Dr. Shannon-Baker has provided me. In addition, I would have never started this work and believed in myself without the guidance and the kind words of Dr. Robert Lake. I would like to thank Dr. Antonio Gutierrez and Dr. Mete Akcaoglu for invaluable, honest and wise feedback, and to all my professors in the program who contributed to my education in curriculum studies

My special thanks to my generous soul sisters and brothers Maya, Miranda, Bradley and Tom for the many hours of revision and editing that have given me.

I deeply appreciate the support of my two wonderful sons, who have gracefully assured me that they did not feel abandoned by their mother.

Thank you to my brothers, dear friends, and especially my cohort Irina for believing in me.

Finally, I owe this thesis to my mother. The idea of making her feel proud of me and her continuous encouraging words, gave me push and energy in my many low moments.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

The Problem

The background of my research is focused in three different, yet interrelated, social circumstances: the digital era, the wide generation gap between teachers and students, and the incorporation of the smartphone devices in schools as an educational tool. The common denominator of the three issues is the use and reliance on the technology revolution that started with the World Wide Web in the early 1990s that exponentially expanded to the present.

The digital era, strongly shaped by the consequences of the technological advances, has produced a fast and intense global socio-economic transformation compared in scale to the industrial revolution (Shepherd, 2004). Our lives are shaped by a "rapidly growing and intensifying complex of sophisticated computing technologies" (Adams, 2015, p. 87). Digital technology is in continuous evolution, and innovation has provided uncountable benefits to basically all fields: communication, science, medicine, engineering, business, architecture, art, or education (United Nation Report, 2020).

On the one hand, this fast transformation deeply influenced how millennials (born 1981 – 1996) and generation Z (born after 1997) were raised and experienced the world (Carr, 2010; Prensky, 2001; Turkle, 2013, 2017). Marc Prensky (2001), educator and writer who popularized the terms "digital natives" and "digital immigrants", pointed out that the huge difference between generations due to the arrival of the digital era has created a big discontinuity between generations. Even though being "digital immigrant" or "digital native" does not separate us in terms of the capability to be technological savvy, (Kirschner & Merriënboer, 2013), we,

generation X, are privileged observers of the end of an era: these new generations are now our students and we, teachers, are probably the last generation to observe these radical differences in upbringing and the first generation that experience how schools embrace this technological revolution.

One cannot deny that there are immense advantages and invaluable benefits of digital technology in the 21st century, such as global connections. These connections include personal relationships, as well as international relationships. Some examples are the new prospects in digital business (Westerman, Bonner, & McAfee, 2014), the possibility of solving global problems with global solutions in undeveloped countries (UN report, 2020), or the advances in science, and digital health thanks to instant collaboration and communication (Mesko et al., 2017).

In the field of education, teachers and students have discovered previously unimagined benefits from using the new media technology for teaching and learning (Adams, 2015). At the same time, one can't deny the downside of digital technology, especially for our students. Teachers are facing unexpected challenges and new worries, such as plagiarism, online paper-mills, cyberbullying, or sexting (Admas, 2015). In addition, youth's online and video addiction has raised concerns among parents, youth clinical therapists, sociologists and child psychiatrists (Carter et al., 2016; Chapman & Pellicane, 2014, 2017; Dunckley, 2015; Koch, 2015; Radesky et al.; 2015, Steiner-Adair, 2013).

On the other hand, the 2010 National Education Technology Plan designed by the United States Department of Education included the steps to an educational technological revolution in American Schools. An important step in the NETP was to provide devices with Internet connection to all students in the country. That connection is necessary in order enjoy the

pedagogical benefits that the Internet provides to the curriculum and instruction (Adams, 2015; Lai & Len; 2015). The devices needed for that purpose were either acquired with the school budget, or allowing students to use their personal mobile devices, such as iPad, laptops or smartphones. That was the beginning of what it was called the BYOT program (Bring Your Own Technology) or BYOD (Bring Your Own Device).

As a teacher and mother, I have seen these social circumstances play out firsthand—both at school and at home. I experienced how the difference in the upbringing of the new generations has produced unresolved lack of connectivity and understanding between teachers and students. In addition, the rush in incorporating smartphones in the school where I work without evaluating the benefits has caused unwanted discipline issues as well as diminished and hurt the purpose of education and therefore, the betterment of the society.

The Purpose

The purpose of this case study is to analyze the perception of the students' usage of their smartphone in their lives and regarding the Smartphone Policy at OaksLand High School (pseudonym). My goal is that learning about the role or the level of importance that the smartphones play in their lives will establish a meaningful connection and understanding that will help me as a teacher.

The Research Questions

My study was guided by the following research questions:

- What are students' perceptions of their use of smartphones in their lives and in their school?

- What are students' perceptions of the implementation of a new smartphone policy?

Clarification of Key Terms

I used the term smartphone in my writing to refer to mobile phones and the Internet. In the quotes of my participants the terms cell phone or phones refer to smartphones. Finally, OaksLand is a fictitious name of a public high school in Southeast, U.S.

Context

The context of this research embraces four big areas: society, education, the school, and the students. The social context presents the paradigm change that occurred in the digital era, not only in a social but psychological way. Main research comes from main youth developments and social science technology experts. The educational context overviews how, when and why technology is a fundamental part of education in the 21st century, as well as the role of technological corporations. The school context covers the recent past and present situation related to smartphone use of the high school in the south chosen for this case study. Finally, the students' context informs the students' perspective and perceptions of the use of technology in the school.

Social Context: The Digital Era and Teenagers' use of Technology

Year after year, our students are arriving in our classrooms loaded with more screen time in their backpacks, as well as being better equipped to navigate the frantically changing world of apps options, you-tubers, notifications, memes, and the like. In 2011, 77 % of young ages 12- 17 reported to have a cell phone, and 23 % of kids under 12 reported to have a smartphone (Purcell, Buchannan & Friedrich, 2013). Seven year later, "fully 95% of teens have access to a smartphone, and 45% say they are online "almost constantly" (Anderson & Jiang, 2018). This is their normal life. "Our children, born into the digital culture, are natives; they speak the language, tech is their frame of reference, their mind-set" (Steiner-Adair, 2014, p. 4).

Six years after Prensky described and rationalized the characters of the new society into digital natives and digital immigrants (Prensky, 2001), a faster and more ubiquitous possibility of connectedness came in the market. Since 2007, the revolutionary iPhone technology, adopted and copied worldwide, has changed the way people socialize, act and think. A year later, kids between the ages of eight and eighteen were already spending more time on their electronic devices than any other activity, an average of seven and a half hours a day, seven days a week, and most of the time with more than one device at the same time (Robert & Foehr, 2008). That change in habits has only increased. As clinical psychologist Steiner-Adair (2014) describes,

> They - teenagers - typically multitask on the computer, simultaneously instant messaging, uploading YouTube videos, posting updates on Facebook and continuously searching the Web for fresh diversions. Our children, born into the digital culture, are natives; they speak the language, tech is their frame of reference, their mind-set (p. 4).

More recently, psychologist and expert in generational differences Jean Twenge has changed the name from generation Z, as would correspond, to generation i, or more exactly, i-generation, as this population was born in the same years as the Internet (Twenge, 2017). Born between 1995 and 2014, this is the first generation for whom internet access has been constantly available, right there in their hands. Twenge also thinks that this i-gen shows more drastic changes in its behavior and way of thinking than previous generations "In all of my analysis of generational data – some of it reaching back to the 1930s – I had never seen anything like that" (p. 4).

At the same time that smartphones were becoming part of our lives, psychologists, sociologists, psychotherapists, pediatricians, and counselors around the world started to express their alarm concerning behavioral and mental problems derived from excessive internet use.

They called it problematic internet addiction, (PIU) or excessive internet use, and defined it as a preoccupation with an irresistible use of Internet use for periods of time longer than intended. This behavior can lead to significant distress or impairment (Shapira et al., 2003). Another problem derived from social media is fear of missing out (FOMO), affecting the mental health of the user.

Their research and publications are growing exponentially. They inform the general public at the same time as they warn parents and give guidelines for "going back" to a "normal" and healthy social life for their kids (Chapman & Pellicane, 2014; Dunckley, 2015; Kardaras, 2016; Koch, 2015; Melillo, 2015; Steiner-Adair, 2014; Schumacher & Zuckerman, 2015; Sheldon et al., 2019).

Nevertheless, even though this alarm slowly spread into mainstream media, those publications are not changing the upward trend of use. Many of these books are presented more as guides to parenting and are found in the genre of "family books" in the bookstores. The reality is that the image of a young kid hypnotized on a screen is so familiar now, that the initial shock and parents' outcries is as démodé as a flip phone.

Educational Context: Technological Revolution

Technology is the most critical component of 21st century education (Lai & Len; 2015, Spector, 2015). This trend started in the late 20th century and has been gaining momentum ever since. It is expected to continue changing the face of education and work in a combination that will transform society itself (Forrester Research, 2017). In 215, J. Michael Spector, the editor of the new *SAGE Encyclopedia of Educational Technology*, acknowledged the rapidly expanding reach of educational technology. Within the world of education, technology has impacted a wide variety of disciplines, such as educational computing, educational systems, instructional design

and development, learning psychology and technology integration – and with each new development in artificial intelligence, opportunities for educational technology applications will continue to expand (Spector, 2015). This expansion of technology applications into education has been rapid, and publications, including the publication of the new Encyclopedia of Educational Technology, have been prolific and passionate about the exciting possibilities of technology in education (Brown, 2006; Cairncross, 2001; Collins & Brown, 1988; Facer & Sandford, 2010).

The high numbers of research, publications and on-line journals dedicated to educational technology show the increased interest in the subject. Journals such as TechTrend, International Journal of Instructional Media, Journal of Educational Computing Research, Quarterly Review of Distance Education and International Journal of Instructional Media, have each addressed different ways that technology is impacting schools and higher education, and how to make the most of technology in education.

On the other hand, as education is becoming increasingly dependent on digital technology, critics are raising awareness of the downside of too much technology in schools. One example are teachers Joe Clement and Matt Miles (2018), who questioned the real goals of tech-ed companies, which with the slogan "meet the kids where they are," confuse the teachers into the benefits of more screen time.

Education advocate Diane Ravitch also criticized the monetary interest behind the technology revolution in schools that may substitute teachers,

> They – parents - fear that the business leaders want to cut costs by replacing expensive humans with inexpensive machines, which never require health care or a pension. They believe that education requires human interaction. They prefer experience,

> wisdom, judgment, sensibility, sensitivity and compassion in the classroom to the cold, static excellence of a machine. I agree with them. (Ravitch, 2017, para.11).

Despite the controversy, digital technology has opened a new world of possibilities, options, and resources for K-12 teachers. New generations of teachers will embrace, expand, and perpetuate this trend.

NETP: The Beginning of Bring Your Own Device (BOYD) Program. For schools that had no budget to acquire Chromebook or laptops, the National Education Technology Plan (NETP) published in 2010 included the recommendation of supplementing the lack of equipment with their personal devices. That was the beginning of the Bring Your Own Device Program (BYOD). For the district of the high school of my research, the BYOD program was reduced to "smartphones allowed in schools" or, as the students interpreted it "smartphones allowed on the tables."

The 2010 National Education Technology Plan. Every year since 1996, the NETP has outlined a long-range educational technology policy for the country. The 2010 plan started acknowledging how technology plays a vital role in our lives and how education should be transformed according to the times. For that, education needed to be redesigned. The creators of the document claimed that 2010 was the moment of revolution in education "driven by the continuous push of emerging technology and the pull of the critical national need to radically improve our education system" (Department of Education, 2010, p. xviii).

The 2010 plan had two main goals. The first goal was to promote technologically based learning approaches to improve student learning. The second goal was to generate data that could be used to improve teaching. This goal was established to support the administration and improvement of standardized testing through school computers.

A Public School District Context

The implementation of the 2010 National Plan arrived with small changes to the school district of the high school of my study. There was an investment in more laptops for the Media Center, some grants to teachers to have laptops in their classrooms, and a couple of in house teacher training of online educational resources, such as quizziz.com, a website that generates tests, or quizlet, a website of flashcards.

In June 2012, the Board of Education in the School District took a decision that would change the schools' landscape completely: to let the students bring their phones for the 2012 - 2013 school year. According to the Director of the Technology department in the district at that time, it was approved without any debate in which her Department or teachers could have a voice, and without a proper contract or commitment of use.

First Smartphone Policy in 2012. The general policy to control the use of smartphones in all schools in the district is included in the Code and Conduct booklet. The booklet includes all the general rules and expectations from the students of the whole district, such as dress code, or the consequences of bringing drugs or weapons to school. On page 21 of the booklet, a short paragraph states that the smartphone would only be used for instructional purposes. There is no reference to possible consequences for inappropriate smartphone use. The booklet is distributed to every student in the system the first week of the academic year. In the two public schools in the South that I have worked in since the phone was allowed, homeroom teachers normally spend 30 minutes during morning advisory time to go over the whole booklet in the first week of school. Students and parents sign the last page of the booklet stating that they have read the whole Code and Conduct booklet. The last page is collected by homeroom teachers. As a

homeroom teacher, I have seen some students faking their parents' signature on the premise that their parents agree with everything or that they forgot to give it to them.

An Incident with Consequences in OaksLand High School. In the academic year 2016-17, OaksLand High School experienced an incident that forced the Principal to change the school's smartphone policy described above.

On November 5, 2016, the day after the presidential election, a student with conservative parents and views conspired to engage her American literature teacher, who was well-known for her liberal ideas, in a political discussion during class, with contentious questions. At the same time, the student plotted with two other students to secretly videotape the teacher, hoping to provoke the teacher to express negative personal opinions against the newly elected president Donald Trump. The student's father was texting questions to the student's smartphone. The students and parents were complicit in the entrapment. They immediately uploaded the video onto Instagram. Some days later, that video attracted the attention of the district, which recommended a suspension for the teacher. The possibility of a litigious outcome from the teacher based on violation of her privacy was also contemplated, but not executed.

A 2017 New Policy. This incident led administrators to be much more involved in the control of smartphone use with a much stricter plan for controlling usage. That decision was made, in the principal's words, "to protect teachers from students videotaping." In contrast to the original policy included in the Code and Conduct booklet that the rest of the district is still using, this new policy is given separately to OaksLand High School, including more detailed specifications in terms of phone use. Every teacher must now place a plastic shoe rack with pockets, called in the school a "telephone tree," by the door. At the beginning of every class, students have to place their devices in the pockets of the telephone tree. Smartphones have to be

turned off and put on silent during instructional time. They can retrieve the phones in the last two minutes of each block day. Use of phones during testing is not permitted or in bathrooms and hallways during class time. The document stresses that recording or taking pictures without permission is strictly forbidden. Use of the phone in the library or charging phones during school time is also forbidden. Another addition to the district policy is that students are not allowed to use earbuds or headphones while in the building at any time unless supplied by the supervising teacher during instructional time. The policy also states that phone content can be searched and reviewed if there is suspicion that it may have been used in an activity prohibited by the code of conduct. The document also outlines that students can check their phones during lunch time or in the five minute pass between classes.

The changes that are significant for this research are those related to the specification of offenses. With the first offense, teachers can confiscate the phone for the rest of the day if students do not comply. With the second offense, the phone must be picked up by a parent or a guardian. With the third offense, students will receive detention and the phone will be taken to the Assistant Principal, who will keep it for five days and communicate to parents about the offense. With a fourth offense, parents will decide if the student is suspended for one day or the phone is taken away for 30 days. A further offense will result in the student not having a cellphone on school grounds during the school day for the rest of the year. The document opens the possibility of further disciplinary actions in cases of not adhering to the previous rules. Also, after the third offense, the assistant principal enters the smartphone incident into the student's discipline record for future reference.

Even though the new smartphone policy in OaksLand HS originated from a single incident involving inappropriate use, this policy is now aimed at improving the school climate as

well as helping students to experience life without phones. Thus, it does raise important questions for all educators: What problems still have not been resolved? How are teachers enforcing the new policy and how are students complying with it? What are the students' perceptions of their smartphone use in school and in their lives as a whole? Can a stricter school policy help in the global problem of Problematic Internet Use in our students?

Teachers' Context at OaksLand

Before 2012, the incorporation of technology in the classroom was embraced with different rhythms according to the subject and the teacher's experience and perception of Internet and digital technology in general. For some of them it was a challenge, especially for lack of mentoring or professional development. After 2012, we were added a new role of being a teacher in the digital era: to police the misuse of phones during class time. That issue affected usual classroom management challenges such as control that students don't use their phones for social media or take pictures of tests and quizzes to pass on to other students. Consequently, it led to additional time-consuming communication with parents and school administration. Many teachers share their frustration in informal gatherings, feeling that the code of conduct is not working and that students are too addicted to their phones to concentrate in class and stop sneaking them out of their backpacks or pockets. As the Director of Instructional Technology of the district of OaksLand High once told me, that measure opened a Pandora's Box.

My experience suggests that the decision to let phones in OaksLand High School without a much stricter policy opened the door to several critical challenges that have affected school life in a negative way, particularly the relationship between teachers, administrators, and students. In the meantime, these technological changes have been so frenetic that we as teachers are still

developing the perspective to properly learn about, evaluate, digest and incorporate the appropriate response to these revolutionary classroom changes.

As individual teachers and as a profession we must conscientiously strive to incorporate technology in the most beneficial way for schools – or everyone from students to the educational system will lose. Examining the impact of the tsunami of technology, embodied by the policy that controls the use of phones on the educational environment is the first step to managing it wisely, hence one of the focuses of my research.

Students' Context. Their Perception of Digital Technology in the Classroom

Student's perceptions of the use of digital technology in the classroom are overall positive. This is according to international research (Lin et al. 2011; Yifat 2009) and national (Bourgonjon, 2010; Chou et al. 2012; Kevin & Muñoz, 2016; Vorthmann, 2017), which covers practices where all kinds of screens were involved. Nevertheless, the success of the learning process is determined by different factors. In a study about the use of video games for teaching purposes, for example, the perceptions of students regarding the usefulness, ease of use, learning opportunities, and personal experience with video games determine the academic success. (Bourgonjon, 2010). Another factor is the potential distraction. In a study of students' perception of iPad interaction in class, results inform that the class is actively engaged and students, but distraction by the multitude of irrelevant websites and apps were a challenge for students' concentration (Chou et al., 2012). Teachers' preparedness is another challenge for success. Studies in Israel show that high school students' informal experience with the technology led them to believe that they knew more than their teachers. The study alerts that this belief may delegitimize the school as a learning-to-learn institution (Yifat, 2009).

Related to the use of mobile phones as a learning tool, findings indicated that the majority of students (90.7%) were using a variety of mobile phone features for school-related work. (Kevin & Muñoz, 2016). However, only 73.8% of the students supported integrating mobile phones into the classroom instruction, and 70.6% believed that mobile phones supported learning. It is interesting to note that students are aware of the potential distractions and had serious concerns about the disruptions caused by using mobile phones in the classroom and by inappropriate usage (Kevin & Muñoz, 2016).

Autobiographical Roots of Purpose

My autobiographical roots start with my life as a mother and as a high school teacher. My two sons have been my first inspiration, both my love for them and my frustration with them. They are three years apart, providing me with two very different ways that they have experienced their relation to their digital devices. This has been a very interesting opportunity for me as a researcher. As a teacher, I have been in a profession that I love for more than 20 years, I have touched many souls in more than ten cities, in three different countries, from lower school to College, from rich Upper East Side New York students to low income African American undergraduate southerners. I have always been very active in professional development, researching and producing new teaching resources, organizing and collaborating in a good number of World Languages Conferences, and trying to recycle and adapt myself to new exciting teaching methods. At this time of my life, the most significant element introduced in all aspects of our lives is what has been one of my most recent, main objects of interest: the smartphones.

As a Mother, I Need to Understand

Every school day my older son gets up, goes to the bathroom, eats cereal and gets dressed for school. He does all of those activities with only one hand. On the other hand, he carries his smartphone. In the car, he is on the smartphone. I stop by the school door and I have to tell him to get out, as he has not noticed we are there. He leaves the car and does not acknowledge me or listen to my "have a good day." He crosses the street looking down, without hearing a car passing very close to him. He is completely disengaged from the present, the here and the now.

And I, his mother, have become this boring and annoying person with the same discourse who is always telling him not to do these things. Like many parents of my generation the topic "smartphone use" and its consequences has taken over most of our conversations, most of them ending unpleasantly. Our perceptions as parents are that our children are addicted to their cell phone, and that somehow, we have lost them.

The fact that my son is a typical sixteen-year-old, that his generation has been identified under different names, and that their common characteristics differ highly from my generation has been described by numerous authors (Prensky, 2001; Stain-Adanir, 2014; Twenge 2001). This does not make it easier for me or other parents to fully accept those characteristics as the new norm; it does not offer reassurance. For me, it is not only that he is disconnected from the here and now, but that I, his mother, have no control, whatsoever, over what are the sources of his education and his thoughts and images of the world. What do teenagers do on their phones? What kind of people are they becoming because of those constant inputs they receive and that we as parents cannot any longer control? What are they listening, reading, watching, learning, texting? That feeling of not knowing our own children, of the despair and loss, is what has inspired me to research more about this topic.

My autobiographical goal of this research starts with my need to know my son and my students and understand them better.

Private Versus Public School in the U.S. related to smartphone use

My first experience with smartphones on the students' desks was rather traumatic. It happened when I started to teach in an American public school for the first time, and right after the third quarter of 2013-2014 academic year. After more than fifteen years of teaching in two private schools, the change to public school was a huge culture shock, to say the least.

After three years teaching in New York, I moved to the South and I started teaching in the most expensive and elite school. In both private schools where I taught, discipline and student work ethic were hardly an issue. They were two schools that evinced a very competitive academic atmosphere, small student/teacher ratio, a strong homeroom program, state-of-the-art resources and facilities, arts programs, supportive teachers, and a majority Caucasian population of both teachers and students.

I never saw a cell phone in any class until September 11, 2001, in New York. That morning, the corridors were full of students calling parents. With news of parents and family members dead in the Twin Towers, the principal allowed students to call parents. He made an observation about how surprised he was that so many students would have a cell phone. In those times, to have a flip phone was a sign of wealth and modernity.

In the private school where I worked until 2014, smartphones were not allowed in the South. Students had to leave them in their backpacks. At the end of the day, it was normal to see the kids calling their parents in the carpool line. If the kids tried to sneak it out, even during lunch time, it was confiscated. Kids could also serve detention depending on the number of violations of the rule. Every year, the Dean of Students increased complaints about the number

of phones confiscated during the day. Still, there were no more than four phones confiscated in a single day, out of a population of 400 high schoolers.

Two Different Worlds Two Miles Apart. By the spring of 2015, when I moved from the private to the public school in my town, smartphones had already been allowed in public schools across the state for two years. For me, the move from private school, where phones were not allowed, to a public one in the same area was one of the most complex and difficult adjustments I have experienced as a foreigner who has lived in three different countries and many different cities.

Apart from changing from teaching fifteen competitive and highly motivated students to thirty students with discipline issues and low motivation from one day to another, the smartphone issue is what has made the adjustment more traumatic and distressing.

In the public school where I taught, rated the second best in my city, many students had a telephone on the table. They spent part of the class either sending messages, listening to music, checking their hairstyle, watching videos, or playing video games instead of doing class work. I would stop the lesson on a daily basis and repeat the same message: put phones away. Not everybody would do it. One day, I was so frustrated that I took the phone from a student's desk at the time that she violently grabbed it from my hand, furious that I dared to take her phone. She scratched my hand with her fingernails. I felt like a foreigner in a world where I did not understand the language.

I was very surprised that the phone issue was not on the agenda for the monthly meetings, or that in the morning announcements; the principal seemed more concerned about making sure the boys had their shirt tucked in and they did not wear hoodies. I never heard an announcement reminding students to place smartphones in their backpacks and only take them out if the teacher

asked them to for a specific purpose, as the code of conduct published by the Board of Education states. It was as if there was no issue. When the bell rings at the end of class these days, they all put their headphones on and wander the corridors without talking to each other.

I talked to other teachers about my students' behavior with their phones and discovered that my colleagues shared the same frustration. They agreed with contempt and shrugged their shoulders with a kind of "welcome to public schools" attitude. Some teachers, out of sheer frustration, opted to avoid conflict by letting students use their phones as they wished. As one teacher told me once: "I pick my battles."

One day, I decided to reach out to my parents. I sent a long email to every one of them about the problems of the abuse of smartphone use among the students, including some research. In 2016, mainstream media had not yet paid much attention to the recent research about problematic smartphone use. In the email I advised the parents that, as a consequence I would give a zero in participation to the student that used the phone without permission. Many parents emailed me back congratulating and supporting me. One mother told me it had been the best email she ever received from the school in four years. My guess is that parents were finding an ally in school for their own struggle at home, and that support was more valuable than a bad grade. Still, I felt that my private initiative was a consequence of frustration and insufficient support. Academically penalizing a student for a discipline issue related to inappropriate use of the phone would be wrong for any teacher to do. It would be inconsistent and therefore confusing to the student and less than ethical for the teacher. If it is the case that some students are suffering from a new syndrome that the adult world and its institutions have allowed by means of permitting powerful private companies undue influence, and due also to faulty

educative guidelines and confused parents, then students' inappropriate behavior/usage would need to be addressed in a very different way.

One year later, I moved to another high school in the same town, considered the best public school in town, and one of the best in the state. Discipline issues with the use of smartphones for non-instructional purposes were much less than my previous school. Still, the incident that led to the change of the policy was a response to misuse of the phone.

A moral dilemma obsessed me. Why in the private schools, where normally most of the students go to Ivy League colleges, were students having the opportunity to learn without the distraction of telephones, and why did they do the opposite in public schools? Why is there not a debate or a discussion about this important issue? Are we not allowing and promoting a wider gap between social- economic classes in terms of preparing students to be ready for the professional world? What was I missing? Was part of my adjustment to public schools just looking the other way and adapting a survival mode to what I was seeing around me? Moreover, if these two public high schools were the best in town, how is the smartphone issue in the schools considered the worst in terms of discipline and academics? How is the effectiveness of the general policy included on the Code of Conduct, without the rigorous changes made in the school of my research? It is easy but worrisome to imagine.

The big disconnect I suffered with despair with my older son and I, I also felt between my students and myself. We are doing a profound disservice to our students if we do not try to understand them and to know them. As a mother and a teacher this daily struggle must be addressed because the untold consequence is a lost generation. As an outsider I have seen and experienced other ways of living and learning. In my hometown in Spain, for example, students in public schools must follow the same policy as private schools in our city. I can see how my

nieces and nephews' abilities to interact socially with their friends are more natural and healthier than my son's classmates in our city.

I believe my unique personal perspective is also an asset to this research. Not only have I seen different approaches in different countries and systems, private and public, schools and college, I am still young enough to understand and welcome the beauties of digital technology, and old enough to also appreciate what we have lost.

In conclusion, my personal experience related to this topic is that teachers are still in the dark and missing a broad debate about the consequences of allowing smartphones in the classrooms, why we need, or even what to do about BYOD when missing guidelines and leadership. Our own over-usage of smartphones, the pressure to incorporate fun technology such as online games in our classes as the new panacea, and the huge frustration in seeing - more clearly every year - that our students are increasingly addicted and distracted by their social media and video games, and have less and less time to develop critical thinking and learning - all this is what motivates the current proposed project.

CHAPTER 2

REVIEW OF THE LITERATURE

For my literary review I present a critical summary of relevant research in my field of study, that is, the relationship between adolescents and their smartphones used for educational purposes. My research for this literary review has focused on the field of social sciences, specifically communication studies, psychology, sociology and education.

I start with studies about how digital technology has revolutionized curriculum and instruction in schools. Next, I will review the behavioral and social changes that have occurred in society because of the recent technological revolution, and specifically, in adolescent behavior.

The literature about incorporating personal devices to U.S. schools has two different approaches: one optimistic, led by technology educators and technology companies; the other more cautious, led by clinical therapists, and cyber psychologist researchers.

In the last decades, changes in technology have been happening so fast that studies of how technology is changing our society are soon outdated. In my review I have tried to focus on the most influential and current publications and have updated my readings throughout the writing of this thesis. Some work has been mentioned in Chapter One to support the social and school context.

Digital Technology in American Schools

Digital technology has dictated rapid changes in First World countries' education. Since the beginning of the digital information era, the representation and presentation of the different disciplines have welcomed the digital landscape and gone through continuous transformations. Schools and policy makers have responded to the drastic changes of the digital era equipping the classrooms ever changing software and computing devices (Adams, 2015). According to

Clements and Miles, (2017), 21st century changes in schools started with programs designed to solve administrative problems such as grade calculation, or attendance. Then schools adopted web pages so students could access materials they have missed or lost without having to ask teachers. All those needed an adjustment to "old style" teachers, but it did facilitate the lives of the teachers and administrators without interfering with the educational goals. After 2010, ed-tech started to focus on the students and increasingly there were more online resources and online textbooks instead of paper. Teachers were trained to incorporate 2.0 tools for teaching, YouTube videos in presentations or gaming, at the same time schools began investing their budget in laptops and i-Pads.

Currently, in American schools technology shapes curricula and instruction at three different levels: as content, as a tool and as a context to define the roles of technology in the curriculum. As content, teachers are required to develop learners' technological skills, so they can better meet societal demands. Trilling and Fabel (2009 in Lai & Lei, 2015) identified three essential skills for the 21st century that include digital technology: innovation skills that engage students in critical thinking and problem solving through communication and collaboration, digital literacy skills, and career and life skills. As a tool, the internet has become a critical medium for delivering curriculum. Technology has enriched and expanded instructional materials through enabling the incorporation of authentic learning materials. As a context, there are many positive possibilities, such as empowering the creation of learner-generated contexts, enabling the construction of learning experiences to enrich or revolutionize the curriculum, or helping to move curriculum closer to the participative and social nature of learning (Lai & Lei, 2015).

In addition, digital technology played a key role during the health crisis that started in March 2020 (COVID-19). The need to control the rapid spread of one pulmonary and neurological virus that started in December 2019 in Wuhan, China, obliged citizens from around the world to stay at home. This crisis changed all areas of our lives, including the dependence of online programs to meet, work and learn. During the COVID pandemic, digital technology has benefited students and learning; without this connection many school systems would have lost contact with students and education.

Digital Technology, Adolescents, and the Health Community

As we mentioned above, digital technology presents a downside. Since the first years of the Internet, research indicated that it affects the brain (Kimberly Young's, 1996). Later, publications that have been presented in both academia and the mainstream with such bestsellers as *The Shallows: What Internet Is Doing To Our Brains* (Carr, 2010), finalist for the 2011 Pulitzer Prize, and *Alone Together: Why we Expect More from Technology and Less from Each Other* (Turkle, 2011), sparked a growing interest in the social science community about how the Internet is influencing our behavior and daily lives. In contrast to the optimism of big tech companies when announcing a more sophisticated device and to the excitement of consumers when exploring a sensational new app, these sociological and behavioral studies show a consensus in their less optimistic findings.

This section covers an overview of seminal studies and main publications describing changes in the brain and in behavior in the medical, technological and social studies fields. This is followed by a section on how mainstream media and private effort is covering up and raising awareness of this new phenomenon, as well as what is the society, including parents, students, and the educational community response.

Defining a New Syndrome

In 1996, psychiatrist Kimberly Young studied the behavior of a middle-aged woman after being exposed to chat rooms for 60 hours a week over a period of three months. The participant "reported feeling excited in front of the computer, and depressed, anxious, and irritable when she would log off. She described having an addiction to the medium 'like one would to alcohol'" (Young, 1996). Nevertheless, it was not until 2010 that the Encyclopedia of Neuroscience defined Internet use as problematic as a recognizable behavioral syndrome which shares many phenomenological features with substance-dependence and impulse-control disorders (Koob et al., 2010). In those fourteen years from the first research of Dr. Kimberly (1996), the Internet changed our habits at a high speed, especially after the launch of smartphone technology in June 2007. That was quickly followed by new social media platforms and a multiplication of Apps. Still, even though the general public, mainstream media and some authors called it addiction, it was a controversial term because, traditionally, health communities only use this term to describe physical dependence on a substance (Holden, 2001). It was in 2013 that finally the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), Fourth Edition, classified overuse of the Internet in mobile devices as an addiction disorder under an impulse control disorder. Other terms for this phenomenon include Internet Dependence, Problematic Internet Use (PIU), or Pathological Internet Use. That inclusion was determinant, had extended echo and was covered in social science publications.

Groundbreaking Publications. Together with the rapid and unstoppable change in habits as the Internet market made us subordinate to mobile devices, there were some publications that also started to open a social debate about the downside of the Internet.

One of the first critiques about the effects of the Internet in cognition was made by author Nicholas Carr, who became well known for his article: “Is Google making us stupid? (Carr, 2008). With this provocative title, Nicholas Carr’s argument is that the Internet may diminish the capacity for concentration and contemplation. At the time, that article opened a wide debate and discussion, which also received harsh criticism by some (Hillis, 2008; Kellis, 2008; Sanger, 2008).

Carr (2010) expanded his ideas of the negative effects of the Internet in his best-seller, *The Shallows: What Internet Is Doing to Our Brains*, which was translated to 17 languages and got a lot of media coverage for being a finalist for the 2010 Pulitzer Prize. Although Carr recognized the benefits of the Internet, he focused on the detrimental influence it can have, using examples from investigations about how hypertext contributes to the fragmentation of knowledge. In the preface of a recent second edition, Carr (2020) reiterated and confirmed his predictions about the Internet’s damage to the brain, especially with the expansion of social media and the ubiquity of smartphones. He cited a Pew research survey carried out in 2010 in which 80% of 400 prominent thinkers thought that by 2020 the Internet would enhance human intelligence. “The year 2020 has arrived. We are not smarter. We are not making better choices” (Carr, 2020, p.1). Among all the advantages that the digital era provided us, such as a better and easier life in the following aspects of our lives: entertainment, travel, social, cultural or educational lives, as well as an improvement in our economy, the enhancement of our intelligence does not seem to be a realistic one.

Related to the work started with Young (1996) with brain scanners, Sherry Turkle’s research confirms that when someone receives a like on a Facebook or an Instagram post, it is a very similar experience to taking a drug as far as the brain is concerned (Turkle, 2011). The

unlimited connectivity caused by dopamine stimulation has become a need and has worked to the detriment of face-to-face interaction, and this has limited real conversations. The need for online connectivity has changed current generations in their natural process of growth and development, such as the lack of silent moments, solitude, and the passage to adulthood in teenagers' development (Turkle, 2011).

This drawback has been described by clinical therapists (Dunkley, 2015; Greenfiel, 2019; Heitner, 2016), who have experienced that this disruption in the natural development and the continuous need of being distracted, among other facts, have contributed to the outbreak of mental health problems in young people. Another negative consequence that Turkle refers to is the increase in narcissistic behavior. What should be considered pathological, the constant need to be connected is now the norm. Turkle‘s work is considered a reference framework for studies made after 2011 on this topic.

In his defining book *Rewire: Digital Cosmopolitans in the Age of Connection* (2013), ex-MIT Center for Civic Media director Ethan Zuckerman (2013) approaches the new era of connectivity with optimism for the new possibilities we have been given “With a fraction of the brainpower that’s gone into building the Internet as we know it, we can build a network that help us discover, understand and embrace a wider world” (p. 5). With many examples in recent history, he praises the future of connection across lines of language, culture, and nation that is made possible by the rise of the Internet. Nevertheless, he acknowledges there is a fallacy in this connectivity, and warns us that this positive and creative connection is not guaranteed simply by accessing technologies, “the Internet will not magically turn in into digital cosmopolitans” (p. 37). For Zuckerman, we need to look at the quality of our connectivity, not the quantity. As much of the use of the Internet comes from much closer to home, Zuckerman laments having

built information tools that embody biases towards events that affect "those near and dear to us" (p. 26). That is why he claims the need to "rewire" to really use the Internet to build a global society where we are healthy and connected in a healthy way. Even though Zuckerman gives us a great perspective of why we need to take extra steps to be real digital cosmopolitans for a better society, he does not mention that education is the vital element to accomplishing that. My experience is that the danger of omitting "quality versus quantity" is not a priority in the educational community.

Other authors followed Zuckerman in the idea of the fallacy of human connectivity or the fallacy of content neutrality in search engines (Halavavis, 2018; Seife, 2015).

Cyberpsychology: From New Field of Study to Parents' and Teachers' Awareness

The global interest in the changes in human behavior changes in the digital era materialized in a new field of study within psychology, named cyberpsychology. According to psychologist John Suler, the term started to be used from the mid-nineties among the first researchers of online behavior. *CyberPsychology & Behavior* was the first journal to use the term in 1998 (Suler, 2016). Even though the term was born in the U.S., cyberpsychology studies are more established in other parts of the world, especially Asia and Europe, with formal programs in Universities. Scott Debb regrets that in the U.S. it has been mainly practiced on an individual basis, rather than as part of a formal program (Debb, in Widman, 2018). After years of pushing for the program, Scott Debb's Department of Psychology in Norfolk State University offered in the fall 2020 the first graduate program in cyberpsychology in the country.

This new subfield in psychology focuses on psychological aspects of environments created by computers and computer networks. That includes topics such as Internet addiction, behavior in social media, cyberbullying, cyber security, online relationships, online identities,

personality types in cyberspace, effects of virtual reality, or transference to computers (Suler, 2016). According to David Smahel, founder in 2007 of "Cyberpsychology" the first magazine in Europe, those studies are crucial, not only to understand how people behave with computers, but to improve information and communication security. For that, they have to demonstrate to informatics the advantage of social science methodology, something that has been a challenge because of the different languages that informatics and psychologists have (Smahel in Widman, 2018).

There is no doubt that this relatively new field is growing and that is going to provide a promising new market for future jobs. In any case, these publications in scientific journals made their way to the general public by clinical therapists who saw the problems firsthand and their work has been divulged by some mainstream media outlets.

Contributions in Cyberpsychology to Youth Health. Some cyberpsychologists studies have focused on the consequence of Internet overuse and mental health in adolescents. One concern is the drastic increase in suicides among adolescents and young adults. The alarms started in Asian countries, with studies showing grim scenes (Lin et al., 2010; Kim et al., 2006; Ryu et al., 2004). In the U.S., researcher Jean Twenge, who has closely described the i-Gen behavior, claims that since 2010, iGen adolescents have spent more time on new media screen activities and less time on non-screen activities, which may account for the increases in depression and suicide (Twenge et al., 2017, Wang et al., 2019).

In addition, a recent report claims that in the year 2018, high users of screens, which is considered more than seven hours a day, were more than twice as likely to ever have been diagnosed with depression, ever diagnosed with anxiety, treated by a mental health professional or have taken medication for a psychological or behavioral issue (Twenge & Campbell, 2018).

As for the relation with the age, this report shows interesting information for the educative community, “Eighth graders who spend ten or more hours a week on social networking sites were 56% more likely to be unhappy, compared to 47% for 10th graders and 20% for 12 graders” (Twenge, 2017, p. 79). More studies about the downside of social media includes shortened attention spans, selective self-presentation and narcissism, the declining quality of interpersonal relationships, problem with privacy and security, cyberstalking, cyberbullying, misinformation and online deception, and negative peer effects sleeping problems, obesity, or behavioral issues such as fear of missing out. (Donnelly & Kuss, 2016; Lup, Trub, & Rosenthal, 2015, Giumetty & Kowalski, 2016; Sami et al., 2018, Sheldon at al. 2019). In addition, young people are receiving the phones earlier every year. A research by Influence Central determined in 2016 that the average age to receive the first phones is 10 years old, two years younger than a study made in 2012. According to Stacy DeBroff, chief executive of Influence Central “I think that age is going to trend even younger, because parents are getting tired of handing their smartphones to their kids” (in Chen, 2016, para. 4).

Clinical Therapists’ Efforts for Community Awareness

As more parents started to frequent youth clinical therapists with concerns about the change in their kids’ activities, such as from playing outside, reading and family game nights, or car rides with conversations (Dunkley, 2015), therapists started to write books for the general public based on their clinical experience and the research published by cyberpsychologists. They shared the common goal of raising awareness within communities. The aim was to inform and coach parents about their children’s positive Internet use, as well as the dangers of excessive use (Alter, 2017; Cash, 2008; Duckeley, 2016 ; Freed, 2015; Hart & Hart, 2013; Heitner, 2016; Melillo, 2009; Steiner-Adair, 2013; Shaldan et al., 2019; Twenge, 2017; Yalda Uhls, 2015).

Some youth clinical therapists have also become writers and active school consultants, offering guidance and making parents and teachers aware of these new mental health problems. Steiner-Adair (2013) noted a disturbing new dynamic in the family due to the arrival of screens in human's lives. Children feel neglected, and parents feel left out of their kids' lives, while both are distracted by their phones and computers. Steiner - Adair pointed out how schools are contributing to that problem. At the time when kids need to learn how to read humans, they are learning how to switch screens on with the infusion of computers, cell phones, and online activities at ever younger ages (Steiner-Adair, 2013). Another negative consequence of the overuse of smartphones is the loss of spirituality. Drs. Archibald Hart and Sylvia Hart compared the phone with a new idol-worship, blaming that the distractions of the digital world is a form of an idol that we worship instead of God, (Hart & Hart, 2013). There is a tendency of substituting the object of cults, being the "selfie" fashion a type of cult (Turner, 2016). This idea was corroborated by psychologist Jean Twenge (2017), who affirmed that social media has overtaken the interest in attending churches and in believing in God in the U.S., as the immediate feedback that reassures our individualism has surpassed the need for reaching out towards spirituality "and something bigger than yourselves" (p. 138).

In effect, beyond Christian practices, the related activities with spirituality such as moments of solitude, meditation, silent moments, praying as an spiritual communication, or introspection are somehow incompatible with the ubiquitous options for endless entertainment, the unintended time spent searching the web, or the created need to check work emails. The day just does not have enough hours.

Clinical psychologist Victoria Dunckley (2015) noted that many overworked parents feel

guilty about giving an iPad to the kids, so they can have a peaceful time during the day, while others feel guilty taking away electronic devices from their kids in case those kids might not fit into the new society - they just do not want to have an enemy in the house. Others just give up negative thoughts and choose to complain with other parents but accept with resignation that their kids are connected all day and that, somehow, they have lost them (Dunckely, 2015).

Raising children is a challenge in the digital era. A recent survey concludes that two-thirds of parents in the U.S. think that parenting is harder today than it was 20 years ago, citing technologies – like social media or smartphones – as a reason (Auxier at al. 2020).

This general sentiment that parents and teachers have been sharing for the last ten years has not been echoed by policy makers or health organizations in the U.S. It does not seem to be listened to as a priority in the near future.

Increased Popular Awareness of Problematic Internet Use. The decision taken in 2013 to identify this behavior as a disorder or problematic use by the health community was decisive to having the media pay more attention to articles published in specialized academic journals. For example, the PBS website posted a series of pages with articles dedicated to the consequences of electronic screen overuse, websites of TV channels like CBS (Manning- Schaffer, 2018) or CNN (Howard, 2019) have been broadcasting results of scientific research about the downside of screen time about once a year.

Social media and Internet websites have also been a natural place to look for information. Commonsense Media is the leading non-profit organization dedicated to kids and screens. Their team has made a remarkable effort to research, divulge, support and educate parents in this issue. This popular website is where most parents go to get, as the site claims, trustworthy advice about

age-appropriate TV shows and video games, as well as to participate in a forum of parents with the same concerns (Commonsensemedia.org).

In 2020, a collaboration of more than 40 doctors, psychologists and psychiatrists of 18 countries have been addressing their concerns about health and screen issues during the global pandemic COVID-19. Throughout 2020, the Internet has been an ally to alleviate the consequences of the lockdown. The document aimed to guide a global community is a very good effort of collaboration between Medical and Higher Education institutions. The authors acknowledge the benefits, however their article is warning about potential risks, such as increase in gambling, shopping, pornography and video games, as well as providing guidance on how to avoid these pitfalls and be alert to the entertainment companies that are taking advantage of this critical situation (Potenza et al. 2020). This initiative is an important effort that corroborates an increased interest in problems related to Internet use around the world. Unfortunately, efforts of this kind do not sufficiently permeate enough in the mainstream media – less in social media - and so in the public opinion. The reality is that there is a lack of regulations to stop companies from promoting addictive products, and the need to be constantly checking social media for information and updates in current events seems unstoppable. It may need the organization of victims of addiction and this entails a long and energy consuming process of making the companies accountable. This occurred in the case of the tobacco industry, and it did bring about some positive changes.

That the Internet and the smartphones are addictive is widely and globally accepted, basically because any smartphone user has been likely to experience it. The feeling of the difficulty to stop watching Netflix shows, play video games, check Instagram, shopping online

(Amazon.com), YouTube videos or Facebook is not a coincidence, but intentionally fabricated to hook us (Adler, 2017).

Teens' Perceptions of Internet Use

When results of studies by cyber psychologists such as Jean Twenge (2020) throw statistics of risks of mental health caused by Internet overuse, the next question is, what constitutes overuse on phones? In 2018 it was social media. A survey sent to 1,000 teens around the country showed that 38 percent of teens use social media several times an hour, including 16 percent who say they use it "almost constantly" (2018). According to the President of Child Mind Institute, Harold S. Koplewicz (2018) there has been a significant increase in social media use in the last years, and it can be "good or bad" for mental health, depending on the number of hours, and on the child. The research shows that eighth-graders who spend 10 or more hours a week on social media are 56 percent more likely to report being unhappy than those who spend less time. There is also a correlation between higher emotional investments in social media with higher levels of anxiety (Koplewicz, 2018).

In addition, a significantly higher number of teens with a low on the social-emotional wellbeing scale (characterized by loneliness, depression, and difficult parental relations) responded that social media is "extremely" to "very important" in their lives. Teens with good social and emotional well-being reported that social media is not very important. In other words, vulnerable kids feel social media is positive for them. The same survey resulted in 72 percent of the participants believing that tech companies manipulate users into spending more time on their smartphones. 55 percent think the phones distract them from doing homework, or from paying attention to the people they are with. A large proportion of all teens (44 percent) say they get frustrated with their friends for being on their phones so much when they're hanging out

together. More than two-thirds (68 percent), regardless of whether they use social media themselves, or see themselves as part of the group, agree with the statement “Social media has a negative impact on many people my age,” including 20 percent who “strongly” agree. Nearly a third who own smartphones (29 percent) say they’ve been woken up by their phones during the night by a call, text, or notification. The last data is very interesting. These young people, even though they may not identify themselves as heavy users, agree that digital obsession is a problem for their parents. 33 percent of them wish their parents would spend less time on their devices (Koplewicz, 2018).

Internet use and trends rapidly change as the accessibility and platforms change their options and offers. A comparative survey from 2015 to 2019 shows that the number of teens that watches YouTube videos has doubled. Another report confirms that the biggest change in young people’s media habits over the past four years is the rapidly increasing amount of time they spend watching YouTube videos. The percent went from 24% to 56% among 8- to 12-year olds, and from 34% to 69% among 13 to 18 year olds, which means more than double the time (Rideaut & Robb, 2019).

Four years ago, watching online videos was fifth in enjoyment among tweens, after TV, music, video games, and mobile games. That has changed: now it is the number one favorite entertainment, together with music. Children prefer YouTube videos to video games, TV, and even social media (58% enjoy watching online videos “a lot,” compared to 43% for playing video games, 41% for using social media, and 33% for watching TV) (Rideaut & Robb, 2019). Youtubers are becoming celebrities; their videos are normally short, with a lot of visual and sound components. The most popular among teens are funny videos or the so called react videos (Palladino 2016 where people are experiencing all kinds of extreme situations on camera. The

YouTube platform has been very successful in training, encouraging and supporting YouTubers, as well as developing a sophisticated algorithmic system to have users as much as possible on the screen, and get as many revenues from advertisements. As a consequence, this new system of making money is a new reorganization of the economy in which the platform owners are developing as much power as the factory owners in the early industrial revolution (Kenne and Zysman, 2016).

Reaction to Smartphones at Schools. Many public schools fulfilled the lack of digital devices for instructional purposes allowing personal ones. As I mentioned above, apart from i-pads and laptops, the decision that created a controversy was allowing smartphones as instructional devices with a comprehensive policy that acknowledged the risks. This decision was rapidly echoed by tech gurus with a tone of skepticism, a clear warning and recommendations (Chadband, 2013; Osborne, 2012). Osborne thinks that among the negative consequences are increases of the digital divide, lack of attention, theft, or using technology to solve problems, instead of using critical thinking (Osborne, 2012).

A year after the pilot project, the Consortium for School Networking (CoSN), published a very detailed report of the issues. Those risks include student safety such as targeted theft, inappropriate use such as cyberbullying, sexting, cheating, and data breaches -hacking – as well as legal and regulatory compliance, which is, requirement of the Children Internet Protection Act (CIPA) (CoSN news release report, 2012).

It is a very reasonable response to advise schools that they need to plan well and prevent anticipated problems. Nevertheless, my experience is that this was not understood or practiced by many school administrators and teachers, until major problems emerged, such as those which happened in the target school of my research.

The small number of studies of the effect of smartphones in middle and secondary schools contrasts with the increasing number of studies in college and university levels, where smartphone use was never restricted. Those studies have corroborated the distracting effect and the other ways in which mobile devices have an impact in the classrooms (Campbell, 2006; DeVise, 2010; Wei et al., 2012). Other studies link low grades to the overuse of smartphones on U.S. campuses (Chen & Peng, 2008; Jacobsen & Forte, 2011; Lepp et al., 2015). The aspect of distraction has been increasing year by year. Professor Bernard McCoy (2013) did a study with 777 students from six universities. The findings were that 62.5% of the students said that mobile devices caused some form of classroom distraction, and 30 % said that they checked the phone over 10 times during school time. Two years later, he did further research on the same topic and found that the number of students who checked their phone had risen to 33 %; an increase of over 10 times (Reed, 2015). Also, in 2013, 8 % of students said that they did not use the phone for non-instructional purposes compared to 3% in 2015. The study also revealed that graduate students are much less likely to use digital devices for non-class purposes than undergraduates (3.38 vs. 7.81 times a day) (McCoy, 2013).

Smartphones have never been banned in higher education. Professors assume that the maturity of the students will decide the “right” use of their digital devices in the classrooms. On the contrary, allowing smartphones in the schools is relatively recent. Future investigations of this phenomenon may be highly influenced by the health crisis that started in March 2020 in U.S. schools, when students started having classes at home. Due to the exceptional situation of a high COVID- 19 incidence in this country, schools were forced to rely on online classes starting the next academic year. This situation is likely to have changed many aspects of the

perception of smartphones and technological education, even if schools do return to classrooms.

Smartphone Policies Outside the U.S. In other countries the debate is led by governmental institutions. For example, it made headlines in U.S. media that the president of France decreed recently by executive law that telephones would be banned from schools (Ledson, 2019). In Spain, Finland, Argentina and Brazil, the Secretaries of Education set the guidance to regulate the non-telephone use across the whole countries (Cifuentes, 2019). In those countries with a tradition of public control and government regulations over private interest, government funded campaigns have helped with public awareness and policy making.

In the U.S., there is only one institution that can counteract the powerful commercial interests that aggressive marketing that make our children addictive are regulations from the government. Unfortunately, that seems unlikely in the current political climate. In America, grassroots groups that are willing to take on this issue are just beginning to emerge.

Conclusion

The consensus of experts related to the social changes in the digital era are demanding that people be made aware, so that proper parental guidance will lead to modelling for their children a healthy use of their smartphones. Some of the consequences of a non-healthy use of smartphone use is more than 4 hours of screen-time a day, that can result in sleep deprivation, cyberbullying, potential mental, personality or behavioral problems, ADHD, lack of concentration, short attention span or even suicidal behavior. Schools are still in the middle of the debate about including all kinds of digital devices, and managing cyberbullying, cheating, distraction, and a good school climate. Schools are earnestly looking for the best solution. My research is covering the gap of research that informs the community to the

efficacy of a smartphone school policy that would avoid distraction and improve classroom management. At the same time, through the perception of the participants about their smartphone use, my research would help parents and teachers to know who their kids and their students are, narrowing the wide generation gap.

CHAPTER 3

THEORETICAL FRAMEWORK

The ecological systems theory, introduced in the 1970s by Russian psychologist Urie Bronfenbrenner, incorporated the influence of the environment in child development (Bronfenbrenner, 1979). Bronfenbrenner's theory constituted a new framework for later research studies and theories in human development. In the 1990s, Bronfenbrenner introduced the role of genetics in child development, modifying and reformulating his systemic theory and named it bio-ecological (Bronfenbrenner, 1995, 2000). With the digital era as a new context, contemporary psychologists Johnson and Puplampu (2008) and Walker (2015) incorporated the influence of technology into the Bronfenbrenner bio-ecological paradigm.

In this chapter, I will present an overview of the main contributions of the bioecological system theory and subsequent modifications to the present, as well as why this system is best suited as my theoretical framework.

Ecological System: Bronfenbrenner's First Work

Urie Bronfenbrenner's long and prolific career - 50 years professor at Cornell University - had a renowned and worldwide influence on human development researchers around the world. (Ganuvai & Cole, 2001). His first main theoretical work was *The Ecology of Human Development*, published in 1979. His research was a reaction to previous studies aimed at theorizing human development conducted mainly in laboratory settings, focused on the individual child, stripped of context, "the science of strange behavior of children in strange situations with strange adults for the briefest possible periods of time" (Bronfenbrenner, 1977, p. 513). Instead, said Bronfenbrenner, studies should be conducted in

their ecological context, that is, in the actual environments in which human beings lived their lives (Bronfenbrenner, 1977). His contribution was crucial to re-contextualize the important role that the environment plays in human development.

In his original ecological theory, Bronfenbrenner conceived the ecological environment as a set or system of nested structures, "each inside the other like a set of Russian dolls" (Ganuvai & Cole, 1996, p. 5). Those structures that surround and influence the child's development also have mutual influences, which Bronfenbrenner calls "accommodations." Accommodations occur between an active, growing human being and the changing properties of the immediate face to face settings, to broader social contexts such as classes and cultures (Bronfenbrenner, 1979). Child development is a process "affected by relations between these settings, - the face to face - and by the larger contexts within which the settings are embedded" (p. 21).

He described four socially organized subsystems that help support and guide the process of human growth and development. As shown in figure 1, the four systems that can be visualized as concentric circles are: the microsystem, the mesosystem, the exosystem, and the macrosystem.

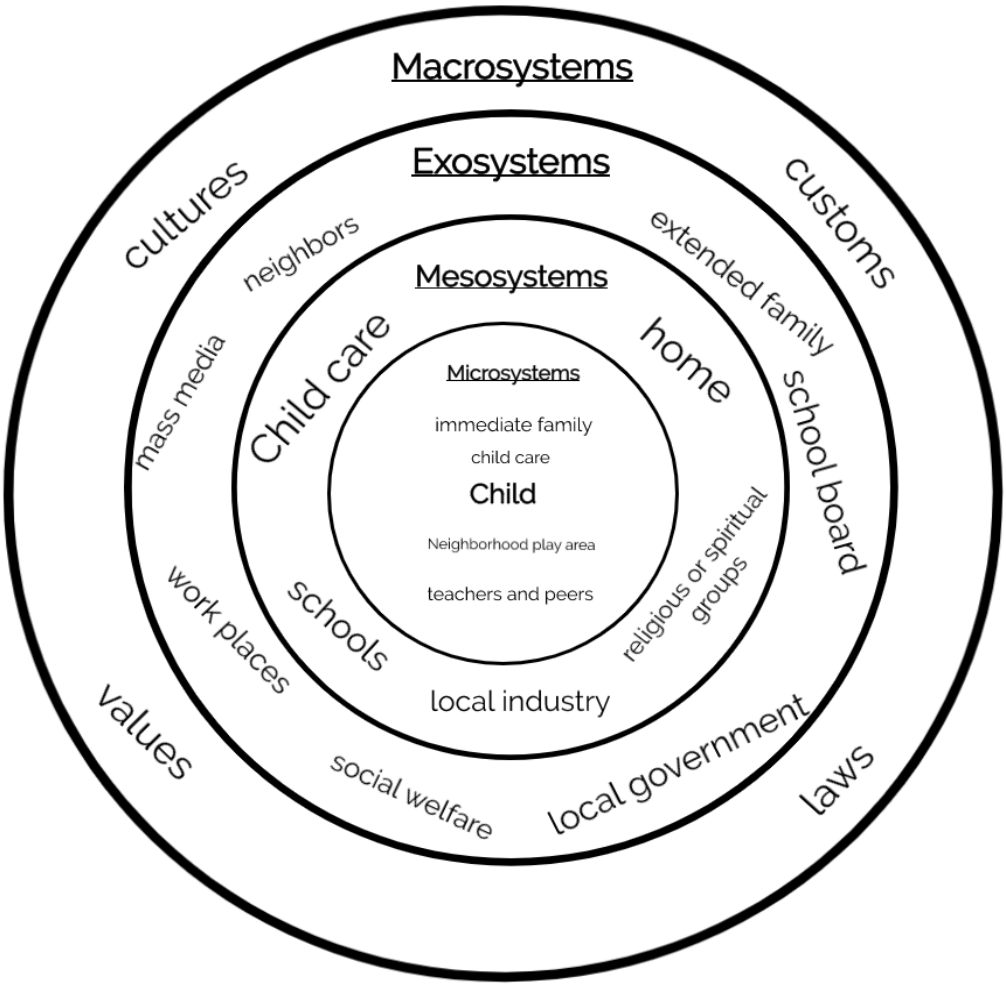

Figure 1. Bronfenbrenner Ecological System

Note. Image by Miguel Delao-Zurita. Shared with permission from the artist.

The microsystem is the first circle and has the closest setting to the child. It is related to the social characteristics where a child is situated, such as the home, childcare, the playground, or a school. In this setting, the developing child can interact face-to-face way with others (Bronfenbrenner, 1979) In this system, interpersonal relationships have a reciprocal influence, that is, the behaviors and reactions of family, classmates, friends, and teachers are also influenced by the behaviors and responses of the child (Walker, 2015).

The second system, the mesosystem, deals with the relationship among two or more microsystems in which the developing child actively participates. In other words, “the mesosystem is a system of microsystems” (Bronfenbrenner, 1979b, p. 25). In this system, which is the second circle, the interpersonal roles and relations occurring within a single microsystem occur across settings of one or more microsystems. For example, the relationship between family experiences and school experiences fall inside this system, and they affect the development of the child. For example, “children whose parents have rejected them may have difficulty developing positive relationships with teachers” (Christensen, 2016, p. 23). This example is particularly important for teachers to be aware of, to develop compensatory mechanisms to help the child. A child is not born predisposed to feel love, care, or empathy; the child develops these emotions with the help of what surrounds the child. Those children, who have not learned what is to be loved, also may have difficulties in establishing healthy future relationships. Another example of the interrelation of the two systems, equally meaningful for teachers, is that “parental involvement in children’s schooling can have a positive influence on children’s academic competence through children’s valuing of academics" (Ashiabi & O’Neall, 2015, para. 5). Teachers experience corroborate that without the parent’s involvement, the pressure on teachers to engage students in learning is a much harder task.

The third setting, the exosystem, has an indirect effect on the individual. He or she does not participate in it actively, but, nonetheless, the child experiences the influences of the exosystem and at times he or she can also influence it, either formally or informally. Political decisions, such as the age when children start formal education or the school calendar are a part of this system (Bronfenbrenner, 1979). As an example, in a family during a war, or a recession,

even if the event did not affect them directly, does in fact affect the development of the individuals in the family will have changed as a result of the consequences of the war or the crisis.

Finally, the macrosystem, the outermost circle, includes the institutional systems of a culture or subculture, such as the economic, social, education, legal, and political systems. Bronfenbrenner (1979) states that the influence of the macrosystem on the other ecological settings is reflected in how the lower systems (e.g., family and school) function. Aisha Walker added that he places mass media in this system, such as TV, music, radio, and commercials, all of which are outside the reach of the influence of the child (Walker, 2015). The most important element of the macrosystem is its overarching belief system or ideology. Macrosystem studies are those that compare systems with different basic patterns of social organization or those that deal with changes that fundamentally alter the characteristics of a given society (Bronfenbrenner, 1979).

Bronfenbrenner's Expanded Work: Chronosystem and Bio-Ecological System

An expansion of system theory is what Bronfenbrenner called the chronosystem (Bronfenbrenner, 1995). By considering changes that occur in an individual's lifetime, the chronosystem considers specific events in the environment where humans develop. Those changes or experiences can be caused from the external environment. Examples are a sibling's birth, going to school, parents separating, or within the developing individual's own organism such as entering puberty or becoming ill (Rose & Tudge, 2013). Such changes, expected or not, alter the relation between the child and the environment, thereby instigating a developmental change. Bronfenbrenner (1994) stressed that research using this model should accompany the

developing individuals and continue after the events that are assumed to influence development have happened.

Twenty years after his systemic model, Bronfenbrenner (1999) incorporated the idea that apart from the environment, intrinsic character and personality are also very important in the development of a child; individuals can modify, select, reconstruct, and even create their environments. One does not exist without the other. In this modified approach that he called a bioecological model, child development is a continuous process of personal experiences in a multi-level interaction between the different systems of the environment and their biological endowment. He introduced the term proximal processes, which are increasingly complex interactions that occur between people and their environments. That perspective includes the objective properties of the setting as well as the subjective properties; which is different in every person as experienced by the person. The distinctive characteristics acknowledged here is an important component in the systemic theory.

This is in stark contrast with other leading theories, such as behaviorism, that do not include the individual's biological component (Bronfenbrenner, 1999; Skinner, 1971; Paulov, 1897; Watson, 1930).

Recent Expansions of Bronfenbrenner's Theories

Although media and communication technology have always been part of the microsystem, it has never had the influence that the existing digital era theory has on child development. The role of social media, for example, is now a major dimension in the life of teenagers. This reality led Canadian psychologists Geneviene Johnson and Korbla Puplampu (2008) to propose the techno-subsystem as a new dimension in the microsystem to further understand the impact of digital technologies in cognitive growth in children. As Figure 2 shows,

it includes child interaction with both living, such as peers, extended family, and nonliving, such as computers, or phones elements of communication, information, and recreation technologies in direct environments.

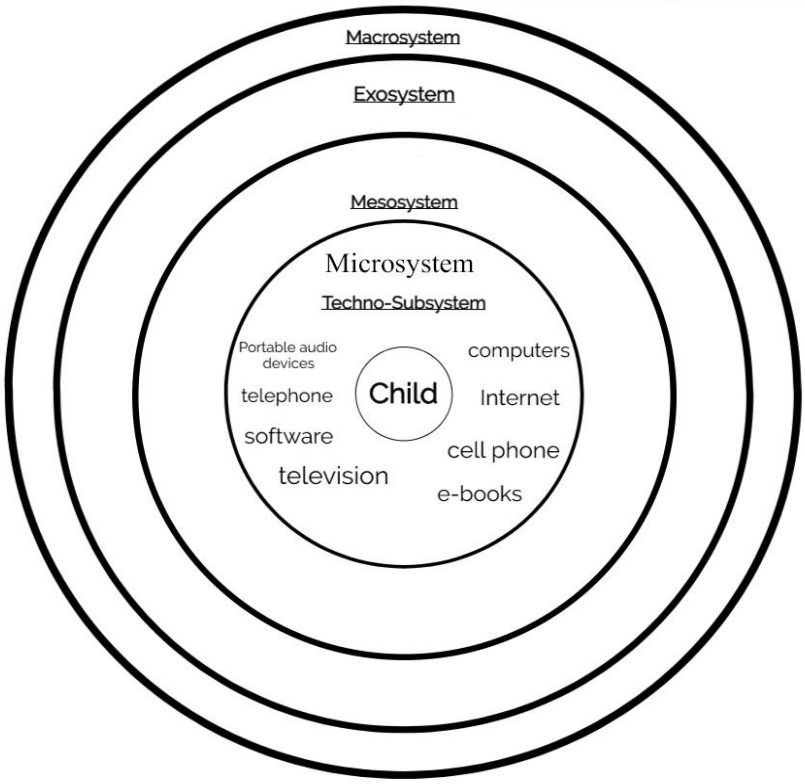

Figure 2. The ecological techno-subsystem (Johnson & Puplampu, 2008).

Note. Image by Miguel Delao-Zurita. Shared with permission from the artist.

The impact of that new subsystem can have both positive and negative developmental consequences of Internet use during childhood and depends on the other components of the microsystem, such as parental control, to limit the negative impact. Especially in childhood, Internet use that is limited to playing educational games with visual stimulators that can develop cognitive development in a positive way (Johnson & Puplampu, 2008). That proposal was later validated with the empirical research by Genevieve Johnson (2010). She surveyed parents of 128 children in first through sixth grade regarding their children's use of

the Internet at home and family socioeconomic characteristics. The results were that indices of home internet accounted for more variance in children's cognitive development than their socioeconomic status. "The ecological techno-subsystem furthers our understanding of environmental influences on child development by emphasizing the impact of digital technologies on cognitive growth during childhood" (Johnson, 2010, p.1).

McHall, Otterer, and Kim (2009) also propose the ecological perspective as a valid framework to study youth's media involvement and its implications for youth development and well-being. This highlights the possibility of a complex interaction among the systems and how media affects youth development. For example, in the mesosystem they present the example of a child whose parents are the only parents in the child's peer group to set strict norms for TV time, Internet and video games. This may cause the child to be teased by his or her peer group. In contrast, the first child in the group to acquire the latest and more expensive technological device will have higher status. This can be challenging for parents who see their children being subjected to socialization processes that are beyond parental control (McHall et al., 2009). Also in the exosystem, dominated by parent's social life and work, parents may choose to have their children entertain themselves with television, or expose the kids to other activities (sport practices, art classes, travel). In some cases, the choice of media activities is lack of other opportunities, presented in the mesosystem, "the trade-offs youth make in choosing media over other kinds of activities […] suggests that we cannot assume youth's time will be spent more productively, and thus, researchers should directly assess what alternative activities are available to youth at different times and in different places" (McHall et al., 2009, para. 16). Those experiences are normally provided by the parents and the community.

Creating Identity. Digisystem, a New Level of Influence

An extra dimension to the ecological theory that incorporates the complexity of the use of media by youth is the digisystem, developed by psychologist Aisha Walker (2015). She claims that post-millennials not only consume media, but also produce it, for example Facebook, YouTube, and Instagram. For Walker, the ecological system is modified by the accessibility and the possibilities of new technology in the sense that it becomes a strong agent of creating identity. “The media are not only part of the micro-system, but an extension of the individual” (Walker, 2015, para. 3).

Walker (2015) also criticizes the techno-subsystem added to the microsystem in the onion-ring system of Bronfenbrenner. Walker agrees that digital media is in the proximal circle. This occurs when children start using electronic devices in that system. Nevertheless, the children also reach outside the microsystem through the content that they access by using their devices. They “outsource” in the digital world through the performance of identity on social media platforms such as Facebook or Instagram, which for Walker is the macrosystem. Therefore, Walker adds to the concentric circles a new system within the ecological model that she calls “digisystem.” As shown in Figure 3, the digisystem is not concentric. It is visually represented by an “pizza” shape that starts in the microsystem and crosses all the way into the exosystem, incorporating and influencing every single layer of influence.

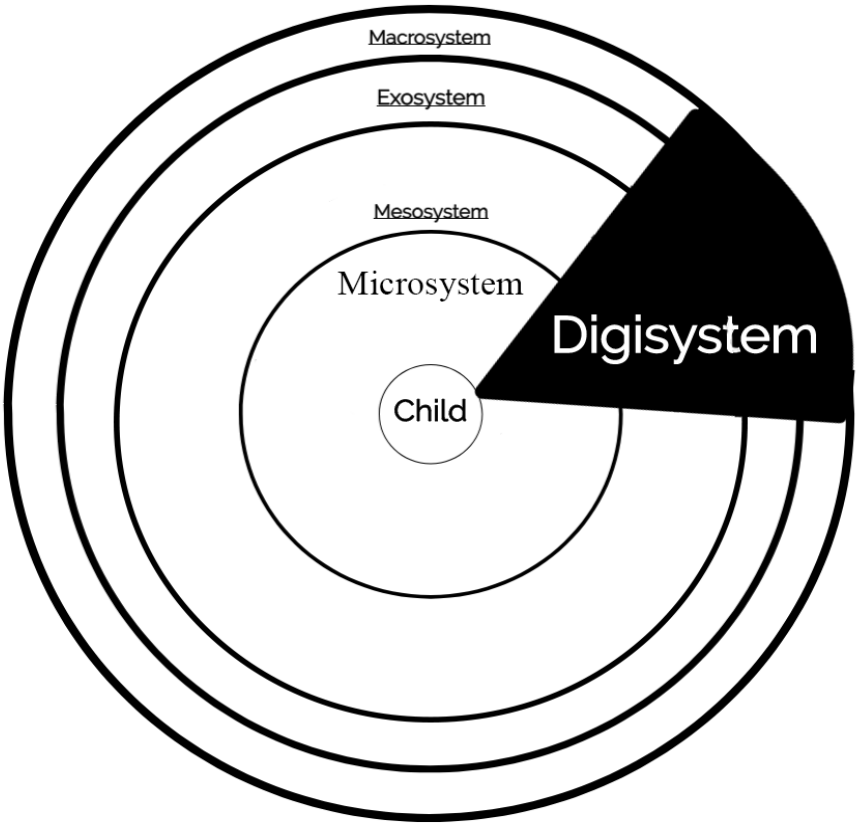

Figure 3. The Digisystem (Aisha Walker, 2015).

Note. Image by Miguel Delao-Zurita. Shared with permission from the artist.

In the digisystem, the child is in control of the content of their influence. The traditional parent's role of choosing and mediating the values that guide teenager experiences is now very limited due to the number of hours youth spend on the Internet. Even parental controls cannot avoid the world of uncontrolled experiences that influence a child's development. Walker (2015) acknowledges that this can be an advantage in terms of expanding their world, but she reminds us of the paradox of that idea, due to that the algorithms that filter incoming material reinforce their existing beliefs. As a consequence, the experience of expanding the world can be a fallacy.

Walker concludes that the ecological system correctly places the child in the center. However, in the new era "children are not passive consumers of digital media but are active

creators of their own selves and the world with which they interact, and that world crosses all levels of the ecological system" (Walker, 2015, para. 5).

They also acknowledge that the bio-ecological system also implies that individuals with different characteristics and from different settings respond differently to similar experiences, and individuals with different characteristics present different reactions from others in the same contexts. All these cases have varying developmental implications.

Applying Bronfenbrenner Systemic Theory to Students' Smartphone Use

I believe bioecological system is appropriate for my study as a theoretical framework for its emphasis both on the relation with the context (parents, school, and smartphones) and on the influence of the different systems in the individual (proximal processes) where the contexts are situated. In addition, studies developed in Canada confirm bioecological system as a framework to understand and study child development in relation to the presence of technologies in a child's experiences. Kei K. O'Neal (2015) used this framework to research Internet use in a school in Canada. For O'Neal, the bioecological approach "is a vital component in addressing some of the burning issues of evidence-based policymaking relating to Internet governance, regulation and youth protection online" (O'Neal, 2015, para. 4). He laments that even though the environment has had a big influence in disciplines such as sociology; it has received little attention from media scholars.

CHAPTER 4

RESEARCH AND METHOD

In this chapter I will restate the purpose of the study that will guide my research. Following this, I will present the research design, site selection, participants, and data collection. Next, I will describe the site and the rhetorical structure of the study. Finally, I will address the credibility of the research.

Purpose

This study addresses ten high school students' perception related to their smartphone use at home and in the school setting, including changes after the implementation of a new school smartphone policy.

The goal of the research is to gather students' perspectives about their smartphones use in order to make a contribution in informing the academic community about the new generation's smartphone- influenced way of learning and thinking. The ultimate goal is to contribute to an informed debate within the educational community across the district in an effort to understand and address issues of concern: consequences of allowing smartphones in the school environment, problematic internet use and its future impact for this generation of students, and the role and responsibility of the public school in this matter.

A review of the literature informs us that both using the internet at an early age and an ever - increasing number of hours of usage may have a negative effect on school children, including mental health problems. Educational researchers agree that using personal devices in an academic environment increases distraction. Other research questions the efficacy of computer - based curriculum to improve academic results. As a consequence, more studies are

needed, studies that shed light in the changes in educational paradigm in the digital era. The evidence of this research will keep the debate informed and up-to-date.

The methodology that best suits this research is a qualitative case study. However, where possible, the researcher will collect limited numerical data in order to highlight the personal views and behavioral patterns.

Research Questions

The study was guided by the following research questions: What are students' perceptions of their use of smartphones in their lives and in their school? What are students' perceptions of the implementation of the new BYOD policy?

Research Design

Case studies engage in an empirical investigation of an event, an entity, an individual or a unit of analysis of a contemporary phenomenon (Yin, 1989). In the case of this particular study, the event is the Bring Your Own Device policy on smartphone's use in a secondary school. That event needs to be understood as part of a larger phenomenon.

In the researcher's area of interest, the contemporary global phenomenon is framed in the context of the digital era. Following Robert Stake "Case study is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances" (Stake, 1995, p. xi). The literary review has informed me that the important circumstance of the complexity of this single case event is the possession of and the need to be in constant connection to digital devices, such as iPads and smartphones, by the secondary school population across the industrialized world.

Sociological case studies focus on society as whole, social institutions such as schools, and social relationships. Thus, the focus of this study is to interpret and elucidate a totally new

type of social relationship – a student's relationship with social media through the use and access of smartphones. These sociological studies analyze the structure, development, interaction, and collective behavior of certain groups. Some psychological case studies focus on individuals, some on organizations, programs, and events which can be investigated by using the theories and concepts that psychological theories have generated (Hancock & Algocine, 2006).

Because the phenomenon under study can be explained through the lens of changes in society and in human behavior, both of which are interconnected (Bronfenbrenner, 1979), I believe that both psychological and sociological approaches to a case study can readily be integrated with this research.

Traditionally, cases are bounded by time and activity (Creswell, 2009). This research is bounded in the years (2017 till present) since the BYOD policy was implemented in the public school district in the south, but we cannot avoid also placing this study in the wider context of the implementation of the BYOD program in June 2012.

Anderson (1993) sees case studies as being concerned with how and why things happen; allowing the investigation of contextual realities and the differences between what was planned and what actually happened. Following this idea, the researcher bore in mind the context of the event, researching how different the ideal plan was, that is, allowing smartphones for instructional purposes, from what really happened in the schools once smartphones were permitted in the school environment.

Additionally, this research will be inferential, because this study could go beyond a specific high school and suggest questions that generate conversation in the secondary educational community at large, in the district, the state, and in the country (Hancock & Algocine, 2006).

The Role of the Researcher

I have had more than twenty years as an educator teaching in private and public schools in Spain, Mexico and the U.S. My educational experience spans from middle school to high school, including partial experience at the elementary and university levels. The years of experience have afforded me the opportunity to develop my profession, first within a non-digital technology environment, then to the rapid incorporation of online resources in my lessons, to finally the integration of my students' own digital mobile technology as learning tools. As technology has moved rapidly, learners have moved into a digital mindset (Duckley, 2016). Understanding students is fundamental for a better connection and, therefore, for creating more meaningful teaching and learning (Witt et al, 2004). My interest in connecting with learners in ways beyond technology possibilities raised my interest in my students' perceptions as mobile device users. Furthermore, the ubiquity of the devices in a high school in a middle-sized southern town brought specific issues of concern to the educational community where I work.

Site Selection and Description

According to Johnny Saldaña (2011), there are three reasons for choosing a case: deliberately (for unique characteristics), strategically (to represent a more typical case), and for convenience (for ease of access). For strategic and convenience reasons I chose OaksLand High School (pseudonym). This institution has the unique characteristic of having the strictest smartphone policy in the district. This happened, as mentioned above, as a result of students entrapping a teacher in a politically sensitive discussion, with the help of the student's father texting questions to ask, while recording a video of the whole event on a smartphone.

Being a teacher at OaksLand High School granted me easy access to the students. The willingness and support of the school Principal to conduct such research was also a reason to choose this particular school site.

OaksLand High School is an art school with a very competitive process of admission, both in terms of academics and of art. For this reason, OaksLand does not represent a typical case of a public school in a middle sized town in the South in terms of demographics, academic choices and parents' income. Regarding ethnicity, 64 % of students are white, 16 % are African-American class, 8% Asian and 5 % Hispanics (public School Review website). Students who apply to OaksLand High School need to have a B average in middle school, high scores in their State Milestone Assessment System (GMAS) and to pass a rather competitive audition in one of the following arts majors: chorus, band, orchestra, communication, dance, theater or visual arts. Students at OaksLand tend to be more academically motivated than is the norm in the general public school population. Many students can count on supportive families able to provide private lessons that help in the audition process.

Respecting the socioeconomic status: In OaksLand only 3% of students are eligible for free lunches, compared to 40 to 65 % in other public schools in the same district. Considering test scores and graduation rates, the school's overall ranking is in the top 5% in Georgia (Public School Review, 2017).

Those factors that differ from those of other schools in the area were taken into consideration when reviewing the data and in the conclusions, especially parents' education and socioeconomic status.

Participant Recruiting and Sampling

The participants were chosen according to the relevance to the topic (Creswell, 2009) and whose knowledge and opinions may provide meaningful insight to my research question (Hancock & Algocine, 2006).

The sampling was guided by school, age and level. The students invited to volunteer were students from OaksLand High School, all of whom fulfilled the criteria of having experienced at least one year with the Bring Your Own Device program, and at least one year with the new and stricter smartphone policy.

Once I was granted permission from the high school principal to conduct the research, the next step was to submit the corresponding application to the Georgia Southern University's Internal Review Board (IRB). When it was approved, I contacted the parents of the sample electronically, sending a written form of parental consent and a written request of the students' participation. I also gave the students a hard copy of the parents' consent. Upon receiving the parents' and the students' responses, I selected only the students who volunteered and provided the signed parental consent. I then emailed the parents thanking them for their consent and giving the selected students more detailed information: the purpose of the study, the conditions of their participation, the recording method and data storage, the length of the interviews, the minimum risks, their right to withdraw at any moment during the interview and the confidentiality of their identity. As a final step, before the interviews began, all participants signed the consent in front of me, and each kept a copy. Once the students signed the consent after reading and understanding all the details, I set a schedule to meet with the participants.

Before the interview, participants signed the consent in front of me, and kept a copy.

Data Collection

The most significant source of information for this case study was the interviews conducted several times during the spring of 2019, until the moment when analysis saturation was reached. I interviewed and observed ten high school students from my homeroom class. The ten student participants range in age from 16 to 17 years, and they were part of my homeroom class. Therefore, I was not their teacher, avoiding conflict with academic grades. The participants vary in demographics, ethnicity, and socioeconomic class.

Approach to Interviewing

The interviews were mostly open-ended questions to encourage explanatory answers. The researcher had a determined set of prompts and questions, but she was flexible and open to asking follow-up questions to acquire more information about issues of interest. She was interested in -depth experiences about their lives as part of the digital era, with all the possible aspects that accompany that broad perspective. Participants were encouraged to express themselves openly and freely and to define the world from their own perspectives, not only from the perspective of I (Hancock & Algocine, 2006). Each interview was about sixty minutes in length and conducted in a comfortable chair in my room, which was a familiar place to the participants. As their advisor for three years in a row, the students and I have developed a personal and a familiar relationship. To avoid confusion and help them focus, I was careful to remind everyone of the purpose of our meeting. After the interview, I asked them how they felt about it. A personal relationship inspired them to express very honestly that the experience was much more positive than they had imagined. Some of them expressed the need to have these kinds of discussions at school. After the interviews the researcher addressed the participants in informal settings and asked them if they wanted to share something else with me.

The student participants gathered in my room for 20 minutes every day before school starts. Aside from five minutes of daily announcements through the school speaker system, which also include the pledge of allegiance and a moment of quiet reflection, the rest is unstructured time and they are allowed to use their phones. I also took notes on their behavior during homeroom time in relation to their phone use.

Interview Protocol

The prompts were prepared posed in order to better understand the student perception of their smartphone use at home and at school, and the implementation of the new smartphone policy included, but not limited to:

1- How important is your smartphone for you in your everyday life outside school? Why? Explain with examples.

2- How important is your smartphone for you in your everyday life in school? Why? Explain with examples.

3- Explain your experience with your phone at home in relation to your parents' restrictions and your opinion about it.

4- In what way do you think parents, teachers and administrators - adults in general - are different from your generation in relation to the use of smartphones? Can you give examples of what we do not understand or miss about your life in relation to phone use?

5- What is your experience about the way your teachers follow the new smartphone policy?

6- What is your experience about the way your peers follow the new smartphone policy?

7- How have your relationships with your teachers and administrators changed after the new policy?

8- What are the advantages of a strict smartphone policy in high school? What are the disadvantages?

9- How do you feel when you are separated from the phone?

10- How are phones impacting your friends' lives? Can you give examples?

11- Is there anything else about smartphones you want to share that might be helpful for my study?

The research data is developed into a narrative that includes the different perspectives and findings of my research. It is descriptive, including participants' direct responses to questions, and students' experiences, with the research findings being mainly composed from interviews. The details of the data will help create mental images "that bring to life the complexity of the many variables inherent in the phenomenon being studied" (Hancock & Algocine, 2006, pp.).

Interview Setting

The interviews were arranged in my room after school hours so as not to interrupt academic schedules and commitments. I informed the subjects of the purpose of my research before the interview and about the confidentiality of the interview as well as advising them that if some of the information suggests that they are at personal risk, I would be required to report it. I recorded these conversations to facilitate accurate recall and took notes at the time of the interviews. Finally, I transcribed ten hours of conversation and added my observations notes to the transcription in order to capture a full and objective picture. The data is stored in my personal computer and in my Google drive.

Individual interviews of ten of my homeroom students gave me an opportunity to analyze different approaches related to any given family's values regarding smartphone usage. Students

faced questions about how important their phones were for them, their perceptions of smartphone policy and their phone use in general. That provided me with about ten hours of recording of meaningful data about the research questions.

Analysis of the Data

Once all the interviews were completed, I gathered close to 100 pages of written material. In qualitative research, coding is the fundamental process undertaken before starting the analysis. "Coding is the process of analyzing qualitative text data by taking them apart to see what they yield before putting the data back together in a meaningful way" (Creswell, 2015, p. 156). For this particular research, I organized the data according to the prompts of her inquiry. Answers that belonged to the same prompt were placed together in boxes by physically cutting and sorting the pieces of paper. I labeled every box with the common theme. Then, I made several readings of every piece of data of every box to code the data. "A code is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language based or visual data" (Saldaña, 2016, p. 4).

Next, I looked for the patterns. According to Saldaña (2016), "A pattern is a repetitive, regular or consistent occurrence of action/data that appears more than twice" (p. 5). In this analysis, data related to personal experiences had fewer patterns than questions related to the school policy. In some instances, summarizing the information was a challenge due to the relevance of all the information.

Finally, research data is developed into a narrative that includes the different perspectives and findings of my research. It is descriptive, including participants' direct responses to questions and students' experiences, with the research findings being mainly composed from interviews. The details of the data will help create mental images "that bring to life the

complexity of the many variables inherent in the phenomenon being studied" (Hancock & Algocine, 2006, p.15). In some cases where the data related to the participants' experiences is especially meaningful and relevant, the data is also organized in a biographical narrative.

Credibility

Credibility is concerned with truth-value (Korstjens & Moser, 2018). To ensure credibility, one measure taken was to be very careful in the selection of the participants. Junior year in high school is an adequate age in terms of student perspective and maturity. As I mentioned above, their age allows them to compare the effects of the changes in the school policy, as well as maturity to reflect on themselves in relation to younger generations in relation to their smartphone uses. The personal relationship with me as the students' advisor also guaranteed a desirable trust when answering personal questions. That trust and non -judgmental relation-ship, as well as the format of face-to-face interviews in a relaxing and familiar setting are a further guarantee to ensure credibility of the research. It was felt that this would help the participants feel freer to share personal memories without feeling or being judged. In addition, observation during homeroom and open-ended questions provided an opportunity to gather meaningful observations and experiences.

CHAPTER 5

FINDINGS

This chapter starts with an introductory portrait of each of the 10 students' race and ethnicity, school specialty, when they received their smartphones, their smartphone use, and family background. Following this information, I discuss the relevant themes that resulted from analyzing the study data. The study's findings are organized in the order of the research questions. The major sections are students' perceptions of smartphone use in their everyday lives outside of school, smartphone use in school and students' perceptions of the smartphone policy, and the generation gap according to students regarding the use and perception of smartphones. With my presentation of the findings for each theme, I include a narrative featuring a student whose responses have special relevance to that specific theme.

Portraits of the Students

The student names are pseudonyms and some students choose their name. This information derives from the interviews and observations. They have been in my homeroom group for two years before the interview.

Dhara

Dhara is a first-generation Indian immigrant from a middle-class family. Her mother is a nurse and her father is unemployed. They are very active in the Indian community. Dhara is socially engaging, personable, confident, and high-spirited. Before high school, she attended a competitive STEM school in town that only accepts gifted students who have a high grade point average. Dhara's specialty at OaksLand High is film. She had a job at the time of the interview and did not use a cell phone much at work or during the week. She got the phone in middle

school without restrictions, and only uses her phone three hours on weekdays, to five hours a week on weekends.

Riley

Riley is Caucasian, and very social. She is a very good friend of three of the boys in the homeroom, and I have seen her always chatting with them and sharing videos. Riley is usually smiling and displays high spirits. She got her first phone in middle school without restrictions. Her mother is a sales manager for a magazine and her father is a writer who lives in New York. She is very close to her mother. Academically, Riley is an A student. She also participates in ballet and has a part-time job as a gymnastics coach at the YMCA. Her major is dance.

Lucas

Lucas is Caucasian and very well-known in the school for being one of the best players in the school's soccer team as well as one of the best students academically in the junior class. His parents are university professors and very involved in his education. Lucas is in the film department. He got his phone in high school with restrictions. Lucas uses the phone mainly for communication, and he is known among his friends for not checking and answering their text messages in a timely fashion. His specialty is film.

Stephen

Similar to Lucas, Stephen is Caucasian, tall, and known as a very good soccer player. Stephen is the oldest of three brothers. His parents are teachers and they are also involved in his education. One of their rules was no phone at an early age and very restrictive access to the phone even during high school years. During a parent conference with Stephen's parents, they expressed their frustration due to Stephen's poor grades. They think their son is irresponsible and has a childish personality. Stephen also describes himself as immature. He recognizes he does

not have many social media followers, which contributes to his having a low profile online life. His specialty is film.

Beck

Beck is an adopted Korean boy. He always sits by himself, quietly on the far side of the room, reading a book or drawing in his sketchbook. He is the first to arrive and the first to leave the homeroom class. He is a very talented and dedicated artist. His parents are academics, and they are involved in projects related to social justice, environmental issues, and liberal politics. They strongly believe in screen-free parenting and that is why Beck got his first smartphone in his second year of high school. Beck will graduate one year early and plans to travel abroad for college. Beck's major is visual arts.

Carla

Carla got her phone when her parents separated and without restrictions. She seems to have a very distant relationship with her father. She describes her mother as a "confusing" person. Her mother uses the phone much more than her father, and there was no parental agreement about phone use. Carla has two brothers, but she grew up feeling alone, and more attached to her cat than to her brothers. In her middle and high school years, Carla used to spend up to seven hours a day on the phone socializing or watching Netflix shows. Her specialty is theater.

Nancy

Nancy is a first-generation Turkish immigrant student. She is introverted, smart, and very responsible. In her sophomore year, she was sick with mononucleosis, which lasted for almost two semesters. During that time, she continued to study and follow classes from home with success. She had a complicated relationship with her father when she was younger. She also got

her first smartphone very young when her parents divorced. She and her sister live with the mother while the father is in jail and has a court order to not contact the family. Her specialty is orchestra.

Crystal

Crystal is the only child of an African American middle class family. Her mother is a news anchor in a local TV station. Her father went into the military and is currently teaching in a high school. She has two older step-brothers from her father's first marriage, but they do not live with Crystal. Crystal is an introvert; she is a shy and quiet girl. Her teachers describe her as being very insecure and having low self-esteem. When she was three years old, she developed a tumor under one of her eyes and she suffers from anxiety. Crystal got her first flip-phone when she was eight years old to call in case she had an emergency. She got her smartphone in middle school without restrictions. Her specialty is film.

Sara

Sara was born in Michigan and moved to the South when she was five. She is a very smart, mature girl, and a responsible student. Her father is an aerospace engineer. Her mother is a writer of horror novels and works at a TV station. When Sara was in third grade, her parents divorced, and she went to live with her father. Even though she got a phone when her parents divorced, her father was very strict with her phone usage; Sara had a very limited screen time. Sara is an avid reader, and her specialty is orchestra. She plays the clarinet.

Latisha

Latisha is African American. She is very sweet and hardworking. She is a very talented visual art student. During her first two years, she was always drawing while in the homeroom class. Latisha is quiet and lives in her own thoughts, or sometimes talking to Crystal, the other

African American. Similar to many of my other participants, Latisha got her phone when she was 12 when her parents separated. Latisha's mother was not in favor of it, but finally the father, who had moved to Florida, convinced her. She has a very good relationship with both her parents. Latisha's major is visual art.

FINDINGS

Use of Smartphones Outside the School: Perceptions of Themselves and Others

I asked the students about the role that their smartphones play in their everyday lives, outside of the school setting, and how important phones are for them. I also asked them their perception of their friends' and siblings' smartphone uses. The findings are grouped in four topics: how they use their phones, their first memories, parental restrictions, and their perceptions of their friends' and family usage of smartphones.

How the Students Use Their Phones

For most of the students I interviewed, it is about being connected with friends through social media: "I keep up with the people that don't live here a lot, like the people that live like in Virginia or India" (Dhara). Only Beck, one of the three boys interviewed, has a strong opinion about social media activity: "I just don't like the idea of going through something every day and checking, liking or disliking… All these things that might not necessarily be related to me like oh, hey! Sarah went on a beach trip on Sunday. OK, that's cool… I... don't... care!"

Students had multiple uses for their telephones. The most popular subject of their conversations had to do with entertainment: music, video games, and YouTube videos. They use entertainment to decompress, "Like the different social medias or memes" (Nancy). One student who is not into social media uses it for art, "Really for me it's just like, hey, look cool art that I

might try to draw inspiration from... but that's about it" (Beck). In addition, many students use it for practical applications, such as the alarm or the time.

Carla, Dhara, Beck, and Nancy prefer texting instead of calling. For example, Carla said, "It's weird to talk to people anymore [...] So we are deprived of the human contact that I am assuming the older generation had when we were younger." For Nancy and Beck, texting is better suited to their introverted personality: "It is a lot less stressful; it's easier, less formal. And if they are busy, they can still get back to me in an hour" (Nancy). Here Nancy pointed directly to the advantages of texting. Beck compares it with what used to be a letter, "it's just like sending a letter that is instant, it will come to them, they will not see them right away, but it will guarantee that they will see it and read it."

Carla and Latisha commented on the difference between having an iPhone and an Android. For Latisha, getting a Samsung instead of an iPhone was important: "everybody is going to make fun of me." Carla added, "People with iPhones or any Apple products, hate people without iPhone [...] it really sucks, and really annoys me." She questioned the status related to the brand Apple with a tone of desperation in her voice, "The only reason I have an iPhone is because I was always off, hmm, I was tired of being looked at differently. They see the phone and they feel like you are part of their Apple gang or whatever." The rest of the students had an iPhone.

The students use their phones to make friends. For that, they use the App Instagram. Lucas explains how friends are made in social media, "Well, like, they will follow me and like... Eventually I will talk to them or something like that." When asked why people would follow him if they do not know him, he answers, "Because I feel like, hmm, people always follow people on Instagram even if they do not know each other but they see them around, you know?" Lucas

refers here to how followers will eventually be people students will meet in life at some point. The number of followers varies, from very few like Stephen, “I don’t have many followers, maybe 100” to thousands such as is the case with Crystal, “I have 46,000 followers.” According to Carla, Lucas, and Latisha, the average “normal” number of followers is around 500- 600; anything lower is considered a loser.

Students also use their phones for academic purposes. Aside from what every teacher assigns to do with the phones during class, students also get applications (apps) from teachers to use outside the classroom, such as Remind (an app that sends short messages to groups) and Kahoot (a game based learning platform for computers and smartphones). In general, they acknowledged that for last minute changes in assessment, or due dates of a project, the Remind app is practical. “I have reminders for most of my classes” (Riley). When asked if those reminders could diminish notetaking skills, Riley says, “No, I feel like with the pace in (school name) I feel like it’s hard to write something down, so it is good to have the Remind.” Stephen said, “It is very useful that the teacher reminds me to bring a calculator to the exam,” as he would have forgotten. Nancy said, “I probably have 11 or 12 reminders. I find it very helpful because I am one of those people that need a reminder because I am ADHD and can see the purpose of it sometimes, but I can see that it is too much sometimes.”

On the other hand, other students such as Beck criticize the overuse of Remind App. He feels that it is not necessary to be reminded of obvious information, just for change of original plans.

Students also get notifications when any teacher posts something in Google Classroom. For students, such as Sara or Nancy, who want to be on top of their schoolwork, those notifications are important. Another popular app is PowerSchool, where the kids can see their

grades and receive notifications the moment the teacher posts a grade. Crystal would prefer for this app not to exist, "I don't really like checking PowerSchool." She says that with a grim face. Crystal struggles with grades, so I infer from her comment and sad expression that Power School are bad news for her, or, more precisely, she does not like her mother to receive bad news. Definitely PowerSchool App may have the potential to elevate stress for students who have already existing problems of anxiety.

Student Feature. "It's not the phone that people are connected to; it is like the feeling of being connected" (Latisha)

During her middle school years, Latisha went to live with her mother after her parents' divorce. Her father gave her a Samsung phone, the same brand he had, so that they both could play the same game that was only found on a Samsung. Getting a Samsung instead of an iPhone was important for Latisha, due to the lack of "prestige" that Samsung has among teenagers, as we mentioned above. She understood that Samsung was a way to maintain a special connection with her father, who lived in a different state. Latisha finally got an iPhone in high school. The connection she has with her father now is sharing a topic he likes: outer space. By sharing news with his daughter about a subject he is interested in, even though she does not care about astronomy very much, the father is showing her that he is thinking of her.

In Latisha's case, her smartphone became a metaphorical connection with her father. Even though the conversation is not necessarily about personal life, they share videos. They feel they can communicate any time because they both have a device that allows that: "I think it's not the phone that people are connected to, it is like the feeling of being connected."

Latisha thinks that her parents blame the phone for lack of connection, but instead, for her, a feeling of disconnection would have been there anyway, "I think parents are… you are too

much on the phone, like they want to be connected but they don't know how, without the phone, they would be disconnected anyway." Latisha suffers from the lack of effort from the part of parents to connect with children in general. What would life be like without a phone then?

> People would talk more I guess, but I mean, it is about the same, but people are the same. [...] Phones don't make them talk less to people. If people like to be alone, they are alone on the phone, so if you are alone and you are on your phone, people don't think badly of you.

Her thoughts about kids being on the phone too much has to do with a lack of better options apart from the phone.

> Kids are on the phone because they don't feel connected with those situations, nothing around them, or nothing that catches their eye. If they do something interesting, they will pay attention. The parents ask everyday how is your day? So there you go. So it's the same always and you get on the phone. Parents should make an effort before blaming others.

This comment suggests a different perspective from the commonly held belief that kids are disconnected from reality because of the phone,

> People are on the phone when they don't feel entertained, and your parents try to talk to you, but probably kids don't want to talk to the parents. It may look bad, but they don't want to answer the parents. They have nothing to say (Latisha).

Also, it is important for Latisha to be connected with what happens in the world, to be informed. Indeed, if important events happen in the world, such as political, social or economic occurrences, people will need to be informed. For Latisha, the phone is her only way to get information: "I don't really see any newspapers, as whatever it is being posted, people make

screenshots and post them on social media, and you will get them there, also, much of the brands are on social media." When asked about what bad things can happen, she cannot name any bad or good thing that happened recently that could have made her realize how important it is to be informed; however, she is very positive that it will happen.

The need to be in connection with others all the time makes the new smartphone policy at OaksLand High School difficult for her to follow. For example, Latisha feels anxious in case something "bad" may happen during school time, and she does not know about it without having her phone, "What if it is not a drill, but a real fire? I need to contact my parents."

For some students, talking about music groups and sharing their favorite songs is a popular way to connect with their circle of friends and with the community. Listening to music is one of the favorite activities that Latisha does on her phone. She likes pop and music from the 1980's. However, for Latisha, this activity was a discovery of her own identity in contrast to her race and cultural identity. In her new middle school, where most of the students were African American, she felt judged and questioned about her cultural and racial identity because of her taste in music. "Most people I know like rap music and I am ok with that, everyone listens to what they want, what they like, it does not matter the race or gender to determine which music you should like." Because she preferred other kinds of music, she was described by her classmates as white inside but not real black. When asked what she responded, she added, "I said I am not, but they keep telling you what you are not, and they make you feel bad for liking things that you like, it's just annoying, I think you should not discriminate for what people like."

Latisha is aware of race issues, such as the issue of identity when two cultures interconnect and one is considered more prestigious than the other. That is the perception that some kids of the same color have about her. The identity struggle that Latisha shared with me

when talking about her music preference was a very gratifying experience for her. She revealed to me that the interview experience helped her have a sense of release and a good feeling about sharing that struggle with me. “It is so good to get it off of my chest.” This public school in the South, or in any public school of the district, fails to provide minorities a safe space to allow that kind of conversation. Latinos and Latinas, Muslims, Jews, LGBT, and especially African-Americans should have an opportunity, guided and coached by a trained facilitator, to express the kind of struggles that Latisha shared with me. This safe space allows for a safe conversation and sharing of experiences and feelings related to racism, bullying, stereotypes and prejudices and this is the first step to acknowledging an important identity struggle. The opportunity to have students express their experiences and challenges would eventually translate into better academic success and more meaningful and grounded education. Talking about connection, one of the reasons why this gratifying conversation was particularly rich for both of us was because it was in person, not through a digital device.

Their First Experience as Phone Users

The ages when the parents gave my students their first phones vary. Two students got phones in elementary school, three in high school, and half of them in their middle school years, mostly seventh grade. Students who received their phones – either cell phones or smartphones – later than middle school, said that they felt frustrated or / and left out. Lucas clearly expressed this feeling when he said,

> I don’t think I missed anything, but definitely feel like there could have been more, you know what I am saying… I felt everyone had more than me, if you don’t have a smartphone, you are almost unrecognizable, because everyone has one.

Beck added to Lucas' sentiments, "I did not really understand any internet social conventions that were being brought up in the like, in the classroom, when people were talking, hmm, oh did you see that video? And I was completely out of the loop." He acknowledged that before he got a cell phone, "people probably looked at me as a loser, but" he pauses as if speaking aloud to himself, "I did not care, or I didn't notice."

Parental Restrictions on Smartphones

Restrictions placed by parents on smartphone usage for their kids greatly varied, and the parents' norms changed as their children grew up (except in Stephen's case). Dhara, Crystal, and Riley had no parental restrictions. For Dhara, the only restriction she remembered was her limited data. "They just told me to like not to be on my phone a lot but, you know, when you get your first one, you're always on it a lot." Stephen, Sion, Lucas, and Beck had many parental controls. In Stephen's case, "They wouldn't let me have it when I went to bed. I had to 'plug it in' in the living-room or in the kitchen." That policy was still in use at the time of my interview with him.

Students who have many restrictions like Sara, who got the phone after middle school, and with restrictions, show understanding to their parents' decisions,

> My father was very adamant about me staying relatively far away from technology for as long as he could, hmm I guess [...] I was frustrated at first because my friends had a cellphone and I wanted to share with my friends this new world, but he was very on top of you know, reading a lot, hmm, focusing on childhood things, hmm, he was very worried that I used the phone too much. I definitely get it why he did it now, but I did not understand then.

Some students raised the question of parents' trust. For Crystal, she associated not having restrictions with the fact that her parents "have a lot of trust in [her]." In Lucas's case, he is completely fine if his parents check his phone, "Well, I have nothing to hide, and all is fine;" Stephen and Riley have opposite experiences in terms of parents trusting them. Riley's mom would never check her phone,

> I definitely have known people whose parents are like 'put the phone downstairs' [...] like they know their password, like phones get checked or whatever and I mean I feel like it just depends on the family, how the relationship is different.

Stephen is an example of that. His parents do not allow him to have the phone in his room and they have his password,

> In my account, they can see what I see. More or less like monitoring. I should not be worried if my parents check the phone. Other parents don't know how to use the phone, as much as mine, so they don't know what the kids know and do.

The four students that got the phone after the average age and with restrictions were grateful that their parents put confines on how and when they could use their smartphones. Lucas, one of the three male students who got his phone in high school, said,

> At first, I did not understand why he did not give me a phone. I was very frustrated about that, but as I sort of look back on it now, I understand why and I am sort of thankful that he did that [...] and I appreciate it now because there is no way that I would've been in the same place that I am now if they didn't, hmm, and I definitely respected that, hmm, we see the happy but you don't see the bad and the sad, there is to take it in social media. I feel like it has a degree effect that we don't know yet.

Sara specifically thanked her father for limiting her cellphone use. She said with a large grin on her face "Definitely I am not in technology as much as they are; - her classmates- which I guess are thanks to my dad, so..." Students spend many hours on their phones daily. It goes from two to five, and an average of four hours a day. This increases over the weekend. All of them coincide that when they are with friends, they use their phones much less.

Students' Perceptions of their Friends' and Siblings' Smartphone Use

The next subject I discussed with my students was their perception of their siblings', friends', or classmates' use of their smartphones. Three students commented on how their young sibling got their phone three or four years younger than when they got theirs. All the students commented on that fact with a sigh of complaint. For example, Latisha said, "He - her brother - was in 4th grade. As soon as I had one, he was begging for one and he got it right away. It really annoyed me." Latisha here shows a sense how unfair this was.

The five students with younger siblings, Riley, Beck, Lucas, Latisha, Sara, and Nancy expressed keen perceptions about how much more frequently their younger siblings use their phones much more than them. Sara, Riley, and Lucas complained about their sisters' anxiety problems, lack of respect to the parents, and the throwing fits when their phones are taken away. Lucas described his sister's constant use of her smartphone and argued that having a smartphone too early leads to bad habits and disrespect,

> Like everywhere, every minute of the day I see her like posting on snapchat because she is in the big following base, hmm, and when my parents want to talk to her she is with her eyes on the phone and talking at the same time (pause) I just feel it is disrespectful, it makes you feel bad, it makes you feel like I guess I am not worth their time in the day.

Latisha's and Beck's brother often lose their cell phone privileges very often because of their bad grades or behavior.

The students reflected on their younger siblings' smartphone usage and the evolution of the digital era. They think they are more addicted to their smartphones because access to technology has changed in the two to three years difference in age. For example, Beck said, "My brother was younger when this was more developed, so that is the reason why they are more addicted." Stephen, Dhara and Lucas have a similar perception, and that the impact of technologies on their younger siblings has been bigger than in theirs.

Regarding their friends, students expressed feeling that their friends were addicted to their smartphones. Lucas said, "I think like everyone is addicted to their phones, hmm, I don't even exclude myself. I see that I got on my phone, time flies, so I am aware (pause) and I still try to make up for it." When asked if he considers himself different from the rest of his peers, Lucas agreed, "Yeah, I mean I definitely think... I wanna think that I am." He explains that this is due to his parent's strict policy at home. Sara stated that initially, when people first get their phones, they use them a lot, but later as they mature their cell phone usage lessens, "It is a maturity thing. I have seen my friends growing up with their phone and I see that –now- they don't use it as much."

Carla and Beck have a strong opinion about how people are consumed by their phones, and unmotivated to do anything in the real world. Beck has a friend whom he considered very addicted, "I have known people like that, they develop more, hmm, unwilling to be social, I think, with the real world, and just unwilling to interact with the real world, so their personalities become so contorted around their fictional world." He referred to his friend's story, with a sad tone and a little laugh at the same time.

Two students disagreed that their friends and peers were addicted to their smartphones. For example, Stephen said, “I don’t see it that much… I guess when you are with people, we all talk when we are here and we also text. I don’t see them being addicted.” Beck, Latisha, and Riley think that people just want to be entertained, all the time, and that is why they are all the time in their phones, “People are on the phone when they don’t feel entertained, and your parents try to talk to you, but probably kids don't want to talk to their parents. It may look bad, but they don't have anything to talk about with them” (Beck). This idea of entertainment that Beck always brings up has been a recurrent theme in many different parts of the conversations.

Student Feature. “People are so obsessed with their phones!” (Carla)

Carla’s relationship with her phone is dramatically linked to her desire to feel alive. Carla’s perception about her phone’s use has evolved from being obsessed with it, to being critical to what she perceived as smartphone addiction around her, from being depressed and wanting to die, to choosing to be alive, and living in the here- and- now.

Carla has a very clear idea about the consequences of the smartphone’s overuse by experience. She acknowledges that her phone is important for communicating, but she has come to the conclusion that the extra features that the phone offers do not interest her anymore, “I feel I could have a flip phone; you know? And be fine. However, like all of the apps and other stuff are like luxuries, you know?”

Carla struggled all her junior year to be on time to school, to be alert and to be focused in her classes, to follow due dates or to be ready for assessment. She remembers being on her phone a lot, “probably 12... Not 12 but maybe 8… maybe 7” constantly on social media or watching countless Netflix TV shows during the night. “I did have sleeping problems, like I was constantly watching Netflix [...]. I was procrastinating and like that preoccupying my mind, so I

didn't have to think about other things." Most days Carla missed homeroom class, which is ten minutes before the first class period. When I asked about it, she was very sincere about her non-stop cell phone use at the beginning of the school year. She started to procrastinate, and she blames the phone for making it much easier, "There is always something to do on it, so, hmm, there is a book to read, or an assignment to do, and you don't want to do it, then you can just find something else to do on your phone."

Carla represented the student with the classic case of Problematic Internet Use (PIU). In Carla's case, she had the ability to realize she had a problem. She wanted to change, especially when she started to earn low grades. Having good grades was very important to her, mainly due to her complicated relationship with her two divorced, busy parents. She reported, "I used to be extremely worried about grades, get approval from my parents, you know, I was trying to, you know? Be noticed, so like give me praise for good grades" Getting out of (name of town) was important for Carla, so that was why she needed to get good grades "and to go to college far away and you know, that was my top priority." At the same time, good grades meant to be a "good girl" for Carla, to do the right thing, to get noticed and praised by her parents, whom she perceived as distant in her mother's case and absent in her father's case.

That incompatibility of having PIU and an obsession with good grades at the same time, led consequently to an increased cycle of stress, failure, more internet, and, finally, depression. Then she increased the use of the internet to cope with it.

> Like, I mean, everything that is on my phone is, (pause), you know, (pause) marketed towards me and who I am, so it is a lot more fitting for my free time. Looking at homework, it is usually boring, however, hmm, but I just feel like a stress ball, you know,

> cuz why am I on my phone, hmm, when I should be doing homework? I shouldn't be doing this, hmm, but I like what I am doing, hmm, but I should not.

That cycle ended in a suicidal behavior triggered by the death of her cat, "Last year, you know? How I have a really bad year, you know? I lost all love to live, my life was pending on a thread and that thread snapped when my cat died. I was completely hopeless." For Carla, her cat gave her the love she missed in her family, "cuz she was like the only thing that ever showed me unconditional love." Carla had to leave school for some time to recover and was under observation and psychiatric therapy for suicidal teens. That experience provoked many changes in Carla's life. It helped her realize that she had an obsession for "being liked" - a component of social media. She had to develop a more authentic relationship with herself,

> I kind of realize like, hmmm, all that really matters in this world is like me, for my life, hmm, it's like (pause) how can I enrich others? And how can, like, I make experiences for my own self? Instead of like, hmm, how should other people see me?

It was also a call for her parents to understand her needs and struggles and pay more attention to her in a more meaningful way. Now she is re-establishing a new relationship with her absent father, a relationship which she described as confusing, but positive.

Almost a year after her crisis, her attitude towards the phone has become more critical, "I think it's bad because... like what you see on your phone is what ...somebody else in the corporate world wants you to see on your phone." She also became aware that watching so many Netflix episodes was a way to avoid her complicated relationship with her parents and that her need to be appreciated manifested itself in her preoccupation with good grades. Carla is working to change that perception, and this senior year she is trying to be more present and involved in school activities. "I don't really talk to so many people on my phone anymore. I

think it's useless. I'd rather have like, you know, in-person conversations." She claims she is studying and learning more now, rather than just getting a grade.

Now, she claims, the smartphone is not as important to her. She made that statement without reservation. Along with that same definitive statement, she admitted that she has addictive phone usage behavior and that she loves to check on everybody's lives on Instagram. "I like to use it; well I don't like to use it, but, hmm, I end up using it." However, she only spends an hour on the phone at night, and she has reduced her social media time.

Carla specifies that communication is important for her, especially with her parents and a couple of good friends, but that a flip phone would offer the same service. Now she looks around and she sees people constantly lost in their screens. She has read about the cell phone addictions, and she is proud of not being part of them. She feels different from the majority of her peers, and she is comfortable in her "new skin" after her dramatic change,

> People are always on their phones doing something, but I was trying like you know, talk to people, last year I really saw everybody and just like, everything , everybody is so absorbed in like, hmm, the internet and technology that stuff s, hmm, it doesn't make sense to me, it's, hmm, that's not real, like this is real, (pointing at me and her) this is an actual experience, I'd much rather live for like actual experiences than simulated ones.

Carla's new friends think as she does. They – a minority - have chosen not to be in social media as a statement of self-identity, a way of being different, almost with a sense of superiority of the majority whom they consider obsessed with the phone.

Students' Perceptions of the Smartphone Use in the School: During Class Time with the New Policy, and Outside the Class

I asked the students about their perception of their use of the phone at school, including during class time, and outside of the classroom. During classes includes how they perceive the changes in phone use after the implementation of the smartphone policy, how the students-participants adhere to it, whether other students follow it, and whether teachers follow it. Outside the classroom includes lunch time, homeroom and during the five minutes break between classes.

Students-Participants' Perception of the Smartphone Policy

Most students perceived the policy in positive terms. They appreciated that the policy helped their classmates to be less distracted by smartphones. They think that the policy is a deterrent because students do not want to lose their phones during the day. Also, they think it is embarrassing that the teachers take their phones.

Students Complying with the Smartphone Policy. All the students except Crystal and Dhara declared that the policy did not make much difference because they did not use their smartphones before the policy, "I don't mind putting it on the tree, either way I am not on it" (Riley). Here Riley expressed most of the participant's feelings, although none of them, except Dhara or Beck, directly admitted to adhering to the policy or not. Beck added that he found putting the phone in the tree and keeping away during class time was a habit, while Dhara said, "I leave it in my backpack." Riley thought that the changes brought about by the school smartphone policy were all advantages "except for boredom." That comment implied that she used the phone before the policy, which contradicted her previous comment.

Most of the students, who have many AP classes, acknowledged that their decision to follow the policy depended on the difficulty of the class. Two students stated that if they found the class lectures boring then they immediately missed their cellphones. As for how the students react when they do not have access to their phones, either because they put them in the phone tree during class time, lose them or have them taken away, the students' reactions varied. Stephen said that he felt relief when he did not have access to his phone. "It is just a relief, with the cellphone is like (pause) I have to respond to, text back (pause) you don't have that burden, just have regular conversations in school." Carla, Beck, Sara and Riley expressed that they were fine if their phones were on the tree, or if they could not be taken out of their backpacks. For example, Riley said, "There is no urge to check the phone or anything like that." Lucas compares having the phone in class as opposed to not having it, "I feel I will be missing something - in class - if I keep it with me, I feel my classes are more important to me than my phone."

Student's Perceptions of How Their Friends Follow the Policy. Riley and Nancy said habits changed significantly in general. "I would say 80 percent less use than before the policy" (Riley). Nancy adds that "there is less temptation." Still, all of the student-participants agreed that their classmates did not like the policy because it was another rule to follow and expressed how others complained. Especially juniors and seniors, "they do not like to be told what to do" (Nancy). Still, they normally follow the rule, "When they are obliged, they complain definitely" (Sara). When students are caught, Beck and Sara agree that the students generally comply with the rule of losing the phone for the rest of the day. For example, Sara said, "I think it is totally, hmm, reasonable for a teacher to take this kid's phone after explicitly telling the class to put them away beforehand. I think that acts like a warning." Here Sara implied that it is beneficial for students to face consequences if they did not put their phones away. Three students, Nancy,

Stephen and Riley agreed that since the policy has been in place, only one or two students sneak out their phones and the rest do not want to get into trouble or are good students. On the contrary, Beck and Latisha think that kids who want to disobey a rule, they would find a way, being crafty and sneaking it out, or by lying to keep the phone.

When asked what the students do with the phone in class, Crystal answers, “So many things you can do, play a game, read a book, go to social media, in the five minutes pass it is not enough.” Many students relate grades and phone use in class. For example, Sara said, “I have noticed that even with the policy, the kids that don’t care about grades are more on the phone and they don't care about listening to the teacher.” They add that with more challenging classes, such as AP classes, less people use the phone.

Teachers Following the Smartphone Policy (or Not). All of the students agreed that the policy implementation had not been consistent and that it depended on the teacher. For example, Carla shared, “It just depends on the teacher and I feel like it also depends on their teaching style or if the teaching style is very affected by it. Mr. X is a very strict kind of teacher, like Mr. Y, who couldn’t care at all about what you do.” That comment links the enforcement of the policy with the teacher's personality and teaching style.

After the second year of implementing the same policy, some things changed. Most of the students stated that teachers were less strict about putting cell phones away. For example, Crystal said, “Last year, every teacher says, put the phone in the tree. This year, no teacher says, (pause) only two of them; they don’t go around and check. Sara explained a case with a particular teacher in relation with his phone policy,

> I think Mr. Z is a good teacher, yeah, but a lot of kids don't think so because he is very strict about the phones, and I don't see the correlation there, but kids aren't very happy with teachers strict about that, they think the policy is stupid.

Sara is very surprised by that unreasonable attitude and explained that she does not like the students in that class. She was also able to compare students' attitude in a mandatory class versus their attitudes in an elective class. The same teacher teaches an AP class on research. In that class, an elective, students can use the phone to listen to music and to do the research. In that elective class, the students like the teacher, "It's kind of weird. If somebody makes you do something that you don't like, you tend to not like this person." As a consequence, the atmosphere is much more relaxed and inviting to work. According to Sara, it has to do with students' maturity. Beck insisted that it has to do with boredom and placing the responsibility on the teachers' style "Teachers need to be more entertaining, so kids don't think about the phones. [...] People try to be entertained when they are bored." Teachers' personality and the more or less challenging nature of the class are determinant factors for breaking the school rule.

Student Feature. "I do not put my telephone in the tree, but I leave it in my backpack" (Dhara)

Dhara does not let her phone intervene in her family, social or academic life, "I don't use my phone when I am with my family, like I'm at a party or I'm with my friends or I'm doing homework." During homeroom, Dhara is the only one who is not on the phone,

> I don't think there is any point to checking the phone in the morning. If everybody is on the phone, I normally go and talk to you (laugh) or like, I can play a game hmm, so I play a game. If Riley is on the phone, so I lean over, and see what she is doing on the phone and then I ask her about what she is doing.

During the lunch break, Dhara does not like using the phone either. When all her friends are on the phone, she just leaves. “I normally say something, or I just leave. I say, OK, see you later, you are obviously more interested on the phone.” When she notices that she herself is on the phone too much, she self-imposes restrictions. “I logout of all of my social media and like I don't do social media for like two weeks […] I am very productive in those two weeks.” She recognized that the two weeks off phone makes her feel out of the loop. “I mean I guess there is a sort of feeling like I'm left out but like it's like my choice.” She started this self- imposed restriction in her freshman year and continued exercising it until the time of the interview, “I think once every semester I guess.”

In her academic classes, she misses more entertaining classes, because when teachers are boring students start to talk. When this happens, Dhara prefers her fellow students to be on the phone; this way they will be quiet and will not disturb her.

> I feel like the boring teachers are always the ones that are like “put the phone on the phone tree [...] I think it is a good idea to enforce the tree, (very slowly) but you also have to (pause) make sure that your students aren’t, hmm, like, hmm, bored. Like they are not talking in class, because the kids who have no phones are talking.

In fact, she says that by her own experience, as she does not put the phone in the tree, and she is one of the students who use the phone during class when she is bored, “just that I'm lazy and once I sit down, so I just put it in my backpack.” Still, Dhara does not use the phone unless she is bored, something that it is hard for her to bear. When she cannot talk to her friends, she takes the phone out and hides it. Dhara continues, “I am good at hiding it. (Laugh) If there is a book in front of me, I line the top of my phone with the book, like this, so they don't know, or I'll put it under the desk.”

Dhara is impatient and used to hearing or reading short pieces of information. She doesn't like to listen to the same thing twice, so it is during those moments when the phone is very useful, "I feel like sometimes they're giving information that we know, cuz Mr. C really loves to repeat himself. I don't want to hear the information twice, so I get on the phone." She does not do much on the phone, or at least she does not remember very well what she does, but I guess the possibility of doing things, feeling productive, is comforting. Still, Dhara recognizes that if she did not have her phone with her during class, she would do homework for other classes. "If my phone were in the phone tree I probably would do work for another class, homework," she says. One positive aspect of enforcing the phone tree that Dhara admits is that students cheat less. "Whenever they enforce the tree, less, but now students have watches and they can send messages with the watch."

About her perception of the use of the phone in the school, she thinks that the students don't like the new policy, and, therefore, disregard it. She reports, "People disregard the tree, I think they feel it's not a good idea, and they don't put it in the tree [...]. They do take it out to the bathroom whenever they go to the bathroom, and sometimes people use it in class." Dhara thinks that students show their rebellious personality by not complying with a rule they don't like, "Before the policy, they did not care much but now, with the tree, people don't want to be told what they have to do so they don't put it on the tree, so they want to use it more."

Even though she is one of the phone users in class, she admits that people without the phone "do not have the distraction, so they are forced to learn." Dhara added that in some classes up to seven kids take the phone out, and they just hide when the teacher is around. In that case, she reported that her classmates take out the phone when they are not understanding the lesson, or because "they had to do something on the phone." In spite of the fact that she never puts her

phone in the tree, Dhara understands and respects the rule, and remembers when one student got caught, “she throws a fit, it was more that she was embarrassed; she made a big deal about it. But there is a rule, if you get out the phone you lose it.” According to Dhara, many students do not understand why the rule is in place, and they feel that they can control and monitor themselves. “We are too far into the technological revolution. Maybe that would have worked with the first phones but for teenagers at this time, it is too late.” In that case, perhaps the problem would be solved if the administration explained why the rule was implemented. She thought about that idea, but according to her, even though it would be useful, still there would be kids who won’t comply. She may be thinking in herself being one of those kids.

Smartphones in School Lives

I also asked the students about how they used their phones at school, including during non-academic time, such as homeroom, lunch time, passing periods or the five minutes between classes, or to communicate with parents during school time for logistic purposes. During homeroom, Riley, Latisha and Dhara sometimes join the conversation instead of using the phone if the conversation is interesting. In many cases, the phone helps to start the conversation. For example, Latisha said, “Sometimes we are on the phone and we share videos, like this is interesting, and funny and pictures, like sometimes it starts a conversation.” Here Latisha pointed directly to the idea of entertainment as an ice-breaker.

It also works the other way around; she would use the phone if the conversation is boring. Lunch is 30 minutes, and it is the longest time the students are away from class. According to the students, some talk to their friends, and others use the phone to avoid awkward moments with people they do not know or when people talk about things in which they do not feel included. For example, “If there is a conversation, and some people start talking about something that you

are not included, or you don't know about that experience… Then you just go on your phone! It is a safety blanket" (Nancy). Nancy here pointed out the idea of avoiding "awkward" moments and uncomfortable silences. Beck likewise agreed with how students use their smartphones in the cafeteria to avoid having to talk to others or because they feel left out. "A person that would be more likely to bring a book to a party is the same person who would be more likely to be on the phone." He adds here, noting the importance of personality.

All participants except Beck, who said that he does not expect any notifications, admitted that they checked their phones during the five minutes from class to class, to check parent's messages or notifications. For example, Dhara said, "I am definitely on it during the five minutes changing class. Sometimes I have reminder notifications, YouTube notifications… sometimes I get snapchat, and sometimes I don't."

Parents are one of the reasons why students check their phones not only from class to class but during classes. For example, Nancy said, "During school day I check it between classes to make sure my mother has not sent me something important or my sister, she needed something." When asked why parents would send a text in the middle of the day, he said, "I don't think they realize they think it's normal to text and I will get it in a minute. They don't realize I am in class." Students feel the pressure to text back the parents right away to acknowledge the message. Some students get several messages until the parents make sure their kid gets the message.

Student Feature. "I am at school for a reason, and I think it is important to try and get as much as you can out of the experience there" (Nancy)

Nancy never asked for a phone, but she was given one at a very young age when her parents were divorced, so they could be in contact with her and vice versa. Instead, Nancy liked

playing and reading. “It was for communication for my sister and me. I was not the kind of kid that uses the phone a lot because I like playing outside and reading, just for communication back and forth” (Nancy).

Nancy has a very difficult relationship with her father, whom she describes as “pretty rough” and “mentally ill.” That complicated relationship affected her relationship with the phone. In Nancy’s case, her memories are linked to her father trying to find out what she and her sister were saying about him to their mother.

> He made us give the password to him. It was kind of a violation of privacy almost. I understood that from a parental concern that the parent wants to make sure that we see the right thing but it was not that, it was a control [thing]: ‘Are you talking to your mom?’ That kind of thing, it hadn’t been, ‘Oh, just making sure you are safe,’ don’t I wouldn’t have a problem, but it was not that. He checked my phone but to see if I wrote something bad about him to my mom. He was mentally ill, so he was very controlling, so he would be mad if we say something bad and tell us not to talk too much with my mom. He is in jail now for the last two years, so we do not have any communication. We have like a no contact kind of legal thing.

For Nancy, this kind of control of the phone was a negative experience, and I could notice that it still affected her emotionally when she remembered it. She is known to be a very curious student and her father’s control over her phone’ use is also part of her negative memories about her relationship with her father. When she wanted to learn about things happening in the world, she had to hide from him.

> In one way he wanted to know all we saw. He was controlling all the stuff we were watching, like the gay marriage, I was checking at night what was that. He would never let us see any news or any show, not for safety.

At her mother's house she was allowed to have the phone in her room. As I mentioned in her portrait, she is a very responsible student, and her comment about her phone use also shows that: "Sometimes I continued listening to music - after her mother told her to put the phone down at night - but I knew that the phone would wake me up, so I did not use it. But not much, because when, you know, once you are on it, your brain starts getting active again."

Her daily smartphone's use is related to school. She does not check the phone for messages in social media in the morning when she wakes up in the way so many other students do, unless she has teachers or club messages through the app Remind. Her phone use during school is very limited because she knows the downside of starting to check it.

> I tend to think phones are very distracting because there is so much you can do with the phone, at your fingertips so everyone is eager to look at that instead of ok what going on with right here right now and I definitely say that I do some of that but again as it is very distracting and I get distracted very easily. I tried to limit how often I look at it especially during school day.

Nancy is very aware of why she is using her phone, so it helps her to control herself and limit her use to a short period of time instead of getting hooked on using her phone excessively. To help with that goal, one of the decisions she made is to have only notifications that are school related.

Students like Nancy did not change their habits before or after the new smart phone policy was implemented.

> Well, I understand where they - administration - are coming from when the policy started, but I never had any issue putting my phone away in my backpack, so it is for me the same as putting it in the tree. Like I was not sitting on my phone before.

Nancy never imagined herself using her phone during class as she is in school to study and learn.

> Normally I try to stay out of my phone during or in between classes. […] I am at school for a reason, and I think it is important to try and get as much as you can out of the experience there. [...] I try to avoid it during class. I never used it during instruction. If the teacher says, you have fifteen minutes and the class is done so I try to check messages but as I said I get very easily distracted.

This conscientious attitude is shown here also when analyzing the phenomenon of using the phone constantly,

> On one hand, I understand that we need to use fewer phones, but we have to understand that it has become an important part of our lives. There is a balance between when it is appropriate to be on the phone and when should I be spending time with the people with me.

Looking back, she noticed that even though the phone was part of her life, her relationship with it may be different from her friends' due to the negative experience she had associated with it from when she was a child, "I definitely spent a fair amount of time on my phone, but because of my upbringing, I have a different kind of perspective on life and why things happen."

Generation Gap: What Adults and Youth are Missing from Each Other

The students were asked about their perception of the generation gap between their generation versus the generation of their parents, teachers and administrators - adults in general - in relation to the use of smartphones, and how the internet has shaped their lives. Most of the students think that their parents' lives are impossible for them. They try to understand them, as well as they hope that the parents should understand them, "My parents are all the time comparing themselves with their times, when they did not have phones, hmm, I feel like I know where they come from, but like time has changed and this is what we have now" (Dhara). My mom tells me stories like when you were young, she's always like how you just showed up at their door, but like I feel like it's hard to, do that in (name of the town) cuz it's so spread out." Said Riley, with a tone of hopelessness.

Two students felt strongly that her parents came from a different generation that did not allow them to understand the students' reliance on smartphones. "Time has changed, and this is what we have now. They don't understand what we do on the phone." Dhara. Half of the students think their parent's lives were better than theirs. "So probably it will be better, because everybody will talk to each other, and there would be less drama. It –phone- is like a safety net, hmm, confrontation on the phone is much easier than confrontation in real life" (Dhara). Still, she thinks that even in her generation, some people, like her, prefer to talk. "I think I can express myself very well in a text, but I think I prefer to express myself through talking. Well, I think the phone does not let you show your emotions" (Dhara).

Many of the students strongly felt that smartphones and the digital age defined who they are. Beck commented, "I think if this - smartphones - existed when your generations were younger, - referring to me - it would have affected your personality in some way." Lucas added

the idea of a connection between his and younger generations, “If there is information there on the internet, they have to know that younger generations are going to have it too or something like that.” On the other hand, Stephen explained, “In terms of personality, my friends have shaped me more than the phone.”

As for the level of information, Lucas and Beck felt that the smartphones allow them to be as informed or even more informed than the parents, “Like your parents are trying to explain things and make sure you don’t do that and you are sitting there and listening, and it is kind of frustrated because you are like “I knew that already” because you have seen it thirty minutes before in internet, and you don’t want to hear the same info twice, but you don’t want to say that. And parents have lost that role of source of information “I think parents do not have as much effect on their kids anymore, hmmm, because kids are so exposed to the media now. Like the youth is like, “I knew that already” (Beck).

Comparing, the students also noted that parents use their mobile devices for work and communication with them, more than for social reasons. For example, Riley said,

> I feel like my mother uses the phone more like necessities, she needs it like to be in contact with us like we are ok and for work she uses it to keep up with all our activities, and I think like for my generations, we uses for communication and to be in contact but among your generations is more like share experiences.

Having access and using social media allowed the students to be more open minded. On the contrary, half of the students felt their parents and the older generation were less open minded because they did not access the same social media sites as them. Latisha said, “Most people are maybe prejudiced against other people, but in my generation, we see a lot of YouTube videos, so we know how people are, how they are, so we are more open minded.” (Latisha). For Latisha,

news without comments, like from TV, radio or newspapers were not as good as the ones from social media. Sara explained how to get information on the phone, “I think regardless if they - people - look for information or not, they will be exposed, even with the different advertisements even on Instagram, celebrities that are based on line, you tubers, and what not they are all over the world.” Sara added that there is more involvement in the social issues because of the news in the media, “like our generation is more open- minded and also more considerate to other people because you have more exposure to other people.”

When asked what she knew about how the algorithm works in social media apps, Sara thought for a little while and added, “Yes, as someone who follows like MSNBC and social movement stuff, I never see any social media in the right, hmmm, yes, that is also true with advertisement.”

Dhara reflected about isolation that comes before and after the smartphone,

> There are people that are shy, so they don’t want to talk to people, so they enjoy the company on their phones, and also there are people on line that they feel they can talk to I guess, but also the phone can make you lonely. They are connected to others but not, hmm, here and now.

For Beck, the generation gap means a normal and inevitable disconnection between parents and children, and it has been always like that,

> I don’t think that a full connection would ever truly be possible between generations in general. In history, there has been the older generation heckling the new generation for not being like them. It's just how it goes. Throughout history it’s like this: the new generation thinks they don’t understand them, but because we have such a developing time where people’s opinions conflict with each other so much, and people’s opinions are

able to get to each other, because of the Internet, it is more apparent that the opinions are different.

For Beck, the gap is inevitable, and the new digital paradigm makes it more noticeable.

Student Feature. "Some adults don't understand that you can start like a business on there and like make a living on social media" (Crystal)

Crystal got a cell phone without any restrictions when she was very young. Being an only child and with the above-mentioned medical problems, Crystal's parents probably had more anxiety about her security and physical well-being, and might have been more likely to have fewer objections to allowing their sick and shy daughter find an online life that makes her happy. She recognized that, looking back, she spent too much time on her phone. As far as I know her from freshman year, Crystal has been very attached to her smartphone. During homeroom, she barely talks to anybody, but instead, she sits quietly observing activities around the room with her headphones on, or on her phone. When leaving the classroom, she still has to be reminded almost every day that earbuds are not allowed in the hallways. For her, music is a way to calm her down, to cope with anxiety and depression. It helps her concentrate, so the new policy has affected her negatively.

Crystal has another reason to be very attached to her smartphone. She has a strong opinion about the new possibilities that the digital era is providing this generation as an alternative to going to college, and still has a good life as an adult. She stated, "I think that… you can get straight to college, you can get a job, but you can also do social media and make a really good living out of it and be really hmm, good." By "do social media," Crystal means that people of her generation can become a YouTuber or, in her case, an influencer.

Crystal's opinion comes from her experience. As mentioned above, her smartphone is very important for her because she needs to take care of her social media accounts. Taking care of her social media means looking for funny videos or funny pictures that she finds on YouTube or other Instagram accounts and posting them on her Instagram account. She reported, "I just post funny pictures, and photos, and sometimes I make my own jokes and stuff, I have my own theme, and people comment." She used to use the video all the time in her freshman year, so the change in policy was bad news for her. "I liked it when I could take pictures and videos in class to my friends, in freshman year."

Crystal dedicates several hours a day to that activity. Her 46,000 followers on Instagram, an unusual number compared with the rest of the participants and the average among her peers, made her very proud of her success. When asked if she is famous, she responds with a shy gesture, "Kind of." For Crystal, Instagram is a way to connect to the outside world in the solitude of her bedroom, to make "friends." She explained, "They don't know me, but I go live a lot, so they talk to me, and like, hmm, people from Germany, or different places and countries. So that's cool, so I make a lot of friends, they ask questions like how are you doing... what's your favorite color, just a bunch of questions." Crystal talked about that side of her life with pride and a smile. She cannot conceive of her life without the smartphone. In her struggle to succeed in her academic life, and with her medical history, those thousands of followers provide immense support and are probably the most important part of her sense of self-esteem, what makes her feel good about herself.

Crystal is not sure how the system works, but she has an idea that it is by the explore page. "I don't know how they found me, probably just popped up on the explore page and then they just like the picture they saw and then went back on my account and just followed it."

Similar to the movies that Netflix suggests to us, or the items that Amazon offers us in our main screen every time we open those apps, the Instagram followers find her with the Instagram algorithm. Crystal continues, “Like in the explore page on Instagram of people that you don't follow, so you can go on there and then you'll see something that you like and you might like the person too [...] So if you like certain things, things that pop up on your screen, then they look for similar content.” Followers watch pictures on Instagram and like them and some others post the pictures and try to make a profit out of the likes.

Crystal had learned how the system works through a stroke of luck when she was a sophomore. One of the pictures that she posted got a like from a popular singer. As a consequence, thousands of the singer’s fans also liked her post. According to Crystal, “The top one that I had more people, like it was 100,000 because, one famous artist, Billie Eilish, liked the picture, she liked the picture, and all of her followers liked it to [...] She has seen ten of my posts but I don’t know which one she liked.” This big amount of likes positioned Crystal as a potential advertiser, and she said, “Sometimes people ask me for like sponsorship, so I post them, and they will pay me, and also, sometimes they ask me, I will pay you if you post me.” One company offered Crystal $100 just to post an ad for its product. Then, if they want her to post it again, they will pay another $100. “There is a famous dog, waggy paw. He has millions, so his post is $100 if I post the dog [...] every time I post; if they want me to post again, they have to pay, again.”

With these kinds of offers, it is easy to understand why Crystal is seriously considering following this path that is, running her webpages, where she thinks she has a future, rather than going to college, where she anticipates having the same academic difficulties as she is having in high school. When she spoke about how her mother insisted she go to college, her face looked somber and sad, “I don’t want to go... to college… My dad went to the army and did a little of

college, so he understands me more, but my mom does not understand, probably because she went to college." On the other hand, it is interesting that Crystal's relationship with her smartphone seemed to have offered a much needed safe and friendly space, maybe a refuge, to find the support and self confidence that the school did not provide. That circumstance also gave her a "professional" opportunity that she is not finding either in the academic world.

To conclude, students like Crystal with early access and nonrestrictive use of a smartphone, shy and struggling at school, seem the perfect combination to become potential social media "professionals" YouTubers and influencers. With the new marketing rules, some of them have already proved that people can make easy money in this medium. The long-term outcome of this new trend for the new generation's health and for society in general, is still to be seen.

Summary

Summarizing, I have exposed in a synthetic way the most relevant themes that I found after a close reading and systematic analysis of the almost one hundred pages of transcripts. The perceptions of their use of their smartphones at home present the different memories of the students- participants since they first got their first phones. It also included the level of importance, when and why they use their phones. Next, the students' perception of their phones used in the school describes the situations where their phones are present in their school life when it is not for instructional purposes. The change in the smartphone policy in their school is reflected in the next section. The students first exposed their own response to the policy, the teacher's implementation, and next, how their classmates are following the rules. Finally, the last section reflects the students' perceptions of how the phone has shaped them in relation to their parents' lives.

CHAPTER 6

DISCUSSION

The growing influence of digital devices has become an increased object of study by clinical psychologists because of the appearance of new behaviors in children (Dunckley, 2015; Heitner, 2016; Kardaras, 2016, 2017). Using Urie Bronfenbrenner's (1979) bioecological systems theory, we understand that in human and social development, the microsystem is where the first personal interactions of my participants occur. In this system, family, caregivers, and school are in the closest circle of the child's interactions. Ecological systems theory is invaluable for educators because it enables teachers and administrators to understand the influence of the microsystem in which a child is situated. The incorporation of the techno subsystem (Johnson & Puplampu, 2008) into the microsystems is due to the high influence of the digital devices in the life of a child. With the later incorporation of a new system, the digisystem (Walker, 2015), there is a new element of the complexity in systemic theory. What happens in this system extends towards adulthood and crosses all the layers until the macrosystem. It is all the circles of influence in my students' lives that I am interested in understanding.

The organization of this chapter mirrors the findings in chapter five. First, systemic theory will guide the analysis of the relationship of my participants with their smartphones at home and how the interactions in their first settings influenced their habits as digital media consumers. Next, I will discuss the findings related to smartphone use in the schools, focusing on the implementation of the new policy designed to control the students' misuse of their devices. Finally, the last topic is the perception of the students of their lives compared to their parents and grandparents. With each area, I draw connections between my findings, theoretical framework, and literature from the literature review.

From Microsystem to Digisystem: Smartphones in the Participants' Everyday Life

The first question that I asked to my participants was how important their smartphones were in their everyday life. The theory highlights individuals' relationships with their communities and the world. Developmental psychologists argue that the effects of the substitution of face-to-face social interaction for screen time limit social and conversational skills (Turkle, 2011, 2015) and normal healthy development (Heitner, 2016). The systemic theory explains human development in a holistic way. In this section I will analyze the participant's perception of their first experience at home with a smartphone, including the perception of their sibling's use, parents' trust, community influence, how events such as a divorce have affected that relationship, parents and kids connection, and new on-line careers.

Microsystem. Effects of Parents' Policy towards Phone Use and Children's Relationship with their Smartphones

The majority of the students (6 out of 10) received their first smartphone when there were 12 years old. This corroborates partially my expectations supported by the literary review, that in 2016 determined that the average age to receive the first phones is 10 years old, (Chen, 2016). In my research, only one student receives the phone before 10. The rest of the participants (3 out of 10) received their phone after high school, which is a rarity according to the literary review. Interesting to mention that James P. Steyer, chief executive of Common Sense Media does not let his kids get a smartphone until they start high school, after they have learned to retrain and the value of face to face communication. (Chen, 2016).

The results suggest that the different degrees of the participants' attachment to their phones in their everyday lives depended on their parents' position on early phone use.

The group of student-participants that had later access to the smartphone and with restrictions ended up being critical and responsible users. They are more aware of the consequences of the overuse of the phone. These same student-participants reported spending less time on social media and that their smartphones were not very important in their lives. This compared to their classmates who received their phones in, before, or during middle school and with minimal restrictions. These findings corroborates my anticipated expectations following what clinical psychologists report about the importance of setting boundaries for a balanced and mindful use of screens in the early ages, (Duckley, 2015; Hart & Hart, 2013) and anecdotal personal experiences. This practice is critical as prevention for future health, social and emotional problems.

In addition to the benefits of delay in accessing the smartphone world (i.e., the digisystem), the time that these student-participants were not on the phone is worth discussing. Beck's parents exposed him to non-screen activities from a young age, such as art classes and piano lessons. In Stephen's and Lucas' case, both participants are very athletic, and their lives revolved around soccer practices, games, and tournaments ever since they were very young. Sara, the other student raised with boundaries, loves reading and plays the flute. Being raised exposed to other options, and not simply restrictions, means that there is less chance that when they grow up they will use the phone compulsively (Heitner, 2012; Robb, 2016).

Most of the participants who were given a phone in high school or in middle school with a lot of restrictions, expressed that they were grateful that their parents exercised some control over how and when they could use their smartphones. Sara realized during the conversation that her passion for reading and her critical attitude could come from the way her father raised her. That feeling provoked in her a big smile, which I interpreted as a manifestation of appreciation

and love towards her father. Lucas understands and respects his parents' position, even though at the time, when he was in middle school, he felt he was missing out on something. In Stephen's case, as we saw in his biography, he was authorized to use a cellular phone when he entered high school. His low number of followers on Instagram, 100, shows a very limited life on social media. He uses the phone mostly for communication and feels relieved when it is taken away. Beck felt that he had not missed too much during his middle school years and ninth grade. At the moment of the conversation, he was not interested in social media. Findings corroborate that bringing up children exposed to other non-screen activities promotes activities that help to avoid Problematic Internet Use when they grow up (Dunkley, 2016, Kardaras, 2016, 2017).

Biological System and Techno-Subsystem. Siblings' Use of Smartphones. In the same microsystem, the same setting affects each member of the same family in different ways. It is the biological component in the bioecological model (Bronfenbrenner, 1995). Riley's younger sister got the phone at the same age as Riley. Nevertheless, Riley describes her sister as obsessed with her iPhone and very disrespectful with her mother when she tries to set boundaries. The setting is the same, but not the biology. Nancy, Sara, Lucas, Latisha, and Beck also spoke about the very different attitude they have towards their phones in relation to their siblings. Each one of them described how his/her younger sibling was addicted to their phone and how they were disrespectful with their parents because of overuse of the phone. Those five participants' parents gave their phones to their younger siblings when he/she was two to four years younger than my participants. They were very firm with the first child, but for different reasons, they were not strict with the second. Interestingly enough, I experienced the reversed situation, giving my first son the phone in middle school, and the second in high school.

Why those changes in parenting style? In Latisha and Beck's cases, their younger brothers were so insistent on having the same as their older brothers that the parents gave in. In the case of Lucas, the parents saw that Lucas did not change in the behavior and they thought it would be the same with the sister. In Sara's case, when her parents divorced, Sara went to live with her father, and her sister went to live with her mother. Contrary to Sara's father, who restricted her phone, Sara's mother gave her sister the phone very young without restrictions.

Nevertheless, apart from the biological difference among siblings, the outer circle was also different. Beck and Lucas justified their brothers' excessive brother's misuse of the phone with the fact that in the three years that separate them, the technology is much more part of their lives. The digital era has changed habits very rapidly, even in the same family, and with three or four year's difference. In addition, technological companies have designed tablets for toddlers, and YouTube has a special channel for children. Even if the same restrictions applied to the younger kid, a few years before my participants' generation, kids were much more exposed, and the social pressure was more substantial. The students' perception of the rapid changes in the behavior of the younger population is also aligned with other observational studies that show a trend of smartphone use at younger ages (Chen, 2016).

According to Johnson and Puplampu (2008), the influence of digital technology in child development is crucial in a bioecological system. When older siblings and parents have digital devices, it is more likely that younger children borrow them. This qualitative analysis does not determine that Sara, Beck, or Lucas would have been more addicted to their phones if they would have got the phone at the same age as their younger siblings. Nevertheless, according to the literature, there is a possibility that the fact that Beck, Sara, and Lucas display a more critical view of the phone's use is a consequence, not a coincidence. In addition, the change in parenting

with the younger siblings in terms of age and boundaries is consistent with the higher attachment that the younger kids have to their phones, which corroborate the intervention of the digisystem in the microsystem as a new area of influence.

Digisystem in the Microsystem. A Question of Trust. Stephen had extreme restrictions at the time of the interview, such as not having the phone in his room at night. Stephen would like to have the option to find out if he would "abuse" the privilege by being on the phone in his room. He lamented that he would never know if his parents would really trust him, or if he could trust himself. Stephen's relation with his family concerning phone use may have had an influence on his personality, not allowing him to develop responsibility. On the other hand, Riley, whose mother never laid down restrictions, and does not believe in checking her phone, thinks that her non-obsessive use of the phone stems from her good relationship with her mother: a relationship based on trust. In Lucas's case, he is completely fine if his parents check his phone. He agrees that his good relationship is what makes him feel fine about his parents' strict phone policy. In the three cases the relationship with the phone is an extension of the relationship with the families. Mutual trust among parents and children is a sign of healthy and good communication, which is crucial for implementing best parental practices regarding smartphone use (Turkle, 2011, 2015).

In conclusion, having or not having early access to a smartphone could be a determinant factor in explaining why some kids have a healthier relation to their devices, but in an ecological system the family' principles in other aspects of education or free time, together with the kids' personality, are conclusively responsible for a healthy approach to their smartphones.

Mesosystem. Community Support

In ecological systems theory, the mesosystem is the interaction which occurs between two microsystems (Bronfenbrenner, 1979). How a given family relates and interacts with other families is a determinant in the parents' position towards restrictions of cell phone usage. The findings showed that community support, as well as parents' principles, plays a crucial role in the usage habits the young people develop. Implementing rules that go against the current require a huge amount of energy and effort from parents. How do Stephen's parents maintain that strong conviction to enforce this unpopular rule constantly? How do they control and supervise Stephen and his two younger brothers? In Stephen's case, community support is crucial. Stephen's parents' best friends from "down the street" have the same policy, and when they are together, he is also tracked by his friend's mother. In Lucas' case, his parents also have friends who share the same vision about the appropriate age for their kids to have a smartphone. It makes sense that Stephen and Lucas's parents are encouraged and supported by the strong values of their best friends. It is much easier to maintain a position against the popular attitude and social trend when supported by one's social circle. This conclusion corroborates my own personal experience.

As a parent, I decided not to give my second child a phone until high school. It worked during sixth and seventh grades because the parents of all of his closest friends in the neighborhood agreed that they did not need a phone. However, by the end of seventh grade, one mother, who got her phone upgraded, passed the old one to her son, which started a chain reaction. The rest of the parents probably thought it was not as important to maintain their original position, and by then, the peer pressure had kicked in. Additionally, as a parent, it is difficult to resist the temptation of making one's child extremely happy and enjoying effusive demonstrations of love. It is also easier and "guiltless" for parents to pass on an extra phone rather than to go out and actively buy one for their child.

Social pressure works more often the other way, as we saw that many of the participants got a phone in seventh grade, when, according to their perception, everybody was getting one. In addition, there is the marketing pressure. The mentioned phone upgrade was demanded as soon as some of the participants got a better or newer one. I believe this strategy is intentionally designed by the companies for that purpose, to provide the "lucky" child with a phone; that means to make her or him a consumer and a customer for life.

Chronosystem. Events in the Life of the Child: Divorce and Moving to another State

Following Bronfenbrenner (Bronfenbrenner, 1994), the chronosystem captures the events that change the students' lives. That event was the beginning of some participants' relationship with the phone. Part of the chronosystem is the socioeconomic factor and a second child. Those factors that affect child development were determinant in their perception of their phone's use in my students-participants.

A divorce introduces the phone as part of a new stage in their lives (Rose & Tudge, 2013). Out of the six participants who got the phone before middle school, four of them, Sara, Latisha, Carla, and Nancy, received a phone when their parents divorced. A divorce or separation seems to be a decisive factor that influences the parents' decision. Parents want to have closer contact with their children when they do not see them every day.

That conclusion is anticipated by personal experience. Even though current literature does not specify parent- children connection in case of divorce or separation as one reason to provide a phone to the kids, some studies include peace of mind and security, which also implies connection in case of emergencies (NationWideChildren, 2018).

Digisystem. Parents and Kids Disconnection, New Careers and New Trends

Even strict parental controls cannot fully control the world of experiences that influences child development when children are connected to the Internet. Aisha Walker (2015) proposes that the digisystem adds a new component to the ecological system, which greatly influences child development from the microsystem to the exosystem. According to Walker (2015), on the one hand, the child is in control of the content of his or her influence during many hours in the preteen and teen stages, a stark reality which limits the parents' role of choosing and mediating the values that guide teenage experiences. On the other hand, Walker admits that the algorithms that filter incoming material do not expand their experiences, but just reinforce their existing beliefs.

The digisystem is a main factor of social change in terms of new social interaction, including how to make new friends and how to communicate with them.

Parents and Students in their Own Digisystems. The parents of the four participants that set strict boundaries are a rarity. Many parents have less time to model, guide, talk with and influence their children's lives. They live absorbed in their own digisystem (Walker, 2015). Those worlds are not interchangeable and not normally shared between generations. Parents are accustomed to checking their work emails, shopping online, or participating in social media. It is their habit (Adler, 2017), and as a consequence, they are less likely to be a model (Cash, 2008). Even if parents have the time, they have to fight against the resistance of their students' digisystem. Kids are more compelled to fulfill the urge to catch up with the latest videos that they receive on their screens from their peers, or from their favorite bloggers. They find those activities more relevant than participating in bonding activities with the adults around them. I remember many conversations with parents when my kids were in middle school about the stress we had in planning continuous outside-of -the-house activities, so they would not get into

Minecraft – a very addictive video game on the computer. Students felt bored when they were not on the screen and had less patience to play such games as chess, cards, read or just kick a ball outside. I felt that one of the most important parts of parenting was finding after school activities, many of them expensive, to get kids away from the screens.

In the case of the other participants who received the phone in elementary school, or middle school without restrictions, they accepted that they are heavy users, and that the telephone is very important for them. One exception is Riley, who spent many hours in a ballet studio, and for that reason, she has less free time in which to get hooked on social media. She grew up with a responsible use of the phone and values face to face conversation above phones.

Dreams of Becoming a Social Media Influencer. Crystal is one example of the digisystem, the new dimension that crosses all levels of the ecological system. Crystal has reasons to think that she can make a career out of her social media accounts, as most of her life has revolved around the possibilities that her smartphone has given her. And she is not the only one. According to *Digitalist Magazine*, "In the last few years, Instagram has created new sub-genres, careers, and businesses and revolutionized the way people see businesses. Instagram is a strong force that marketers can't afford to ignore anymore" (Burns, 2019). In addition, a recent survey also revealed that today's children are three times more likely to aspire to be a YouTuber (29%) than an astronaut (11%) (The Lego Group, 2019). The children are still in the center of the circle according to Walker (2015), but they are not passive consumers; they are active creators of their own selves and the world with which they interact.

Texting versus Talking. Something in common among all the participants is the preference for texting versus calling. Only Dhara, the more social participant, prefers talking to text. It is more convenient, and practical. The level of mental concentration and awareness that

oral conversations require is higher than texting at the user's pace (Turkle, 2016). Another reason is the possibility to multitask, and the i-generation thinks that they are big multitaskers (Twenge, 2011). Texters interchange that activity with doing homework, checking Instagram, watching a movie, playing video games, or any other or non-intense physical activity. This multitask component that millennials share is under criticism for falsely claiming that it makes people have the perception of being more productive (Beaton, 2017; Howe, 2010; Lee, 2017). The increased use of smartphones in younger generations does not anticipate a reduction of such behavior.

Not long ago, next to the non-smoking signs on train cars, there was a sign advising passengers to lower their voices or to use the area between the cars to talk on their cell phones. After people behaved in socially inappropriate ways, and passengers complained about the annoyance of phone usage, new phone etiquette had to be developed. With the increased use of texting, there is no need for those signs. Everybody is fully concentrated and silent, heads down and on their mobile devices. Nevertheless, the proper use of smartphones in public, no matter how annoying can be, is missing. There is a timid effort to "control" smartphone use in some places of business, such as while at a clerk's window or at the cash registers of some stores. However, the more everyday activities are becoming technologically dependent, the more tolerant we are becoming to the others who may have similar behavior as ours.

Exosystem. Influence of the Social Trends and Values

Society imposes values, trends, and cultural paradigms that, according to the biological system (Bronfenbrenner, 1979), surround the micro- and mesosystem affecting the child's development. In this case, these influences about the choice of one or another brand of smartphone have emotionally affected two of my participants.

iPhones versus Androids. Latisha was not the only one who suffered peer pressure for not having an iPhone. Carla also showed her angry dislike about that issue. She had an Android in middle school because her parents did not have money to afford an expensive phone. Carla noticed that people looked at her phone and her with an attitude of superiority. She believes that she felt excluded from group chats where messages were in green instead of blue bubbles, as seen in an iPhone group chat. Carla thinks that this attitude is related to economic status and that students like to pretend they have that status.

The perceived status related to the phone brand is not an issue exclusive to Latisha or Carla's high school. A recent survey indicated that 82% of American teenagers prefer the iPhone (Leswinka, 2018), and a report by the National Bureau of Economic Research, indicated that owning an apple is a symbol of wealth (Bertrand, & Kamenica, 2018). We cannot assume that 82% of American teenagers are in high income homes. This research suggests that many mid-low income parents are compromising other more basic necessities in deference to their child's social status, or to pretend to belong to a different social class. The social pressure that Latisha and Carla felt when they used a Samsung is a general feeling among mid and lower-class teenagers. Phones are now a better determiner of social class than are high profile label clothes. "Pretending" to be in a higher social class can be troubling during the stage of developing self-confidence and social acceptance.

Mesosystem: School and Home Microsystems. Smartphones in the Participants' Academic Life, Smartphone Policy Implementation and Teachers' and Students' Reactions

The mesosystem is the interaction between two microsystems, in this case, school and home (Bronfenbrenner, 1979). This interaction is very important, particularly in the early stages of a child's life. In this case, the relationship with their phones at school is an extension of their

phone usage at home. In addition, school and home are bound with their own digisystem, that is, the digital lives that their digital devices have provided them.

Smartphone in School, but Outside the Classroom

The findings show that the phone is changing the relationship among friends, or acquaintances (Nagin, 2012; Twenge 2001, 2016). For my students' generation, the i-generation, it is very positive to have a handy tool to maintain a comfort zone in social settings, such as the school cafeteria. At the cafeteria, freshmen are actively on their phones; they do not make any effort to meet new people, introduce themselves to new freshmen and start a conversation, they are on their own phone, probably watching Instagram. This finding is corroborated by other studies made in other schools (Chavier, 2016).

Nevertheless, they may be making friends during that cafeteria time, just not in person. As my participants check their Instagram account, names of other young people show up on the screen. In that case, they follow each other, and they start establishing a "relationship," where they share pictures and like them. Some of them, as Lucas says, are friends of friends', but they probably will eventually meet in person, as they are in the same school. That way, they know of each other's existence before the meet, so they do not have to introduce themselves. That is why the average number of followers on Instagram is 600 in a student. Students who want to keep a small and close circle of friends have 200, which still might seem a high number. As we mentioned in Stephen's case, if someone has less than 100 followers, they are considered losers. The number of followers in the Social Network Sites such as Instagram is very important and related with popularity and self-esteem (Dumas et al. 2020; Sheldon et al., 2019). Similar to the indiscretion of asking someone about the money he or she makes in the adult world, it is

inappropriate among young people to ask how many followers she or he has. In addition, teenagers consider it “not cool” to show off how many followers they have.

Smartphone in the Students’ Academic Life

For academic use - not for entertainment or connection - the students-participants use their smartphones to check school emails, reminders, and grades. In their school account emails, they get teachers’ emails, notifications from dozens of educational websites to which they need to sign up, and a courtesy email from Google classroom every time one of their eight teachers posts homework or announces a test. This system surfaces some questions: What if there are students who do not have a smartphone for economic reasons? What if there are parents who strongly oppose their children having a smartphone? Are those reminders encouraging our students to depend on technology instead of helping to develop organizational skills? As Clement and Miles (2018) point out, educators have been pushed so much and so fast into educational technology, that we missed reflecting on whether this is the best for our students.

The interconnection between family and school is evident when parents are messaging their kids during school time. My participants check their phones during the five minutes break mostly for parents’ messages. Even those parents who lay down strict rules at home of phone use, get caught by the efficacy of an instant message versus calling the office for a notification – something I used to do during middle school, with my second son. This may be why administration may not be interested in students’ use of phones: it makes the administrators lives easier. The truth is that mothers and fathers have a chance to be more involved in their children’s school life. Now they can also receive reminders, or check Google classroom when asking the teachers what her or his child has missed. The downside is that with these digital Apps, grades may have accentuated the importance of grades over learning. That debate of the benefits and

the risks of smartphones related to academic life is a hot topic in educational and health online magazines (Kowalski, 2016; Miller, 2019).

Disconnection between Family and School. Teachers who use apps like PowerSchool to post grades in real time and give reminders to help the students keep on track teach act convincing arguments for students to have their parents buy them the prized cell phone. Here we see an evident disconnection between family/ community and school life (Ravitch, 2017). This lack of debate produces a mixed message for the students: on the one hand, teachers and administrators complain about the student addiction to phones which results in losing the ability to concentrate, think, reflect, etc. (Miles & Clement, 2017). At the same time the same adults are convinced that having a phone and having the kids checking their reminders or grades at all times is a positive tool.

Smartphone Policy Implementation

The introduction of the smartphones in schools in 2012 in the U.S. was followed by recommendations of strict and detailed regulation regarding smartphone use (Osborne, 2012; "Rules for cell phones", 2016). Nevertheless, in the high school of my study, strict regulations started five years after the School Board approved and implemented the Bring Your Own Device program in the district.

The data suggests that the new policy is not working completely on the teachers' end. Administrative support is indispensable to enforce any policy ("Rules for cell phones" 2016). In OaksLand High School, the administration stopped considering the enforcing of the rule a priority in their agenda; therefore half of the teachers fail to adhere to the policy the second year after the implementation.

Distraction is an issue in schools where smartphones are allowed (Chou et al., 2012). The general consensus of my participants regarding the policy is that students are less distracted without the phones, which corroborate the literature and my expectations. Another reason for the teacher not to follow the rule is that as the number of non-instructional uses decreased after the new rule started, teachers may start to avoid the extra work of reminding students to put the phone in the phone-tree.

Literature informs that it is the level of maturity and responsibility of the children, even more than the age, what determines the proper use of the phones (Chen, 2016). Difficult classes, especially AP or honor track, are normally populated by responsible students who embrace the challenge and are concerned with having a competitive academic record and a high GPA. Those who teach these classes rely more on the common sense of the students not to get distracted, and therefore they do not enforce the policy.

Another theme in the findings is boredom. Students use their phones when classes are boring, which corroborates the literature of endless possibilities of using the Internet and screens in the classrooms to motivate students. Unfortunately, the allure of using the internet, due to the attractiveness of visual design or the most amusing gaming as instructional tools offered in a competitive market, have sometimes overshadowed the contents (Ravitch, 2016), impede developing skills to cope with boredom, (Dunckley, 2016) and diminish the possibility of creative moments (Steiner-Adair, 2013). Teachers use laptops on a daily basis and students spend part of the class typing or clicking, for learning, for practice, for testing. There is a certain peace of mind in teachers when they are incorporating technology and they see the students having fun, without questioning what the educational benefit is for the kids (Clemens and Miles, 2017).

Finally, the students' perceptions of the phone policy are anticipated from the findings in the telephone use at home. Participants, who are very critical of phone overuse by their classmates, are also very critical of the one or two students who sneak the phone out, and relate that attitude with being irresponsible, immature or not caring enough about grades. Students who need to be always in connection, it is hard having the phone out of reach, for security reasons, and so she does not put it in the "phone-tree".

Two Exosystems. Generation Gap

According to the review of literature, the differences between millennials, i-generation and the previous generation, like mine, present the widest gap since generations started to be a subject of study (Twenge, 2017). This fact inspired me to include in this research the participants' perception of their lives compared to their elders, in terms of the influence that their digital devices exerted over them. This gap is worthy of being narrowed, and with an inquiring effort from adults in charge of their education I believe it could be narrowed. What are adults missing about who our high schoolers are? Who are our students, and how can we better connect with them? What is the quality of information they are privately consuming in high quantities that adults are not aware of?

When I asked the participants these questions, I noticed the trouble they had elaborating their answers: they doubted, corrected and contradicted themselves, paused and took more time to answer than any other question. They may have felt insecure about knowing the differences, had never thought about them before, or were very careful not to express negative comments about their parents or adults while talking to me. In addition, it may have involved questioning their own identity at a critical stage in their psychological development, such

as: how much do I agree with the way my parents speak or act, or what do they want me to be. Do I want to be like them; how do people see me; how do I want my friends to see me?

The participants shared many differences from their parents' lives in relation to being raised with digital technology as part of their lives, or not; some differences were positive and others were negative. In a way, what the students hear from their parents is mostly positive, in terms of having a community in the neighborhood where they were able to walk to friends' houses, and just "show up." At the same time, parents speak about their lives in negative terms compared with the world of their children, mainly in situations where they are frustrated about their kids not listening to them, or over-using their phones. Still, when imagining her parents' world, Dhara quickly realized the downside of social media in terms of the extra drama that this platform allows. Social media allows being more aggressive behind the anonymity shield. Related to the difference in communicating online or in person, Latisha also praised her parents' generation for having much better communication skills, at least face to face, which is corroborated by many studies (Turkle, 2015; Dunckley, 2015).

On the positive influences of being raised in the digital era, one common theme was that, thanks to the Internet, they perceived themselves as better informed than their parents were at their age and that they are more open minded. They acknowledged as positive that, even if they do not want to get the news, news just pops up on their screen. The participants' answers regarding this topic suggest that they are not aware that platforms tailor their news feed based on their online behavior, giving them the false feeling of being very well informed. Research about smartphone use is also related to the power that technological companies who design the social media platforms, purposely or not, have given the system to disseminate unchecked nonfactual information (Kellner & Share, 2007). Apart from being programmed to be potentially addictive

(Charman- Anderson, 2009), the platforms allow that users perpetuate their own bias every time that news, many of them fabricated following a specific agenda, pop up in the screens (Granados, 2016). That characteristic of social media is already influencing democracy in a negative way, making an education that includes social media literacy more important than ever (Kellner & Share, 2007).

Parents may be more aware of the huge differences with both generations. As a consequence they have harder decisions to make. For one, it is they who decide to give and finance phone access to their kids, following the social impulses they are also immersed in, without enough information of the downside for their kids and even for themselves. Sadly, once they face the negative consequences, parents, as well are their kids, are left alone. In most cases, they may feel isolated from the strong support of a community that helps to maintain their values, or at least some neighborhood friends, as Lucas and Stephen's families had.

On the other hand parents and adults in general, are also deeply submerged in the digital world, and many have lost the perspective of distance, especially younger parents, and they are as trapped as their children.

CHAPTER 7

CONCLUSION

My research started with the purpose of analyzing the perception that teenagers have of their smartphone use for a better understanding of my students' lives and minds. I knew smartphones were vitally important for them and have to be considered in any study of youth today. My second goal was to analyze how the students – participants perceive of a new smartphone policy implemented in our school. The policy is intended to minimize the negative impact of digital devices in the classrooms and I was interested to know if it had modified smartphone use.

My first contribution to this qualitative research is this: that the different and unique relationship of my participants and their phones are highly determined by the experiences of their own lives and the adults in their lives. This includes their upbringing, their parents' social and educational values, parental marital status and parent-child relationships, phone policies for their siblings and friends, and the community where they live. My research shows that the success of a healthy relationship with these digital devices, as useful as they are addictive, depends on the education and guidance students receive when he or she is first given a smartphone. This finding is consistent with the existing scholarly literature (Dunckley, 2015; Heitner, 2016; Turkle, 2013). Although researchers have not agreed on a perfect age at which to give a smartphone to children (Brooks, 2018), the conclusion I have drawn from my research is that students who are given a smartphone with restrictions after middle school had developed much more control over the use of their devices. If we follow the experts about a healthy development in a teenager's life, such as developing face-to-face social skills (Turkle, 2011), mental well-being (Heitner, 2016), sense of spirituality (Hart & Hart, 2013), or physical exercise and contact with nature (Steiner-Adair,

2013), that two–year difference in access to a smartphone before entering high school, was key to developing a much healthier relationship with the phone. Based on the experiences of half of my student-participants, the entrance in high school would be considered the "magical age" for success in avoiding risks of addiction. I have also found out that dedicated parenting based on good communication, and offering alternative activities, tended to be supported and appreciated by their children when they are grown up.

Another conclusion of my research is the difficulty for the parents to maintain their parental values regarding the best age to give their children their first smartphones. Comparative research done by Pew Research from 2015 to 2019 informs us that the age of accessing the phones have increased exponentially (Pew Research, 2015, 2019). My participants' perceptions corroborated that trend. According to their experiences, the younger the students are, the more exposed to technology they are, and the more "normally" their lives revolve around their phones. As a consequence, the difference between them and their siblings who are three of four years younger constitute an increased problematic use of phones. As years go by, and our lives depend more and more on digital devices, parents, and teachers as well, may have less and less perspective, desire, knowledge, or even the authority to model or guide their children through this unprecedented time in our history.

Another conclusion of my research, possibly on a more emotional and personal level, is that the data from my participants provides a narration of their individuality and identity which appears beyond the numerical figures. That is why, apart from categorizing the themes of my findings, I considered it meaningful and illustrative to include the direct voices of the participants in a more narrative style in the student feature section. At the end of the interview, all my participants described their interview experience as enjoyable, meaningful, and

emotionally positive. As a researcher, I noticed that our typical advisor-advisee relationship changed to become much more personal, sincere, and amicable. I also noticed that they also became closer to each other, as if they knew what was the experience that his classmate went through with my interview, and developed a kind of connection or complicity.

Before this study, I was part of the group of outsiders who have observed the changes in the digital era, and in addition, I was loaded with readings that reinforced the negative side of screens used in the millennials and i-Gens population. As numerical data became more and more mainstream media and made some hot headlines, the observations of parents and teachers of millennials and the i-generation in terms of an increased addiction and mental and social problems were confirmed. With that landscape, it is normal to make generalizations. Nevertheless, there is a risk when adults, outside observers, categorize our students as smartphone-addicted, with all the negative connotations that this term implies. That risk is to create a singular mindset. Those generalizations that receive continuous feedback create a boundary between them and us. Understanding, not only knowing, the perception of ten teenagers towards their smartphone use in their academic and personal lives has provided me as an educator a much deeper connection with them, positioning me beyond the clichés.

Significance to Curriculum Studies

Normalizing a phenomenon that arrived and spread so rapidly may work as an aid in adapting to the idea we will not return to a pre-digital era. Nevertheless, many aspects of the new normal are problematic. For example, the idea that students constantly have a phone in their hands without any relevant outrage from the community: the communities' efforts to support parents to take the phones away from kids' rooms is punctual, or vanishing, and I speak from my own experience. In addition, related to curriculum studies the hegemonic power has the control

of the information that we will be receiving, leaving little space to access different opinions or contents. The change that teachers my age have experienced is that the 21st century is becoming a more media-saturated, technologically dependent, and globally connected world (Kellner & Share, 2007). In this new reality, the online environment within which most students are immersed, the highly constructed visual images, complex sound arrangements, and multiple media formats organize, shape, and disseminate information, ideas, and values that are creating a powerful, and questionable public pedagogy. This is also an ecosystem that is constantly tracking and selling our communications, movements and personal data (Kellner & Share, 2019).

In addition, with the use of computers and the web for education being trumpeted and exaggerated for years, teachers could not have imagined the extent to which - especially with the advent of smartphones - the digital world would subsume us and utterly addict us. The consequent problems of the escalating role of online media, particularly social media, have become increasingly obvious. On top of the downside of the negative effects mentioned above, the inability to distinguish legitimate from pervasive, manipulative, unreliable and often outright false information in social media should be contemplated from a curriculum studies perspective. There is thus an urgent need to develop an overlooked field in educational research that focuses on how to prepare i-generation students to be critical, to lead, and to reverse the current deep level of relativism and the "post truth" political environment it has fomented. Unfortunately, that power has been used either to perpetuate bias and create generally accepted opinions and values, or to construct "fake-news" for political or ideological reasons. These biases are especially dangerous when messages are not questioned by the transparent social construction of the representations, and the dominant group does the majority of the representation, as is the case with multinational corporate mass media (Kellner & Share, 2007).

We live in a multimedia age where the majority of information people receive comes less often from print sources and more typically from highly constructed visual images, complex sound arrangements, and multiple media formats (Kellner, 1995). Exercising principles of cultural studies and critical pedagogy is more important than ever, as these approaches offer avenues for students to think critically through praxis, to be aware how to learn to read texts, the word, and the world (Freire, 1988) and to be empowered to discern the veracity of the information they constantly consume. Students from middle school through college are unable to effectively judge the credibility of news and information read online (Donald, 2016).

My contribution from a curriculum studies standpoint is that the concept of what is considered "normal," needs to be contested in the educational field in relation to the way we consume and produce information in the digital era. This concept of "normal" has already been problematized by cultural studies and critical pedagogy as related to a hegemonic ideology associated with power and control (Freire, 1996; Giroux, 1988; hooks, 1994). The counter-hegemonic curriculum needs to resuscitate and create a new debate in the digital context, because it has made the education community lose perspective about the "new" hegemonic powers that are controlling the platforms of global exchange of communication and content.

Recommendations for Departments of Education, Curriculum Developers and Policy Makers

I strongly recommend that educational researchers and educational technology departments focus their efforts into introducing critical media literacy as early as elementary school curriculum as a necessary force to save the future of democracy. They need look no further than the 2016 American general elections, so very recent in their own lives, demonstrating how public opinion can be relatively easily manipulated through social media.

Critical media literacy incorporated in educational institutions is more important than ever, as it will provide not only information about the dark side of social media, but the tools to develop awareness and empower students. Learning how to question, problematize, analyze, maneuver and produce in this cultural environment are essential requirements for critical thinking, educated citizens, and real participatory democracy.

My research also corroborates my premise of the disconnection between parents and children. Even though in families with good communication, students feel that the information that their parents are trying to share as part of their parenting role is boring and meaningless, as "they already knew." The connection with the outside world in adolescence translates into amplifying the sense of "I know it all" that is typical of that developing stage. This disconnection is interconnected with another conclusion from the analysis of the data, that is, the overrated world of entertainment.

One of the most recurrent themes in my findings is related to entertainment (boring parents, funny videos, funny posts, memes, it is boring, share a funny video, people want to be entertained, phone out when in boring classes). The Internet is oversaturated with offers to fulfill this entertainment call. It explains why funny YouTubers or TikTok are increasingly popular, and why kids cannot get their faces away from their phones while parents are trying to talk to them.

That natural inclination of being "entertained" has been extremely profitable for the entertainment industry, with the downside of covering other inclinations such as effort, work ethics, or pastime choices that are more intellectually engaging, such as chess or reading to effortless distraction. The danger of being constantly entertained, in my opinion, is one of the downsides of the digital age, and the most dangerous in terms of freedom and advance and social

progress. History shows that an entertained population is a sleeping population to allow hegemonic oligarchy to control and take decisions that will affect the population's lives for generations (Goldsworthy, 2009). In addition, the commercials and selling opportunities that the entertainment sites offer are extremely good news for the economic order of the last decades, neoliberalism, the platform owners (Google, Facebook, YouTube, Instagram) and more recently, surveillance capitalism (Zuboff, 2020).

An important conclusion of my research is that the implementation of a strong smartphone policy has improved class management and concentration. It allows teachers to dedicate their time to teach, instead of reminding students to put the phone away. In contrast with the policy in the district, the policy of this case study focuses on new regulations that include the ability to collect the phone from the students. Even though the student's do not like to be separated from their phones, and be told what to do with an object that has become essential part of their lives, the fear to lose the phone during the day, or even having the administration to call parents to retrieve it in case of a third offense, made students more accountable for the smartphone misuse in school. According to my participants, the new policy is a deterrent to use the phone during class, preventing distraction; in the few cases that they have witnessed the teacher confiscating the phone, they have never seen the same person repeating the offense. For those reasons, I conclude that this policy is recommendable for other high schools.

On the other hand, I recommend a guided discussion with students that addresses the problem of Internet addiction among youth and the downside of social media. The opinions of the students should be considered as essential input for the creation of better long-term solutions and practices, as well as a more meaningful and less punishment-based smartphone policy.

Limitations and Future Research

I have to add here that due to the specific characteristic of this school in terms of demographics, the low number of free lunches and parents' education, this case study does not represent the majority of the student population of the district, with a much larger number of free lunches. Traditionally those high schools have numerous cases of discipline problems. This fact, instead of diminishing the importance of this conclusion, is an incentive to export this policy to other schools. The difference between policies is the administrative support to collect the phones, and intervention in case of more than one offense. Precisely in those schools, teachers should have the authority to collect the phone when used for non-instructional purposes from the students. In addition to the benefits in terms of increase of attention, class time is the only time in the day when the youth can experience what a real contact, the here and now, and even experience getting bored, making it even more meaningful to adopt the policy subject of my research.

Finally, related to demographics, I found a venue of future research derived from the analysis that it is worthy to follow for a better understanding of how the digital devices are serving different populations in different ways. Latisha and Crystal, the only two African Americans in the study are the most attached to their phones, possibly due to a solitary personality or insecurity. In both cases, their being middle-class Black students in a predominantly white school may have made them more dependent on a social life online versus face-to-face. Latisha said that she communicated during the day with her African American friend from middle school, as her only friend in the school was Crystal. Crystal, who is very quiet, enjoys "finding" on-line friends with her Instagram accounts. In general, Latino and Black

communities spend more time on social media than Caucasian communities (Media Melting Pot, 2019). Although my two African American participants may not follow in that category because they enjoy a middle class status, I believe that schools where the population is majority Black and Latino, mostly lower income families, the attachment to their cellphones is maybe not a discipline issue, but a "need" issue. Populations that have suffered the oppression, mass incarceration, persecution, and struggle to succeed in having a healthy, successful and safe life, may have more inclination to be "hooked" on a virtual space full of entertainment as a form of escapism and healing, what has referred to smartphones as pacifiers (Burke, 2017; Cowen, 2020; Pham, 2020).

Educators, social workers, and policy makers should be aware of that: an already marginal population is more prone to suffer the downside of the smartphone addictions; therefore their responsibility in changing this trend is higher. Further research in this area would be very advisable.

EPILOGUE

My inspiration for this research started with my now 18 year's old son's addiction to technology, the strain it has caused in our relationship, and my need to know him and reconnect with him. I found out that through my research for this thesis my intuition was corroborated. Unfortunately, acquiring a solid knowledge about the downside of phone overuse did not help us to reconnect. It made me more sensitive and emotionally involved in discipline issues relating to my son's overuse, causing me more sources of stress and I found myself floundering. Part of this was that because I was alone in the battle, without any support of my former husband. He did not share the same parental values related to this problem. On the contrary, he was a model for the opposite of what I believed in.

This study did help me realize that the struggle of having lost my child to the phone was, in fact, a sentiment of guilt. Unconsciously I felt guilty for giving in to my son's demand to have a smartphone at the age of 12. After all, we parents are the main enablers.

During these past two years of this personal and academic journey, I managed to accept the fear and the guilt, to forgive myself and, overall, to forgive and accept my son the way he is. I also asked for his forgiveness; eventually, I found peace and stopped fighting his use of technology.

My son is now 18. I realize how blessed he is with his natural intelligence. He is adept and moves his fingers quickly over a screen in his hand like an eternal tic, but he has also matured into being more selective in his investment of time online, and he has acquired important knowledge regarding his career choice as a computer engineer. I compromised and helped him discover other activities to find new passions. I was not always successful, but he started to acknowledge and appreciate my efforts. Once he rediscovered his non-judgmental

mother, he also learned that she might have some important points about the negative consequences of screen overuse.

As for my second son, his life as a phone-user started halfway through my research. His father gave him his phone when he was 14 and a half years old for the same reason why many of my participants got theirs: to be in contact with the parents when there was a divorce. My son is 15 now, and he is still not allowed to have Instagram. Nevertheless, no matter how much he promised not to be on his phone too much, and never be "like his brother," he followed the new trend of non-stop watching YouTube videos every second of non-activity time. His good habit of meditating, thinking, or enjoying quiet moments are disappearing. Still, I see the huge difference between the two brothers because one started two years earlier than the other. Those two years away from having endless entertainment in his pocket were crucial. In addition, my younger son is an athlete, and his habit of playing outside is now a part of his life. I know that this will help him in the future to be less engaged and dependent on social media.

Something that I learned and which is different from what I imagined, is that the difference in smartphone use between my sons has much to do with their personalities. My older son has always been naturally introverted, absent-minded, and easily distracted. The smartphone has just accentuated these features of his personality. The younger is extroverted and loves outdoor activities. His phone is helping him to arrange playdates and to become an expert in YouTube sport videos. I have concluded that their phones have become both extensions and amplifiers of their personalities.

If authentic research is inspired by a personal as well as social interest in a given phenomenon, this was certainly my case.

A change took place in me during the process of investigation. Originally I had thought I would study worry caused by the sudden appearance of smartphones in children's hands. Throughout my research this has been my goal: to understand my own and other people's worry about smartphone use. Somehow, the end of this research coincides with the end of my anxiety. Now that I understand better smartphone use in the lives of young people, I have come to terms with my own sons and my own phone use.

Although it all seems like long ago, all this has happened in a relatively short time. Perhaps what I now feel is the same loss of a sense of time that you get when you are googling or watching streaming TV shows. Something seems to have affected my memories of my past. I miss conversations with my friends and colleagues about this phenomenon. Even though I was normally the most outspoken and passionate, I always met engaged listeners who would celebrate my desire to write about phone addiction in youth, and encourage me to move forward and do the research. Now those conversations are distant nostalgia. We do not have those kinds of conversations anymore. The feeling I now have is that the topic has become commonplace, a lost battle, a waste of energy.

As we have all succumbed to that enchanting online world, and somehow the convenience and practicality, in many cases superficial, have overshadowed the problem, as an inevitable lesser evil for young people and for ourselves, hooked on smartphones as we are. The convenience and overrated entertainment was a wall too high to climb. The new "pandemia" order and new normal, due to COVID-19, has only accelerated the perception of necessity in the digital world. We are trapped by a new life dependency on the phone, even to switch off lights in our homes. Online work is the only way to make a living, pay bills, or graduate during the pandemic.

I will always remain alert to the latest publication of what the digital era has evolved into, that is, how the monopoly of Facebook, Amazon, or Google are controlling how we think above all, and how we think, see, consume, and, ultimately, vote. I will be vigilant for my sake and for the sake of a democratic future for my sons and students. I more strongly than ever believe it is my job to unveil and surface a curriculum that reveals the consequence of a slavery-driven economy, or the intrinsic social injustice of colonialist pedagogy. To those topics that were never in the textbooks, we have to add the new economy to our smartphones. A serious overview of what this technology really means for society is missing: not found in textbooks, not found in mainstream media. I deeply thank the academic journey of this research for having equipped me with a new vision for my responsibility as a teacher, from the concern of the downside of overused digital devices, to the downside of the potential for surveillance capitalism.

This research has also given me a personal and loving relationship with my advisees. These young adults that are on their way to college, who are relying more and more on digital technology, have also taught me that their individuality and their biographies play a major role in their relationships with their devices. Smartphones are tools that amplify or diminish their aspirations. The boundaries these students have learned to set up for their own use give me peace of mind.

Finally, some thought for me. After this research is done, it will be time to focus on myself and move forward in a new stage. During the writing of this work, I moved out and started a new home from scratch. I raised a rose and a cactus garden and I created peaceful and happy spaces that invite contemplation, solitude, and long conversations with dear friends. I am ready to enjoy the pleasure to be fully aware of how wonderful it is to be fully alive. And of

course, it is my greatest ambition to enjoy walks with my sons, and going out to dinner with them, and that when we go out, phones will be left behind in the house.

REFERENCES

Adams, C. (2015). Subject matters of digital technology and computing science curriculum. In He, M.F., Schultz, B., Schubert, W.H., (Eds.). *The Sage guide to curriculum in education*. Sage Publications.

Alter, A. (2017). *Irresistible. The rise of addictive technology and the business to keep us Hooked*. Penguin.

Amatenstein, S. (n.d). *Not So Social Media: How Social Media Increases Loneliness*. Psycom. https://www.psycom.net/how-social-media-increases-loneliness/

Anderson, G. (1993). *Fundamentals of educational research*. Falmer Press.

Anderson, J., & Rainie, L. (2020). *Many tech experts say digital disruption will hurt democracy*. Pew Research. https://www.pewresearch.org/internet/2020/02/2/

Anderson, M. & Jiang, J. (2018, May 31). Teens, social media & technology. https://www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018/

AllGov (2018). *Meet your government.* http://www.allgov.com/officials/shelton-james?officialid=29255

Apple Inc. (2008, Aug. 11). *Apple classrooms of tomorrow—Today, learning in the 21st Century*. http://cbl.digitalpromise.org

Auxier, B., Anderson, M., Perrin, A. & Turner, E. (2020, July 28). *Parenting children in the age of the screens.* Pew Research. https://www.pewresearch.org/internet/2020/07/28/parenting-children-in-the-age-of-screens/

Beard, A. (2020, March 19). *Can computers ever replace the classroom*. The Guardian. https://www.theguardian.com/technology/2020/mar/19/can-computers-ever-replace-the-classroom.

Bertrand, E. & Kamenica, B. (2018, June) *Coming apart? Cultural distances in the United State over time.* National Bureau of Economic Research. https://www.nber.org/papers/w24771#fromrss

Brahms, Y. (2019). *Philosophy of Post-truth.* The Institute for National Security Studies. https://www.inss.org.il/publication/philosophy-of-post-truth/#_edn2

Brendtro, L. (2006). *The Vision of Bronfenbrenner, adults who are crazy about kids.* CYC-net https://www.cyc-net.org/cyc-online/cyconline-nov2010-brendtro.html

Bronfenbrenner, U. (1977). *Toward an experimental ecology of human development*. American Psychologist, 32(7), 513.

Bronfenbrenner, U. (1979, a). *The ecology of human development: Experiments in nature and design. Cambridge*. Harvard University Press.

Bronfenbrenner, U. (1995). Developmental Ecology through Space and Time: A future Perspective. In Moen, P., et al. (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 619-647). American Psychological Association.

Bronfenbrenner, U. (1995b*).* Ecological models of human development. In. T. Husen & T. N. Postlethwaithe (Eds.), *International encyclopedia of education.* Oxford. Pergamon Press. 3 1643-1647.

Bronfenbrenner, U. (1999). Environments in developmental perspective: Theoretical and operational models. In S. L. Friedman & T. D. Wachs (Eds.), *Measuring environment*

across the life span: Emerging methods and concepts (p. 3–28). American Psychological Association. org/10.1037/10317-001

Brooks, M. (2018, October 30). *At what age should I get my child a smartphone?It's a big decision to get a child a smartphone. What's the right age?* Psychology Today. https://www.psychologytoday.com/us/blog/tech-happy-life/201810/what-age-should-i-get-my-child-smartphone.

Brown, D. (2006, March). *Can Instructional Technology Enhance the Way we Teach Students and teachers?* Journal of computing in Higher Education. https://link.springer.com/article/10.1007/BF03032701

Bogdan – Martin, D. (2019). *Measuring digital development.* International cooperation on telecommunication. https://itu.foleon.com/itu/measuring-digital-development/foreword/

Bourgonjon, J., Valcke, M., Soetaert, R., & Schellens,T. (2009). *Students' perceptions about the use of video games in the classroom.* Science Direct. https://doi.org/10.1016/j.compedu.2009.10.022

Burke, J. (n.d*). It's Time to admit that screens are just digital pacifiers.* The Federalist. https://thefederalist.c om/2017/05/25/time-admit-screens-just-digital-pacifiers/

Campbell, S. (2006). *Perceptions of mobile phone in college classrooms: Ringing, cheating, and classroom policies*. Taylor & Francis online. https://www.tandfonline.com/doi/abs/10.1080/03634520600748573

Caimcross, S. & Mannion, M. (2001). *Interactive multimedia and learning: realizing the benefits.* LeanTechLib, 38 (2). https://www.learntechlib.org/p/91391/

Carr, N. (2008, July-August). *Is google making us stupid?* The Atlantic. https://www.theatlantic.com.

Carr, N. (2010). *The shallows: What the internet is doing to our brains*. W.W. Norton and Company.

Carr, N. (2015). *The glass cage*. New York: W.W. Norton and Company.

Carter, B., Rees, P., Hale, L., Bhattacharjee, D., & Paradkar, M. S. (2016). *Association between portable screen-based media device access or use and sleep outcomes: A systematic review and meta-analysis*. JAMA Pediatrics, 170(12), 1202–1208. https://doi.org/10.1001/ jamapediatrics.2016.2341.

Cash, H. (2008). *Video games & your kids: How parents stay in control.* Issues Press.

Castro, C., & Garcia, M. (2008, February). *Por qué prohibir los móviles en clase no es la solución*. El Independiente. https://www.elindependiente.com

Chadband, E. (2012, July 19). *Should Schools Embrace "Bring Your Own Device"?* NeaToday. http://neatoday.org

Chapman, G. & Pellicane, A. (2014). *Growing up social: Raising relational kids in a screen driven world.* Northfield Publishing.

Chapman, G. & Pellicane, A. (2017). *Calm, cool, and connected: 5 digital habits for a more balanced life.* Moody Publishers.

Charman-Anderson, S. (2009). Seeking Addiction: the Role of Dopamine in Social Media. *Computer Weekly*. https://www.computerweekly.com/blog/The-Social-Enterprise/The-role-of-dopamine-in-social-media

Chavier, K. (2016, April 7) *Escaping the smartphone comfort zone*. Waghost Writer https://waghostwriter.com/44338/uncategorized/escaping-the-smartphone-comfort-zone/

Chen Y.F. (2008). *University students' Internet use and its relationships with academic performance, interpersonal relationships, psychosocial adjustment, and self-evaluation.* Cyberpsychology & Behavior. 11, 467-469.

Children and Cell Phones: Weighing the Risks and Benefits.(n.d) InfluenCenter. http://blog.influence-central.com/kids-tech-the-evolution-of-todays-digital-natives/

Chou, C.C., Block, L., & Jesness, R. (2012). *A case study of mobile learning pilot project in K-12 schools.* Journal of Educational Technology Development and Exchange, 5(2), 11-26.

Cienfuentes, P. (2019) *Uso de los teléfonos celulares en los colegios.* Legislación comparada. Biblioteca del Congreso Nacional de Chile. https://obtienearchivo.bcn.cl/obtienearchivo?id=repositorio/10221/27368/1/BCN

Clarke, I., Flaherty, T.B., & Mottner, S. (2001, December 1). *Student perceptions of educational technology tools.* 10.1177/0273475301233002

Clement, J. & Miles, M. (2018). *Screen schooled: Two veteran teachers expose how technology overuse is making our kids dumber.* Chicago Review Press Incorporated.

Creswell, J.W. (2009). *Research design: qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, SAGE Publications.

Cohen, J., Mccabe, E., Michelli, N., & Pickeral, T. (2009). *School climate: Research, policy, practice, and teacher education.* http://www.ijvs.org/files/Publications/SchoolClimate.pdf

Collins, A. & Brown, J.S. (1988). *The computer as a tool for learning reflection.* Springer. https://link.springer.com/chapter/10.1007/978-1-4684-6350-7_1

Comer, C., Jonathan, A. & Wikle,T. (2008). *Worldwide diffusion of the cellular telephone, 1995–2005*.The Professional Geographer. 60. 252-269. 10.1080/00330120701836303.

Cybersafety Solutions. (n.d) *Fact Sheet. What is problematic internet use?* https://www.cybersafetysolutions.com.au/downloads/Problematic-Internet-Use.pdf

Davis, T. (2019). *Outsmart your Smartphone.* New Harbinger Publications Inc:CA. https://www.forbes.com/sites/carolinebeaton/2017/01/27/the-millennial-workforce-how-multitasking-is-changing-our-brains/#ef2c2203605c

Digital library. https://dl.acm.org/citation.cfm?id=58196

de Vise, D. (2010). *Wide Web of diversions gets laptops evicted from lecture halls.* The Washington Post. http://www.washingtonpost.com.

Donnely, E., & Kuss, D.J. (2016*) Depression among users of social networking sites (SNSs): The Role of SNS Addiction and Increased Usage,* Pre Med 2(1) 107 http://dx.doi.org/10.19104/japm.2016.107

Cowen, T. (2020, February, 1). *The Smart Phone as Pacifier*. Marginal Revolution. https://marginalrevolution.com/marginalrevolution/2020/02/the-smart-phone-as-pacifier.html

Daneback, K., & Smahel, D. (2014). *An increase in published articles and special issue. cyberpsychology:* Journal of Psychosocial Research on Cyberspace, 8(4), https://cyberpsychology.eu/article/view/4326.

Diagnostic and Statistical Manual of Mental Disorders. Fourth Edition. (2013). https://behavenet.com

Donald, B. (2016, November 22) *Stanford researchers find students have trouble judging the credibility of information online.* https://ed.stanford.edu/news/stanford-researchers-find-students-have-trouble-judging-credibility-information-online

Donelly, E., & Kuss, D.J. (2016). *Depression among users of social networking Sites (SNSs). The role of SNSS addiction and increased usage.* Journal of Addiction and Preventive Medicine, 1, 1-6. https://www.elynsgroup.com/journal/article/depression-among-users-of-social-networking-sites-snss-the-role-of-sns-addiction-and-increased-usage

Duggan, M., & Brenner, J. (2013). *The Demographics of Social Media Users – 2010.* Pew Research Center. https://www.pewresearch.org/internet/wp-content/uploads/sites/9/media/Files/Reports/2013/PIP_SocialMediaUsers.pdf

Dunckley, V. L. (2015). *Reset your child's brain: A four-week plan to end meltdowns, raise grades and boost social skills by reversing the effects of electronic screen-time.* Novato. New World Library.

Edinete, R. M. & Tudge, J. (2013, December 2). Urie Bronfenbrenner' theory human development: It's evolution from ecology to bioecology. *Journal of Family Theory & Review. https://onlinelibrary.wiley.com/doi/abs/10.1111/jftr.12022*

Facer, K. & Sandford, R. (2010, January 12). *The next 25 years? Future scenarios and future directions for education and technology.* Journal on computer assisted learning. 10.1111/j.1365-2729.2009.00337.x

Freed, R. (2015). *Wired child: Reclaiming childhood in a digital age*. CreateSpace Independent Publishing Platform.

Forrester Research. (2017). *Fourth quarter report*. https://www.forrester.com

Ganuvai, M., Cole, M. (2001). *Readings in the development of children.* Worth publishers.

Giumetti, G. W., & Kowalski, R. M. (2016). Cyberbullying matters.. In R. Navarro, S.

Yubero, & E. Larrañaga (Eds.), *Cyberbullying across the globe: Gender, family, and mental health*. 117–130. *Springer Science + Business Media*. https://doi.org/10.1007/978-3-319-25552-1_6

Graham, R., Choi, K.S. (2016). Explaining African-American cell phone usage throuh the social shaping of technology approach. *SpringerLink.* https://link.springer.com/article/10.1007/s12111-015-9317-x

Granados, N. (2016, June 30). *How Facebook Biases your News Feed.* Forbes. www.forbes.com/sites/nelsongranados/2016/06/30/how-facebook-biases-your-news-feed/#3e888cbf1d51

Halavavis, A. (2018). *Search Engine Society*. Cambridge, UK: Polity Press

Hancock, D. R. & Algozzine, B. (2017). *Doing case study research: A practical guide for beginning researchers.* New York: Teachers College Press.

Hart, A. D. & Hart, S. (2013). *The digital invasion: How technology is shaping you and your relationships*. Grand Rapids, MI: Baker Books.

Heitner, D. (2016). *Screenwise: Helping kids thrive (and survive) in their digital world*. Brookline, MA: Bibliomotion.

Holden, C. (2001). *"Behavioral" addictions: Do they exist?* Science, 294 (5544), 980-982. http://science.sciencemag.org

hooks, b., (1994). *Teaching to transgress.* Routledge.

Horwitz, J.& Seetharaman, D. (2020, May 26). Facebook Executives Shut Down Efforts to Make the Site Less Divisive, *Wall Street Journal.* https://www.wsj.com/articles/facebook-knows-it-encourages-division-top-executives-nixed-solutions-11590507499?mod=searchresults&page=1&pos=1

Howard, J. (2019, January, 4). Link between social media and depression stronger in teen girls than boys. https://www.cnn.com/2019/01/03/health/social-media-depression girls-study/index.html

Howe, N. (2010, August, 25). *Managing Millennials how to cope with a generation of multitaskers.* Science Direct. https://www.tlnt.com/managing-millennials-how-to-cope-with-a-generation-of-multitaskers/

International Technological Union. (2019). *Measuring Digital Development. Facts and figures*. https://www.itu.int/en/ITUD/Statistics/Documents/facts/FactsFigures2019.pdf

Jacobsen, W.C., & Forster, R. (2011). The wired generation: Academic and social outcomes of electronic media use among university students. *Cyberpsychology, Behavior and Social Networking, (14)* 5, 275-280. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.471.7633&rep=rep1&type=pdf

Johnson, G. M. (2010). Internet use and child development: validation of the ecological techno-subsystem. *Educational technology & society, 13* (1), 176–185. https://www.j-ets.net/ETS/journals/131/17. pdf.

Johnson, G. M., & Puplampu, P. (2008). *A conceptual framework for understanding the effect of the internet on child development: The ecological techno-subsystem.* Canadian Journal of Learning and Technology, 34, (19-28). https://www.cjlt.ca/index.php/cjlt/article/view/26428/19610

Kaiser Family Foundation. (2010, Jan 20). *Generation M 2: Media in the lives of 8 to 18 year old.* https://www.kff.org/other/event/generation-m2-media-in-the-lives-of/

Kardaras, N. (2016). *Glow kids: How Screen addiction is hijacking our kids.* St. Martin Press.

Kardaras, N. (2017, March 30). *Glow kids: Examining screen time and addiction in children*. Southwest family. Guidance & Institute. http://swfamily.com/event/dr-nicholas-kardaras-glow-kids-examining-screen-time-addiction-children/

Keith W. Beard, K.W. & Wolf, E. (2004, 5 Jul). *Modification in the proposed diagnostic criteria for Internet addiction.* CyberPsychology & Behavior. 4 (3). https://www.liebertpub.com/doi/abs/10.1089/109493101300210286.

Keller, D., & Share, J. (2007). *Critical media literacy: Crucial policy choices for a Twenty-First-*Century Democracy. Policy Futures in Education. 5 (1). doi:10.2304/pfie.2007.5.1.59

Kenney, M., & Zysman, (2016). *The Rise of the Platform Economy.* Issues in Science and Technology. https://www.nbp.pl/badania/seminaria/25x2016_2.pdf

Keyes, R. (2004). *The Post-Truth Era: Dishonesty and Deception in Contemporary Life.* St. Martin's Press.

King, R.W. (1961, March). *Technology and social progress political science quarterly.* The Academy of Political Science Stable. http://www.jstor.org/stable/2145967

Kirschner, P.A., & Merriënboer, J.J.G. (2014, June 2). Do learners really know best? Urban legends in education. 10.1080/00461520.2013.804395.

Korstjens, I. & Moser, A. (2018) Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing, European Journal of General Practice, 24:1, 120-124, DOI: 10.1080/13814788.2017.1375092

Koob, F.G., Le Moal, M. & Thompson, R.F. (Eds). (2010). *Encyclopedia of Behavioral Neuroscience,* p. 104-111. Academic Press. 10.1016/B978-0-08-045396-5.00176-7

Koch, K. (2015). *Screens and teens: Connecting with our kids in a wireless world.* Moody Publishers.

Kowalski, K., (2016, March 3). *When Smartphones go to school*. ScienceNews for Students. https://www.sciencenewsforstudents.org/article/when-smartphones-go-school

Kyunghee, K., Ryu, E., Chon, M., & Yeun, .J. (2018, September). *Internet addiction in Korean adolescents and its relation to depression and suicidal ideation: A questionnaire survey*. Researchgate. https://www.researchgate.net/publication/7344822_Internet_addiction_in_Korean_adolescents_and_its_relation_to_depression_and_suicidal_ideation_A_questionnaire_survey

Lai, C. & Lei, J. (2015). The technological milieu. In He, M.F., Schultz, B., Schubert, W.H., (Eds.). *The Sage guide to curriculum in education*. Sage Publications.

Layton, L. (2014, June 7). *How Bill Gates pull off the swift Common Core Revolution.* The Washington Post. https://www.washingtonpost.com

Leading Education Innovation. (2012, Sept 6). *CoNS releases new report on the safety and security of personal devices in K-12 schools.* https://cosn.org/about/news

Ledsom, A. (2019, August 30). *The Mobile Phone Ban in French Schools, One Year On.* Forbes. https://www.forbes.com/sites/alexledsom/2019/08/30/

Lee, A. (2017, January 19). *Multitasking on Their Smartphone: Millennials in the Workplace.* Huff post. https://www.huffpost.com/entry/multitasking-on-their-smartphone-millennials-in-the_b_5880b58ee4b0fb40bf6c46f0

Lee, S. (2019). *Digital minimalism: Choosing a focused life in a noisy world*. Dana Publishing.

Lenhart, A. (2015, April 9). *Teens, Social Media and Technology Overview.* Pew Research Center. https://www.pewresearch.org/internet/2015/04/09/teens-social-media-technology-2015/

Lepp, A., Barkley, J.E. & Karpinski, A. C. (2015). *The relationship between cell phone use and academic performance in a sample of U.S. College students*. Thematic Reading Anthology. https://courses.lumenlearning.com

Leswing, K. (2018, October 22). *Apple's iPhone is still the 'dominant device brand' among American teens.* Business Insider. https:// www.businessinsider.com/82-percent-of-american-teens-own-an-iphone-piper-jaffray-survey-2018-10

Lin, I-Hsuan et al. (June, 2010). *The association between suicidality and Internet addiction and activities in Taiwanese adolescents*. Comprehensive Psychiatry. 196 (6), 486-492. https://doi.org/10.1016/j.comppsych.2013.11.012

Lin, C., Hsin H., & Hsien, S. (2011). *EFL Students' Perceptions of Learning Vocabulary in a Computer-Supported Collaborative Environment*. Turkish Online Journal of Educational Technology - TOJET, v10 n2 p91-99 Apr 2011. https://eric.ed.gov/?id=EJ93222

Lup, K., Trub, L., & Rosenthal, L. (2015, May 12). *Instagram #Instasad?. Exploring Associations Among Instagram Use, Depressive Symptoms, Negative Social Comparison, and Strangers Followed.* Mary Ann Liebert Inc. https://doi.org/10.1089/cyber.2014.0560

Manning-Schaffel, V. (2018, Feb 22). *Realistic screen time solutions for kids (and their parents).* Better Health. https://www.nbcnews.com

McCoy, B. (2013). *Digital distractions in the classroom: students' classroom use of digital devices for non-class related purposes.* http://digitalcommons.unl.edu/cgi

McEvoy, A., & Welker, R. (2000, July 1). *Antisocial behavior, academic failure, and school.* Journal of Emotional and Behavioral Disorders. *https*://journals.sagepub.com/doi/10.1177/106342660000800301

McHale, S.M., Dotterer, A. & Kim, J. (2009). *An ecological perspective on the media and youth development.* U.S. National Library of Medicine. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3257056/

Melillo, R. (2015) *Disconnected kids: The groundbreaking brain balance program for children with autism, ADHD, dyslexia, and other neurological disorders*. Penguin Group.

Meskó, B., Drobni, Z., Bence, E. & Győrffy, Z. (2017, Sep 14). Digital health is a cultural transformation of traditional healthcare. NCBI. doi: 10.21037/mhealth.2017.08.0

Miller, C.C. (2015, November 4). *Stressed, tired and rushed: A portrait of a modern family.* New York Times. www.nytimes.com/2015/11/05/upshot/stressed-tired-rushed-a-portrait-of-the-modern-family.html

Mills, A., Durepos, G, & Wiebe, E. (Eds.). (2010). *Encyclopedia of case study research*. SAGE. Publications, Inc. City: Thousand Oaks. http://sk.sagepub.com/reference/download/casestudy/n175.pdf

Mills, K. (2013, August). *Effects of Internet use on the adolescent brain: Despite popular claims, experimental evidence remains scarce.* Research Gate. https://www.researchgate.net

Misner, J., (2019). *Put the F'king Phone Down*. Self-publisher.

Murphy, M. & Marshall, K. (2015, April 5). *Common core preparation in special Education teacher education programs.* Sage Journals. http://doi/abs/10.11 77/0888406415577453

Media Melting Pot: Diverse Consumers are Driving Retrieved Usage on Handheld Platforms. (2019). Nielsen. https://www.nielsen.com/us/en/insights/article/2019

McHale, S., Dotterer, A., & Kim, J. (2009). *An ecological perspective on the media and youth development*. NCBI. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3257056/

Nalwa, K. & Anand, A. (2004, July 5). *Internet addiction in students: A cause of concern.* Cyberpsychology and behavior. https://doi/abs/10.1089/109493103322725441

National Education Technology Plan. (2010). U.S. Department of Education. https://www.ed.gov/sites/default/files/netp2010.pdf

Nagin, P. (2012, Feb, 9). *How Smart Phones Are Impacting Your Friendships*. https://www.mic.com/articles/4051/how-smart-phones-are-impacting-your-friendships

Ng, B.D., & Wiemer-Hastings, P. (2005, Jun 6). *Addiction to the internet and online gaming. CyberPsychology & Behavior. 8*(2). https://doi/abs/10.1089/cpb.2005.8.110

Noor, K. (2008). *Case study: A strategic research methodology. American journal of applied sciences.* https://www.researchgate.net

O'Neal, B. (2015). *Ecological perspectives and children's use of the Internet: exploring micro to macro level analysis.* Estonian Journal of Education. http://ojs.utlib.ee/index.php/EHA/article/view/eha.2015.3.2.02b

Osborne, C. (2012, April 4*). Bring your own devices launches at school.* Zdnet. https://www.zdnet.com/article/bring-your-own-device-scheme-launches-at-school

Orsolya, K., Potenza, M., Stein, D., King, D., Hodgins,D.,Saunders,J. …& Demetrovics, Z. (2020, May 12) *Preventing problematic Internet use during the COVID-19 Pandemic: consensus guidance.* Comprehensive Psychiatry. doi:10.1016/j.comppsych.2020.152180

Oxford Dictionary, (2016).Word of the Year 2016, https://en.oxforddictionaries.com/word-of-the-year/word-of-the-year-2016.

Palladina, V. (2016, April). *The science behind the insane popularity of react videos in YouTube.* https://arstechnica.com/gaming/2016/04/

Parker, K., Graf, N., & Nik, R. (2019). *Generation Z looks a lot like millennials on key social and political issues.* Pew Research. https://www.pewsocialtrends.org/2019/01/17/generation-z-looks-a-lot-like-millennials-on-key-social-and-political-issues/

Pham, M.T. (2020, June 16). *The Smartphone Revolution: "Adult Pacifiers."* Columbia Business School. https://www8.gsb.columbia.edu/newsroom/newsn/9226/the-smartphone-revolution-adult-pacifiers

Pariser, Eli. (2015, May 7). *Fun facts from the new Facebook filter bubble study.* Medium. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3257056/

Pavlov, I. P. (1897). *The work of the digestive glands*. Griffin.

Pew Research Center. (2018, May 31). *Teens, social media & technology.* http://www.pewinternet.org

Pew Research Center. (2018, August 22). *How parents and teens navigate screen time and device. Distractions.* http://www.pewinternet.org

Porter-Magee,K. & Stern, S. (2012, April 3). *The truth about Common Core*. National review. https://www.nationalreview.com/

Prensky, M. (2001). *Digital natives, digital immigrants*. On the Horizon, 5 (9), 1-6. https://www.marcprensky.com/

Price, C., (2018). *How to break up with your phone*. Ten Speed Press.

Przybylski, A., Murayama, K. DeHaan, C.R. & Gladwell, V. (2013, July). *Motivational, emotional, and behavioral correlates of fear of "missing out.*" Computers in Human Behavior 29 (4): 1841–1848. doi:10.1016/j.chb.2013.02.014.

Purcell, K., Buchanan, J. Friedrich, L. (2013, February 28). How teachers are using technology

at home and in their classrooms. https://www.pewresearch.org/internet/2013/02/28/part-iii-bringing-technology-into-the-classroom/

Radesky, J., Schumacher, J. & Zuckerman, B. (2015, January). *Mobile and interactive media use: The good, the bad and the unknown*. Pediatrics. 135 (1). http://pediatrics.aappublications.org/content/135/1/1

Rainnie, L., & Anderson, J. (2020, February 21) *Many tech experts say that digital disruption is hurting democracy.* Pew Research Internet and Technology. https://www.pewresearch.org/internet/2020/02/21/many-tech-experts-say-digital-disruption-will-hurt-democracy/

Ravitch, D. (2017). 5 *Risks posed by the increasing misuse of technology.* Edsurge. https://www.edsurge.com/news/2017-12-29-5-risks-posed-by-the-increasing-misuse-of-technology-in-schools

Reed, L. (2015, January 15). *Digital distraction on the rise, study says.* Phys. https://phys.org/

Rideaut, V., & Robb, M. (2018). *Social media, social life. Teens reveal their experience*. CommonSense.https://www.commonsensemedia.org/sites/default/files/uploads/research/2018_cs_socia mediasociallife_fullreport-final-release_2_lowres.pdf

Robb, M. (2018). *What parents need to know about technology addiction*. Commonsense Media. https://www.commonsensemedia.org/blog/what-parents-need-to-know-about-technologyaddiction.

Roberts, D., & Foehr, U. (2008). Trends in Media Use. *The Future of Children*, *18*(1), 11-37. www.jstor.org/stable/20053118

Rose, E.M. & Tudge, J. (2013). *Bronfenbrenner's theory of human development: Its evolution from ecology to bioecology*. Journal of family theory & review. 5 (4) 243-258.

Rosenwald, M. (2014, January 16). *Smartphones get more sophisticated, but their owners do not.* The Washington Post. https://www.washingtonpost.com/local/smartphones-get-more-sophisticated-but-their-owners-do-not/2014/01/15/99d7e100-7a20-11e3-8963-b4b654bcc9b2_story.html

Rubinkam, M. (2010, November 26). *During boring classes, texting is the new doodling.* Boston.com.http://archive.boston.com/news/nation/articles/2010/11/26/during_boring_classes_texting_is_the_new_doodling/

Ryu, E.J. (2004, February). *Internet addiction: prevalence, discriminant validity and correlates among adolescents in Hong Kong.* Korean Society of Nursing Science. 34 (1) 102-110. https://synapse.koreamed.org/articles/1063142

Saldaña, J. (2011). *Fundamentals of Qualitative Research. Understanding Qualitative Research.* Oxford University Press.

Saldaña, J. (2014). *Thinking qualitative: Methods of mind.* Sage Publications.

Salomon, G. & Perkins, D. (2005*), Do technologies make us smarter? Intellectual amplification with, of, and through technology*, in Intelligence and Technology. Stenberg. R. (ed.) Routledge.https://www.google.com/books/edition/Intelligence_and_Technology/VZgVId2jGXIC?hl=en&gbpv=1&dq=intellectual+amplification+with+technology+solomon+perkins&pg=PA71&printsec=frontcover

Sami, H. et al. (2018, September). *The effect of sleep disturbances and internet addiction on suicidal ideation among adolescents in the presence of depressive symptoms.* Science Direct. https://doi.org/10.1016/j.psychres.2018.03.067

Sanchez-Martinez, M, & Otero, A. (2009, April). *Factors associated with cell phone use in adolescents in the community of Madrid (Spain).* Mary Ann Liebert, Inc. Publishers. https://www.ncb.nlm.nih.gov/

Sampasa-Kanyinga. (2015, July 13). *Frequent Use of Social networking sites is associated with poor psychological functioning among children and adolescents.* Cyberpsychology, Behavior, and Social Networking. 18 (5). https://doi.org/10.1089/cyber.2015.0055

Schreiner, E. (2018, April, 25). *Effects of Mobile Phones on Students.* The Classroom. https://www.theclassroom.com/effects-of-mobile-phones-on-students-12959442.html

Shapira N.A., Lessing M.C., & Goldsmith T.D. (2003). *Problematic internet use: proposed classification and diagnostic criteria.* Depress Anxiety. https://doi: 10.1002/da.10094.

Sheldon, P, Rauschnabel, P., Honeycutt, J.M. (2019). *The dark side of social media: Psychological, managerial, and societal perspectives*. Elsevier.

Sean, I. (2018, August 14). *A philosopher explains America's "post-truth" problem*. Vox. https://www.vox.com/2018/8/14/17661430/trump-post-truth-politics-philosophy-simon-Blackburn.

Skinner, B. F. (1971). *Beyond freedom and dignity*. Knopf.

Shapira et al. (2003). *Problematic Internet use: Proposed classification and diagnosis criteria. U.S National Library of Medicine.* National Center for Biotechnology Information. . https://www.ncbi.nlm.nih.gov/

Shelton, J. (2018). LinkedIn profile. https://www.linkedin.com/in/sheltonjim/

Shepherd, J. (2004). Why the digital era. In Doukidis, G. Mylonopoulos, N. & Pouloudi, N. (Eds.), *Social and Economic transformation in the Digital Era.* Idea Group Publishing.

Seife, C. (2015). *Virtual unreality. The new era of digital deception*. Penguin.

Selwyn, N. (2011). *Schools and schooling in the digital age: a critical perspective*. Routledge.

Smith, M. S. (2006, August 11). *The promise of open educational resources*. Change magazine. https://hewlett.org/wpcontent/uploads/2016/08/ChangeMagazine.pdf

Smith, M. (2018). LinkedIn Profile. https://www.linkedin.com/in/marshall-s-mike-smith-ab391323/

Smith, M.S. & Casserly, C.M. (2006, September/October). *The Promise of Open Educational Resources.* The change magazine. https://eric.ed.gov/?id=EJ772126

Snyder S.M., O'Brien, J., & Li, W. (2016). *There's a new addiction on campus: Problematic Internet Use (PIU).* The conversation. https://theconversation.com

Song, L., Singleton, E., Hill, J.R., & Hwa Koh, M., (2003). *Improving online learning: Student perceptions of useful and challenging characteristics.* https://doi.org/10.1016/j.iheduc.2003.11.003

Spector, J. M. (2015). *The SAGE encyclopedia of educational technology*. Thousand Oaks, Sage Reference.

Stake, R. E. (1994). Case studies. In Denzin, N. K, & Lincoln, Y. S. (Eds.). *Handbook of qualitative research*, (pp. 236–247). Thousand Oaks, Sage.

Stake, R. E. (1995). *The art of case study research*. Sage.

Steiner-Adair, C. (2014). *The big disconnect: Protecting childhood and family relationships in the digital age*. Harper.

Strauss, V. (2017, Nov 19). *Bill Gates has a(nother) plan for K-12 public education. The other did not go so well*. The Washington Post. https://www.washingtonpost.com

Suler, J. (2004). *The online disinhibition effect.* The Psychology of Cyberspace. http://users.rider.edu/~suler/psycyber/disinhibit.html

Suller, J. (2016). *Psychology of the digital age.* Cambridge University Press.

Turner, E. (2013). *Hollow Gods: Idolatry in a Postmodern Context*. Baker Academy.

Transforming teaching and learning with technology. (n.d.). The Consortium for School Networking. https://cosn.org/sites/default/files/mediayoutube

The Common Sense Census: Media Use by Tweens and Teens. (2019). https://www.commonsensemedia.org/research/the-common-sense-census-media-use-by-tweens-and-teens-2019

The impact of digital technology, (2020). United Nations. 2020 and beyond. Shaping the future together. https://www.un.org/en/un75/impact-digital-technologies

Thomas, K. & Muñoz, M. A. (2016). *Hold the Phone! High School Students' Perceptions of Mobile Phone Integration in the Classroom.* Secondary Education. https://eric.ed.gov/?id=EJ1110299

Twenge, J.M., Krizan, Z. & Hislerb, G. (2019). *Decreases in self-reported sleep duration among U.S. adolescents 2009–2015 and association with new media screen time.* ScienceDirect. https://doi.org/10.1016/j.sleep.2017.08.013Get

Twenge, J. (2017). *i-Gen. Why today super connected kids are growing up less Rebellious, more tolerant, less happy*. Atria Books.

Twenge, J.M. (2020). *Increases in depression, self-harm, and suicide among U.S. adolescents and links to technology use: Possible mechanisms*. Psychiatry on line. 10.1176/appi.prcp.20190015

Twenge, J.M., Joiner, T.E., Rogers, M.L.& Martin, G.N. (2017). *Increases in depressive symptoms, suicide-related outcomes, and suicide rates among U.S. adolescents after*

2010 and links to increased new media screen time. Clinical Psychological Science, 6, 3-7. 10.1177/2167712617723376.

Twenge, J.M., Hisler, G.C., & Krizan, Z. (2019). *Associations between screen time and sleep duration are primarily driven by portable electronic devices: evidence from a population-based study of U.S. children ages 0-17.* PubMed. NCBI. 10.1016/j.sleep.2018.11.009

Twenge, J.M., & Campbell,W.K. (2018). *Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study.* PubMed. https://pubmed.ncbi.nlm.nih.gov/30406005/

Turkle, S. (2011). *Alone Together. Why we expect more from technology and less from each other.* Basic Books.

Turkle, S. (2016). *Reclaiming conversation: The power of talk in a digital age reprint edition.* Penguin Books. NCBI. Oct 18;12:271-283. doi: 10.1016/j.pmedr.2018.10.003.

Uhls, Y. T. (2015). *Media moms and digital dads*. Bibliomoion, Inc. University State University. (2020). M.S.Cyberpsychology. https://www.nsu.edu/psychology-ms-cyberpsychology

Walker, A. (2015). *The ecology of digital childhood. The "digisystem."* http://www.aishawalker.com/2015/07/16/digisystem/

Wang, B. (2017, July 19). *The association between attention deficit/hyperactivity disorder and internet addiction: a systematic review and meta-analysis*. BMC Psychiatry. doi: 10.1186/s12888-017-1408-x

Wang, W. et al. (2019, July 17). *Internet addiction and poor quality of life are significantly associated with suicidal ideation of senior high school students in Chongqing, China.* PubMed. International Journal of Nursing Studies. https://peerj.com/articles/7357/ 43

Weber, M. (2019). *Screen Addiction. Why You Can't Put Your Phone Down*. En Route Books and Media.

Wei, F. F., & Wang, Y. K., (2010). *Students' silent messages: Can teacher verbal and nonverbal immediacy moderate student use of text messaging in class?* Communication Education. Taylor & Francis online. https://www.tandfonline.com/doi/abs/10.1080/03634523.2010.496092

Wei, F. F., & Wang, Y. K., & Klausner, M. (2012). *Rethinking college students' self-regulation and sustained attention: Does text messaging during class influence cognitive learning?* Communication Education. https://www.tandfonline.com/doi/abs/10.1080/03634523.2012.672755

Westerman, G., Bonner, D. & McAfree, A. (2014), Leading digital. Turning technology into business transformation. Harvard Business Review press.

Winches, S. (2009). *United States Department of Education office of the general counsel, certification of public interest waiver for James (Jim) Shelton III*. https://web.archive.org/web/20090919190625

Widman, J. (2018, July 19). *The emergence of cyberpsychology.* Communications of the ACM. https://cacm.acm.org/news/229668-the-emergence-of-cyberpsychology/fulltext

Yifat, B. & Kolikant, D. (2009, April). Digital Students in a Book-Oriented School: Students' Perceptions of School and the Usability of Digital Technology in Schools. Journal of Educational Technology & Society. https://www.researchgate.net/publication/220374469_Digital_Students_in_a_Book-Oriented_School_Students'_Perceptions_of_School_and_the_Usability_of_Digital_Technology_in_Schools.

Yin, R. (2003). *Case study research: design and methods*. Thousand Oaks: Sage Publications.

Yoffe, E. (2009, August 12). *How the brain hard-wires us to love Google, Twitter, and texting. And why that's dangerous.* Slate. http://www.slate.com/articles/health_and_science/science/2009/08/seeking.html

Watson, J. B. (1930). *Behaviorism*. University of Chicago.

Witt, P. L., Wheeless, L. R., & Allen, M. (2004). *A meta-analytical review of the relationship between teacher immediacy and student learning.* Communication Monographs. https://www.tandfonline.com/doi/abs/10.1080/036452042000228054

Young, K. (1996). *Psychology of computer use: XL. Addictive use of the Internet: a case that breaks the stereotype*. U.S. National Library of Medicine. https://www.ncbi.nlm.nih.gov/pubmed/8969098

Young, K. (1998). *Internet addiction: The emergence of a new clinical disorder.* Cyberpsychology and Behavior. 1(3), 237-2. https:// doi/10.1089/cpb.1998.1.25

Young, K. & Rogers, R. (2009, Jan 29). *The relationship between depression and internet addiction.* /abs/10.1089/cpb.1998.1.25

APPENDIX A: PARENTAL CONSENT FOR CHILDREN PARTICIPATION IN RESEARCH

GEORGIA SOUTHERN UNIVERSITY

DEPARTMENT OF EDUCATION

Parental Consent for Children Participation in Research

Hello, (parent's name) this is Ana M Zurita. Your son/daughter (students' name) is in my homeroom class. I am also a graduate student at Georgia Southern University and, as part of my doctoral degree; I am conducting a study on School Climate and Policy Regarding the Use of Smartphones.

The purpose of this form is to provide you (as the parent/guardian of a prospective research study participant) with information that may affect your decision as to whether or not to let your child participate in this research study. I have permission from (School Name Removed for Confidentiality) to conduct this study at school.

Please read the information below before deciding whether or not to give your permission for your child to take part. If you decide to let your child be involved in this study, please sign your name at the end of this form. I provide my contact information below for further questions.

Purpose of the Study

The purpose of this study is to analyze the impact of smartphone usage in school culture and in the students' lives.

What is my child going to be asked to do?

If you agree, your child will be interviewed about the the new smartphone policy and how it may have changed school life before and after its introduction in the school. They will take part in a single interview, one hour to ninety minutes long, before or after school hours and activities. The interview will include questions about their perception of their use of smartphones at school and at home.

What are the risks involved in this study?

The risks involved are expected to be minor and not any greater than would be expected in everyday educational practice. Students may feel uncomfortable responding to certain items. If this is the case, the item will be skipped.

You are being asked whether or not you provide consent for your student to participate; your student will also be asked to provide assent (or permission). Even if you provide consent, they can decide not to participate. They cannot participate without your consent. In other words, both you and your child have to agree to participate.

You can withdraw your consent or the student can withdraw their assent to participate in the study at any time by notifying me in person or email.

What are the possible benefits of this study?

This study aims to: improve school administration by analyzing what works and does not work with the smartphone policy, enable teachers to focus on teaching and not be distracted by extra classroom management, and offer students a wider opportunity to experience non distracting learning.

Does my child have to participate?

No, your child's participation in this study is voluntary. Your child may decline to participate or to withdraw from participation at any time. You can agree to allow your child to be in the study now and change your mind later without any negative consequences.

What if my child does not want to participate?

If your child does not want to participate they will not be included in the study and there will be no penalty. If your child initially agrees to be in the study they can change their mind later without any penalty.

Will there be any compensation?

Neither you nor your child will receive any type of payment for participating in this study.

How will your child's privacy and confidentiality be protected if s/he participates in this research study?

If both you and your student provide consent and assent for them to participate in this study, my interview with your child will be audio recorded. Any audio recordings will be stored securely and only I will have access to the recordings. Recordings will be kept until the report is approved and published, and then they will be erased. If I quote your child's words, I will use a fictitious name.

Students will be advised that if anything they say suggests that they are at personal risk, I will have to inform the appropriate personnel. This follows typical mandatory reporting at our school.

Whom to contact with questions about the study?

Prior to, during or after your child's participation you can contact me, Ana Zurita at 912-257-8524 or send an email to ana.zurita@sccpss.com with any questions. You can also contact my chair, Dr. Robert Lake, at 912-478-0355. Finally, you may ask questions about subjects rights to Georgia Southern University by email, at irb@georgiasouthern.edu, or or by phone, 912-478-5465.

This study has been reviewed and approved by The University Institutional Review Board under tracking number: H19228

Signature

I am asking permission for your child to participate in this study. Your signature below indicates that you have read the information provided and have decided to allow / not allow your child to participate in the study. If you later decide that you wish to withdraw your permission for your child's participation, you may email me and I will discontinue his or her participation immediately. I recommend that you make a copy of this form to keep for your records.

Please return this consent to me, Ana Zurita through your child within one week.

☐ Allow my student to participate

☐ Do not allow my student to participate

_____

Printed Name of Child

_____ _____

Signature of Parent(s) or Legal Guardian Date

_____ _____

Signature of Investigator Date

APPENDIX B: MINOR ASSENT

GEORGIA SOUTHERN UNIVERSITY

DEPARTMENT OF EDUCATION

MINOR'S ASSENT

Hello,

I am Ana M. Zurita, a graduate student at Georgia Southern University.

You are being asked for your permission to participate in a project that will be used to learn about the the impact of smartphone usage in school culture and in the students' lives.

If your parents and you agree to be part of the research, you and I will have a one-on-one conversation about your smartphones use. It will take about about an hour, and take place before or after school.

You do not have to participate. You can stop whenever you want. You can refuse to participate even if your parents say you can. The information that you will give me will be in my thesis and that will be published digitally in a database at Georgia Southern University library.

Our conversation will be recorded. If you do not want to be recorded, I will take notes by hand. The audio files will be stored in a locked cabinet and in a password saved cloud account.

None of the teachers or other people at your school will see the answers to the questions that I ask you. Only my advisors will see your answers. We are not going to put your name on the answers that you give us, so no one will be able to know which answers were yours.

If you have any question about this form or about the project, please call me at 912- 257-8524 or my advisor, Dr. Robert Lake, at 912-478-0355. Thank you!

If you understand the information above, please sign your name on the line below:

Yes, I will participate in this research: _____

No, I will not participate in this research: _____

Child's Name: _____

Investigator's Signature: _____

Date: _____