iGeneration: The Social Cognitive Effects of Digital Technology on Teenagers

Eugenia A. Ives

Submitted in Partial Fulfillment of the Requirements for the Degree

Master of Science in Education

School of Education and Counseling Psychology

Dominican University of California

San Rafael, CA

October 2012

This thesis, written under the direction of the candidate's thesis advisor and approved by the Chair of the Master's program, has been presented to and accepted by the Faculty of the Education and Counseling Psychology department in partial fulfillment of the requirements for the degree of Master of Science in Education. The content and research methodologies presented in this work represent the work of the candidate alone.

Eugenia A. Ives, Candidate   Date   October 30, 2012

Elizabeth Truesdell, PhD., Chair   Date   October 30, 2012

Madalienne F. Peters, Ed.D., Thesis Advisor   Date   October 30, 2012

Acknowledgements

It has become appallingly obvious to me that our technology has exceeded our humanity.

-Albert Einstein

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Abstract

Into today's world, digital technology changes so rapidly and integrates into our society at such an accelerated rate, it is hard to keep up with it, let alone reflect on the effects it has on our lives. Although Facebook, YouTube, and Twitter, did not exist a mere decade ago, they are now ubiquitous forms of media and communication in our culture. Today's generation of teenagers, born in the 1990s, aptly labeled the "iGeneration", are the most connected generation ever. These iGen teens are digital natives growing up in an era of a massive influx of technology.   They do not know of a world that does not include the Internet and easy access to technology. Parents of iGen youth, however, are "digital immigrants". As immigrants, they struggle with a learning curve and lack the innate knowledge and ease with digital technology as that of their native offspring. There is little historical data or longitudinal studies of the social cognitive effects of digital media consumption to help inform and guide digital immigrants and natives alike in making choices about digital practices. Statistics change so quickly, it makes for an ongoing challenge to understand how to structure or regulate digital consumption. The intention of this research is to better understand how digital consumption effects teenager's cognitive abilities and socialization processes, with the goal of discovering best practices and guidelines for educators and parents to implement with regard to their teenagers' digital consumption, as we spin faster and faster into this digital era.

Chapter 1 Introduction

This past summer, at a family reunion, I observed my niece and nephew, ages fourteen and sixteen respectively, spend most of the day detached from the festivities, hanging on the fringes, heads down, rapidly texting on their smart phones. At one point in the afternoon, my niece laughed out loud (LOL!) A couple of adults turned and looked at her. She did not look up, but simply continued, stooped over, cocooned in her texting world. The social life of a teenager has radically shifted with the onslaught of digital media. Is all this digital technology creating an anti-social generation? What are the effects digital consumption on brain development? Does it rewire our brains? If so, what are the implications? What are appropriate amounts of usage time? What are best practices with digital gadgetry? What are unhealthy digital consumption habits and why? These are all questions this paper explores and attempts to answer.

Statement of Problem

We live in a rapidly changing digital world with little historical data or longitudinal studies of the effects of digital media consumption. The statistics change so quickly it is hard to have a current pulse or understanding of how much digital content we interact with daily, how it affects us, and how much should we consume.

Purpose Statement

The purpose of this study is to better understand the social cognitive effects of digital

media on teenagers and to become better informed as a parent and an educator and to

inform others of best practices with regard to digital technology consumption. My quest

is to better understand how digital technology affects the teenagers' brains and affects

their socialization processes and also to find best practices and balance given that we live

in this fast paced digital world.

Research Question

The probing question of this thesis is that of: What are the social cognitive effects of

digital technology on teenagers? Please note, for the purposes of this paper the term

"digital technology" is used as an umbrella term encompassing all screens, monitors,

gadgets, laptops, cell phones, computers - basically anything digital with a screen - that

teenagers watch and interact with.

Theoretical Rationales

Albert Bandura

During a career spanning the second half of the twentieth century, psychologist Albert

Bandura was responsible for many groundbreaking contributions in the fields of

psychology and education. One of Bandura's most influential theories is that of his

"social cognitive theory" (SCT) which postulates that portions of an individual's

knowledge acquisition can be directly related to observing others within the context of

social interactions, experiences, and by outside media influences. He further theorizes

that we attain our sense of "self efficacy", or our belief about our competence and ability

to succeed, in social situations (Bandura, 1977). Although digital and social media did

not exist when Bandura first introduced SCT in the 1950s, many proponents of SCT are a

useful filter in which to examine the social cognitive effects of digital media on today's

teenagers.   As iGeneration youth primarily socialize online, their "self efficacy" is

directly related to their digital consumption.

A main concept in Bandera's social cognitive theory is that an individual's actions

and reactions, in almost every situation, are influenced by the actions that individual has

observed others. People observe others acting within an environment and these

observations are then remembered by an individual and help shape their social behaviors

and cognitive processes (Bandura, 1977). Therefore, applying this concept to today's

American teenagers who live in a ubiquitous digital environment wherein socialization

through and with digital gadgetry is now atypical teenage behavior, it is of utmost

importance to try to understand what social processes are going on resulting from their

digital consumption. Digital technology is not only an inherent aspect of contemporary

teenagers' lives, but it affects how they communicate, how they socialize, and ultimately

who they are.

Daniel Siegel, MD

The teenage brain is an undeveloped brain, primarily still developing in the pre-frontal cortex and in executive functioning until a young adult is in their mid to late twenties. Another component of SCT supposes the idea that by changing how an individual learns their behaviors in the early stages of mental development could have a large impact on their mental processes in later stages of development (Bandura, 1977). Using this aspect of SCT as a premise, in a country where the average usage of digital technology by a teen is **seven and a half hours a day**, (Henry J. Kaiser Family Foundation, 2010, para. 1) It is important to understand developmentally how digital technology is affecting this iGeneration's brain development. The groundbreaking works of brain neuro-physicist, Dr. Daniel Siegel contribute important essential understandings of the effect of digital technology on our brains.

Siegel, an author, psychiatrist, and neuro-physicist at UCLA, has developed a brain theory called *interpersonal neurobiology.* At the Wisdom 2.0 Conference, held at the Computer Museum in Mountain View, California, in September 2011, Dr. Siegel spoke of the imbalance now happening in human brains, wherein left brain hemisphere stimulation is far more dominant than right brain hemisphere stimulation, due to our over consumption of digital technology:

> … Texting draws on only on one side of the brain (the left side) to the detriment of youth … The brain develops by the stimulation given to us. It stimulates the neurons. The genes unravel and structural change happens. This is "neuroplasticity". So, if you have someone who is

texting all the time, the concern of 7 hours and 48 minutes a day spent in

front of a screen … is that you are using the left brain to type out the

linguistic information but the right brain is passive… My concern is that

compassion, stress modulation and bodily wisdom to be tuned into your

bodily sensory self, will be lessened (by the usage of technology.) So,

here's the challenge: how do we bring the WHOLE PERSON into the

digital age? (Siegel, 2011)

In his field of interpersonal neurobiology, Siegel suggests that a core aspect of a

healthy mind emerges from a process called "integration"- the linkage of different

components of the brain system. Through his work at his Mindsight Institute, Dr. Siegel

proposes a "healthy mind platter" which includes seven daily practices to balance the

brain from becoming too left brain dominant and to bring forth this brain "integration"

(Mind Your Brain, Inc., 2010). The work of Siegel is further explored in this paper and

the seven daily practices to balance the brain are listed in Appendix G.

Assumptions

We do not yet fully understand the social cognitive effects of digital technology on

teenagers as it has so many emerging platforms and is rapidly changing by the minute.

There are both positive and negative effects of digital media on social cognitive

development of teenagers and we need to better educate iGeneration youth and teach

them positive digital citizenship practices.

Background and Need

Need to Bridge the Digital Generation Gap

There is often a knowledge and technical skill gap between iGeneration adolescents and their digital immigrant parents that creates a disconnect in how parents and youth participate in and understand the online and digital worlds. iGeneration youth have a voracious appetite for technology. Parents need to better understand that iGeneration youths' online lives are actually an extension of their offline lives. Parents often feel they do not have the technical abilities or time to keep up with the ever changing landscape of the Internet (O'Keeffe, Clarke-Pearson, Council on Communications and Media, 2011, p.801). Instead of fearing rapid digital changes and trying to put the brakes on it, some parents need guidance and education in how to embrace their teens' digital world and learn how to best monitor and set limits on their adolescents' consumption of media and digital technology.

Need for Best Practice Guidelines and Digital Citizenship Education

Recently, while teaching class in computer lab with 14 and 15 year-old students, I asked the class, "What is a digital footprint?" Total silence. Not one out of the twenty-eight students in the class knew what this term meant. I was shocked. Understanding and building positive digital footprints is essential for these iGen youths and directly affects their future, such as when applying for college or when trying to get a job interview. I asked the next class of thirty teenagers the same question. Same silence. Then one student piped in, "Isn't it what they know about you?" Cleary, as we march full force into the digital age, it is our responsibility, as educators and parents, to teach youths the

benefits and the hazards of the cyber world. We must teach them how to create positive

digital footprints and to be good digital citizens. As we exist in this "new digital world

order", guidelines, best practices, and digital citizenship education seems essential in

order to best harness the positive potentials of the cyber digital world.

Need for Up-to-Date Digital Media Reviews

We are assaulted on a daily basis with the newest gadgets, smart phones, content,

information, websites, and technology, urging us to buy, to consume. It is, therefore,

essential that we have resources to educate ourselves about what it is we are consuming

and how it will affect us. An invaluable resource with a wealth of information on the

effects of digital technology on youth as well as reviews on media programming is that of

the organization Common Sense Media, Inc. Common Sense Media is non-profit

organization, based in San Francisco, California. It is a forerunner organization in

gathering information in effort to better understand the relationship between media and

children and help them thrive and navigate media effectively. Common Sense Media

reviews books, movies, TV shows, video games, apps, music, and websites and rates

them in terms of age-appropriate educational content, positive messages/role models,

violence, sex, and profanity, and more to help parents make informed media choices for

their kids (Common Sense Media, Inc., 2012).

Need for Longitudinal Studies

Digital media consumption is different than "traditional media" (television, film radio) in

that with the Internet and digital gadgetry the rapidity with which we shift between

screens and gadgets, we are processing tremendous volumes of stimulus and data input

every day, and for some people, all day long. We need to understand what all this digital

consumption is doing to our brains, to our bodies, how it is affecting how we live and

socialize, how it is changing our culture, and how it is changing who we are. The Pew

Internet and American Life Project, American Academy of Pediatrics, Common Sense

Media, The Berkman Center for Internet and Society at Harvard University, MacArthur

Digital Media and Learning Group, and the Henry J. Kaiser Family Foundation are some

of the current research centers and institutions conducting longitudinal studies and

research on the effects of digital media consumption.

A comprehensive anthology of studies on digital technology in relationship to

today's generation of youth is gathered in the book: *Hanging Out, Messing Around, and

Geeking Out*. Integrating twenty-three different case studies, led by chief editor Mizuko

Ito, this anthology was collaboratively written by members of the Digital Youth Project, a

three-year research effort funded by the John D. and Catherine T. MacArthur Foundation

and conducted at the University of California, Berkeley, and the University of Southern

California (Ito, 2010). Currently, *Hanging Out, Messing Around, and Geeking Out* fills

some of the research gaps, by reporting on an ambitious three-year ethnographic

investigation into how young people live and learn with new media in varied settings—at

home, in after school programs, and in online spaces. By focusing on media practices in

the everyday contexts of family and peer interaction, the book views the relationship of

youth and digital technology (Ito, 2010).

Need for Protective Legislation

There is an increasing need for cyber legislation regarding protection of privacy and personal information with the Internet.   The Berkman Center for Internet and Society at Harvard University's mission is "to explore and understand cyberspace; to study its development, dynamics, norms, and standards; and to assess the need or lack thereof for laws and sanctions" (Berkman Center for Internet & Society at Harvard Law School, 2012, para.1).

At a recent symposium in Washington, D.C., held in May 2012, to address the cognitive, social and emotional impact of media on children's lives, Common Sense Media outlined a brief urging new public policy agenda to protect the privacy of children and teens online.   Such an agenda would not track kids online; allow parents and kids to delete online information; not permit behavioral marketing to kids; and require an "opt in" privacy standard, especially for kids (Patricia, 2012, para. 8).   Panelists discussed the need for the implementation of sound legislation, on a federal level, to hold companies to certain standards. Speakers also discussed the issue of healthy media images for girls. They underscored the need for positive role models on the screen, and in advertisements, in which females are not hyper-sexualized or valued solely for their looks, but portrayed in roles of strength and for their intellectual capacity (Patricia, 2012, para. 13).

Need to Learn Balancing Skills

As we spin faster and faster into a digital world, it is of utmost importance that we learn to implement the practice of balancing ourselves and balancing our brains. There is a

concern that with digital technology that iGeneration youth and future generations will lose their ability to feel empathy because of too much focus on left brain activity. Periods of rest are critical to allow the brain time to restore, synthesize information and make connections. Brain studies explored in this research reveal the need for humans to counter the over emphasis on left brain activity we engage in with our digital consumption.   Time in nature, down time, healthy sleep habits, meditation, and quiet time are some of the essential practices that help to create this balance. We need to better understand the importance of this balance, for our physical and mental health. We need to better understand the necessity of unplugged time to balance plugged-in time.

Chapter 2 Review of the Literature

Historical Context and Timeline of Digital Technology

Some historians site the abacus, a counting tool used for arithmetic processes, created by the ancient Greeks in 3000 B.C., as being the origin of what would eventually lead to creation of the modern day computer (Schiel, 2009). Since ancient Greece, there were a myriad of mathematical computation devices invented and used through history. Notably, in 1742 French mathematician, Blaise Pascal, invented an adding machine. This adding machine was later refined and improved upon in 1823 by Charles Babbage when he developed what was called an "analytical machine" (Marshall, 2004, p.9). Babbage's analytical machine is considered today to be the grandfather of computers. It was not until the mid-1940s, however, that the first "computers" were actually built (Computer Hope, 2012). One early computer, considered by many to be the first electrical "digital" computer, was called the "ENIAC" (Electronic Numerical Integrator and Computer). It was invented by J. Presper Eckert and John Mauchly at the University of Pennsylvania. Construction of the ENIAC began in 1943 and was completed in 1946. The ENIAC occupied about 1,800 square feet and used about 18,000 vacuum tubes, weighing almost 50 tons (Computer Hope, 2012).

Given that the ENIAC, considered by many as the "first" digital computer was completed in 1946, it is truly mind boggling that a mere sixty-six years later in the current year of 2012, we have gone from one 50 ton computer to now having mini portable computers – aka smart phones – that are accessible to everyone and weigh a

couple ounces and fit into the palm of a hand. We can text, make a film, surf the Internet, post photos, get directions to a taco hut in Katmadu, buy a yacht, even make a phone call – all on our "WMD's" aka "Wireless Mobile Devices" aka mini-computer smart phones. It is truly breathtaking. At this rate, one can only wonder if we've gone this far in technological advancements since 1946, where we will be sixty-six years from now?

See Appendix A for a comprehensive timeline highlighting the rapid technological advancements that have occurred in the last sixty-six years.

Summary of Major Themes

The review of literature for this paper has been parceled into four subcategories for purposes of clarity and understanding the research: (1) general information about today's teenagers and their digital technology consumption; (2) positive effects of digital consumption; (3) negative effects of digital consumption; and (4) best practices and guidelines with regard to digital technology.

General information and Statistics on the iGeneration

Teenagers' consumption of digital media has experienced a staggering rate of increase in the last twenty years. In fact, today's iGeneration youth spend most of their waking hours using technology – on average, they spend **7 hours and 38 minutes a day** interacting with a digital device (Henry J. Kaiser Family Foundation, 2010, para. 1). This average includes school days.   If you include multi-tasking hours (using more than one device, i.e., texting while listening to iTunes) teens spend **10 hours and 45 minutes a**

day consuming content and interacting with digital devices. TV accounts for four of these digital media hours teens consume a day (Henry J. Kaiser Family Foundation, 2010, para. 1). According to a poll from August 2009, 22 percent of teenagers log on to their favorite social media site more than 10 times a day, and more than half of adolescents log on to a social media site more than once a day. Seventy-five percent of teens now own cell phones, and 25 percent use them for social media, 54 percent for texting, and 24 percent for instant messaging (O'Keeffe et al., 2011, para. 7).

The digital consumption activities that iGeneration youth primarily engage in are: socializing online with each other, gaming, blogging, visiting virtual worlds, texting, instant messaging, and creating. The ability to "create" digitally is an example of how the world is radically different than less than even a generation ago. iGeneration youth use technology to create websites, pictures, videos, music, to interact with each other and interact with the media. These new practices and tools were developed in this generation (Pederson, 2012).

The average teen processes 3,700 texts a month (Dokoupil, 2012, p.26). Teenage girls, however, send and receive more than 4,000 texts a month. Eighty percent of youths today own a mobile phone. The average age of a child that gets a cellphone today is age twelve, however, the average age continues to drop (Wisdom 2.0, 2011). Nearly a quarter of teens involved in a romantic relationship communicate with a boyfriend or girlfriend hourly between midnight and 5 a.m. using a cellphone or texting (Subrahmanyam & Greenfield, 2008, p.128). 7.5 million Facebook users are under the age of 13 and 5 million of these 7.5 million users are under the age of 11. Most college

students now text instead of using e-mail to communicate because e-mail takes too long

(Wisdom 2.0, 2011). Talking on the telephone has become archaic among iGen youth,

they much prefer texting or instant messaging. With iGeneration youths' time being

highly leveraged through multitasking with their digital devices, they often avoid actually

talking on the phone because it requires giving their full attention to a conversation, when

they do not really want to (Turkle, 2011). Within the last hour before bedtime, more than

one half of teens are texting (Rosen, 2012, p.214). One third of smartphone owners get

online before getting out of bed in the morning (Dokoupil, 2012, p.28).

Another phenomenon original to the digital age, is the creation of online identities.

A teen can create and online identity for oneself on a social media site, such as Google+

or Facebook, in which the teenager posts pictures, information, and updates. One can

also create an "avatar" - which is a graphical (often three dimensional) representation of a

person, an alter ego, or a character, that a teenager plays - such as in computer games or

virtual worlds. An avatar can also be two dimensional, such as when posting comments

on online communities.   Many iGeneration youth have more than one avatar and

multiple "identities" or social media accounts. Identity formation for iGen teens is

different than their pre-digital generations. They have many more platforms for

experimentation and reinvention of identities (Palfrey & Gasser, 2008, p.21). A teenager

today can create a new identity and go into an online community where people do not

know them and present themself in a strikingly different way than they do in their

"normal" life. A teenager, in fact, can have many different identities and avatars and

"be" all of them in one afternoon. For iGen youth, there is not a division between online

and offline identities, they exist simultaneously. These multiple identities inform their overall identity of self (Palfrey & Gasser, 2008 p.20). This possibility of greater exploration with identity can be very positive in terms of personal development, but, it comes with potential risk (Palfrey & Gasser, 2008 p. 21). In essence, today's teens have more freedom than any other generation to explore their identity, but, with this great freedom comes great risk.

Positive Effects of Digital Technology Consumption

There are many positive outcomes of digital technology consumption that this literature review has uncovered. These are broken down into five subcategories that include: (1) education, (2) social congregation, (3) content/digital literacy, (4) texting, and (5) cognitive enhancement.

Education

Digital technology is creating tremendous positive change and influences on education. Technology can be an excellent learning tool and can make learning more accessible to iGeneration learners and connect them content. Digital technology is possibly reaching students academically that were previously unreachable and has the potential capacity to "bridge the educational gap" that exists between social economic demographics. It also connects students to content in ways never possible through information available from the Internet and students' abilities to create their own connective creative content and projects.

Many schools are implementing digitally based projects and digital educational platforms as part of academic learning. Some schools successfully use blogs as teaching tools, which has the benefit of reinforcing skills in English, written expression and creativity. Middle and high school students are using social media to connect with each other on homework and group school projects.   Google Docs, Facebook, and similar social media platforms allow students to gather information and collaborate on assignments outside of the classroom (O'Keeffe et al., 2011, p.801). In a lesson plan, designed to engage iGen youth, a teacher permitted adolescent students to use songs from their iPod and connect it to a piece of literature allowed. This approach the project allowed them to connect to the content at a personal level and with their gadgetry. Students shifted gears from "iBored" to "I understand, and I remember" and the results were a marked increase of success for these students (Bauleke & Hermann, 2010, p.38).

Apple Computers launched, just this year (2012), "iBooks" - which are digital textbooks. Apple Computers are forerunners in creating educational apps not only on educational content and criteria, but also, also for students with learning disabilities, such as apps for autistic students.

The focus of this thesis, however, is not an exploration of digital education - suffice it to say that there is tremendous potential positive impact of digital technology on education, and as with digital technology in general, we are just pioneering implementation and usage in schools.

Social Congregation

Dr. Danah Boyd, a senior researcher at Microsoft, professor at NYU, and a fellow at the Berkman Center for Internet and Society at Harvard - is an outspoken advocate for the digital world, calling it a "safe place for teenagers" (Paul, 2012, para.4). She is a widely respected figure in social media research and, at her current age of thirty-four, she is considered somewhat of a rock star emissary from the online and offline world of teenagers (Paul, 2012, para.3).

Boyd believes that teenagers today are reacting online, largely to social changes that have taken place offline.   "Children's ability to roam has basically been destroyed," says Boyd. "Letting your child out to bike around the neighborhood is seen as terrifying now, even though by all measures, life is safer for kids today" (Boyd as cited by Paul, 2012, para.8). Teens like to hang out, they like to congregate. iGen youth today congregate on social media sites for conversations, flirtations, immature humor, and social exchanges instead of hanging out in the local parking lot of the five-and-dime of yesteryear (Paul, P. 2012, para. 9). This need to hang out socially in groups is perfectly normal and healthy teenage behavior.

Boyd herself came from a troubled childhood and broken home. She grew up feeling isolated and socially rejected. As a youth, she was smart, she was gay, and lived in rural America. "The Internet was my saving grace … at age 16 I thought I would be dead by 21" (Boyd as cited by Paul, 2012, para. 12), said Boyd. "I would spend my teenage nights talking to strangers online, realizing there were other smart kids out there" (Boyd as cited by Paul, 2012, para. 14).   As a teenager, Boyd often reached out to adults

online, many of whom acted as de facto counselors and mentors. Boyd's own positive

experience on platforms like Usenet and Internet Relay Chat fuels her dismay over

attempts to restrict teens' use of the Internet today (Paul, 2012, para. 15).

Boyd asks how teenagers can be encouraged to become politically active when so

much of political activity and political movements are now taking place online – a place

they are restricted from. She wonders whether homosexual teens, grappling with their

sexuality, might benefit enormously from chatting online with adults who have been

through similar situations. "There are lots of places where it's extraordinarily helpful for

kids to talk to adults" (Boyd as cited by Paul, 2012, para.17).

Boyd believes that grown-ups' panic about teenage online behavior distracts from

the potential benefits. Bullying, Boyd notes, occurs more frequently in schools than on

the Internet, and in neither case, according to data she cites, is it on the rise (Paul, 2012,

para. 18). "She was the first to say that the teenagers at risk offline are the same ones

who are at risk online," said Alice Marwick, a postdoctoral researcher at Microsoft and

colleague of Boyd's. "It's not that the Internet is doing something bad to these kids, it's

that these bad things are in kids' lives and the Internet is just a component of that"

(Marwick as cited by Paul, 2012, para. 27).

> The most deadly misconception about American youth has been the sexual
>
> predator panic. The model we have of the online sexual predator is this
>
> lurking man who reaches out on the Internet and grabs a kid. And there is
>
> no data that supports that. The vast majority of sex crimes against kids
>
> involve someone that kid trusts, and it's overwhelmingly family

members… A teenage girl who has been sexually molested by an uncle

and who has nobody she can talk to in her hometown might benefit greatly

with being able to communicate with a counselor online anonymously.

(Boyd as cited by Paul, 2012, para. 20)

With both troubled teenagers and model youth, Boyd believes that adolescent

online behavior is a reflection of what teenagers' social lives have always been:

friendship, gossip, flirting, transgressing and keeping it all - good and bad - from parents

(Paul, 2012, para. 28). "We need to give kids the freedom to explore and experience

things online that might actually help them," she added. "What scares me is that we don't

want to look at the things that make us uncomfortable. So rather than see what teenagers

are showing us online about bullying and suicide and the problems they're dealing with

and using that information to help them, we're making ourselves blind to it" (Boyd as

cited by Paul, 2012, para. 10).

A 2011 clinical report from the American Academy of Pediatrics on the impact of

social media on children and adolescents outlines their positive findings of the effects of

social media:

The engagement in social media and online communities can enhance

communication, facilitate social interaction and help develop technical skills.

They can help tweens and teens discover opportunities to engage in the

community by volunteering, and can help youth shape their sense of identity.

These tools also can be useful adjuncts to - and in some cases are replacing -

traditional learning methods in the classroom. (American Academy of

Pediatrics, 2011, para. 13)

Creative Content/Digital Literacy

Another positive outcome of the digital age is the creation of endless "content" on the

web. Blogs, websites, chatting, texting, e-mailing, are all a part of "digital literacy". In

essence, it may not be academic papers, but, teenagers are writing content. They may not

be academically literate, but, they are digitally literate. According to a 2007 report from

Pew Internet & American Life Project, 64 percent of teenagers between the ages 12 to 17

have participated in at least one form of content-creation activity online (Pew Internet &

American Life Project, 2012, para.1). 39 percent of teenagers share their artistic

creations online, including artwork, photos, stories, or videos. Nineteen percent of teens

remix content they find online into their own artistic creations (Pew Internet & American

Life Project, 2012, para.2).

Dr. Henry Jenkins, an American media scholar, formerly director of MIT's

Comparative Media Studies program, currently a professor at USC's school of

Communication, Journalism, and Cinematic Arts, summarizes below gleaned in a blog

posting, the power of the iGeneration's "new literacy":

The real gap between tomorrow's digital haves and have-nots will be a lag in competence

and confidence in the fast-paced variegated digital universe building and breeding outside

schoolhouse walls…. Today's digital youth are in the process of creating a new kind of

literacy; this evolving skill extends beyond the traditions of reading and writing into a

community of expression and problem- solving that not only is changing their world but ours, too… In this new media age, the ability to negotiate and evaluate information online, to recognize manipulation and propaganda and to assimilate ethical values is becoming as basic to education as reading and writing. (Jenkins, 2007, para. 5)

Texting

Texting is the platform of the moment. iGen teens text so many hours of the day that "text speak", or text acronymic vernacular, plugs into their everyday lives and is a primary form of communication.   The average teen processes 3,700 texts a month (Dokoupil, 2012).   The following are some examples of high frequency acronyms commonly used in texting: OMG = Oh my god; LOL = Laugh out loud; GTG = got to go; BRB = be right back; LMAO = Laugh my ass off; L8R = later; U = you; Y = why; IDK = I don't know; f2f = face to face. The grammatical norm in texting amongst youth is to abbreviate and write shortened grammatically incorrect sentences. Despite this grammatical inaccuracy, the fact is that kids are writing their thoughts and feelings and communicating them with each other. And, although texting is grammatically incorrect, teenagers can codeswitch to English quite easily (Katz, 2012, personal communication). On the panel of teenagers at the Wisdom 2.0 Conference in fall of 2011, one of the teenaged panelists spoke about texting, "I know this sounds strange, but I can feel what kind of a mood my friend is in and how she is feeling about something based on how she is texting in that moment" (Wisdom 2.0, 2011). Texting can be empathic communication for teenagers.

Cognitive Enhancement

When it comes to cognitive skills, researchers have found that electronic media, particularly video games, can enhance visual spatial skills, such as visual tracking, mental rotation, and target localization. Gaming may also improve problem solving skills (Schmidt & Vandewater, 2008, p. 66). A 2009 review of studies published on the cognitive effects of video games found that gaming led to significant improvements in performance on various cognitive tasks, from visual perception to sustained attention. This surprising result led the scientists to propose that even simple computer games like *Tetris* can lead to "marked increases in the speed of information processing" (Lehrer, 2010, para. 9). At the University of Rochester, researchers found that players of some fast-paced video games can track the movement of a third more objects on a screen than non-players. They say the games can improve reaction and the ability to pick out details amid clutter. Games can have a strong rehabilitative and educational power (Richtel, 2010, para. 53). An influential study, published in *Nature* in 2003, demonstrated that after just 10 days of playing *Medal of Honor,* a violent first-person shooter game, subjects showed dramatic increases in visual attention and memory (Lehrer, 2010, para. 9). Imaging studies show the brains of Internet users become more efficient at finding information. Cellphones and computers have transformed life for many workers and entrepreneurs. They let people escape their cubicles and work "virtually" anywhere. They shrink distances and handle countless mundane tasks, freeing up time for more exciting pursuits (Richtel, 2010, para. 15).

A 2009 study by neuroscientists at the University of California, Los Angeles, found that performing Google searches led to increased activity in the dorsolateral prefrontal cortex of the brain, when compared with reading a "book-like text."   The dorsolateral brain area underlies precise talents, such as selective attention and deliberate analysis. In other words, it is exercising the very mental muscles that make us smarter (Lehrer, 2010, para. 10). Baroness Susan Greenfield, a professor at Oxford University, who studies the science of mind and our growing use of technology, argues that very good things are emerging from our experiences with technology. These positive outcomes include a higher IQ, a better memory, and faster processing of information (Rosen, 2012, p.201).

Negative Effects of Digital Technology Consumption

This review of literature brought to light many potential adverse effects of digital consumption. This section reviewing the negative effects of digital usage is broken down into eleven subcategories including: (1) the brain, (2) attention deficit, (3) tethered, (4) emotional health, (5) aggressive behavior, (6) addiction, (7) cyberbullying, (8) sexting, (9) physical health, (10) piracy, and (11) etiquette.

The Brain

From roughly the ages of ten to the mid-twenties, the human pre-frontal cortex of the brain is still under construction. The pre-frontal cortex rules our executive functioning, higher thinking, and decision making processes. Therefore, iGen teens that are online engaging in very public social forums, are doing so without fully functioning pre-frontal

cortices. This is potentially problematic. Because teens' pre-frontal cortices are still

under construction, their amygdala, reactionary impulse part of the lower brain, gets more

attention. The amygdala triggers teens into fight, flight, or freeze, reactions versus higher

logical thinking. In brain studies, when teens' brains are scanned when they are solving

an emotional problem, their amygdala lights up – aka triggers impulsive reaction.

Whereas in adults, when presented with the same emotional problem during a brain scan,

the frontal lobe section of their brain lights up - aka, they think through the situation to

make a good decision (Pederson, 2012).

Technology makes teenagers' brain development and developmental tasks more

complicated today than ever before. Two primary developmental tasks of teenagers are

(1) "identity formation" and (2) "decision making":

    (1)   With "identity formation", teens are trying on different identities

    figuring who they are. This is a time when they move from family to peer

    based belief systems. For the iGeneration, the digital world significantly

    changes this developmental task of identity formation because the digital

    world gives them more places to try on identities such as virtual worlds,

    creating different social media identities, or taking on an avatar identity in

    a digital game. Youth are using digital technology and social networking

    as a vehicle to establish place within their social community as well as

    identity. (Pederson, 2012)

    (2)   In terms of the developmental task of "decision making",

    adolescence is a time when teenagers are developing their pre-frontal

cortex and learning decision making skills. However, in today's digital

world, teenagers are learning from each other primarily online, this means

they are not interacting as much with the adults to see if they are making

good decisions. Today's digital world also changes teenagers

developmental task of decision making because when posting something

online they do not see visual reaction of what their behavior is causing

(cannot see someone's face online) and this is takes away their ability to

feel empathy because they do not see the immediate effect of their

behavior on another human being. (Pederson, 2012)

Because teens have a limited capacity for self-regulation and are susceptible to

peer pressure, they are at some risk as they engage in and experiment with digital media.

They can find themselves on sites and in situations that are not age-appropriate, and

research suggests that the content of some social media sites can influence youth to

engage in risky behaviors (American Academy of Pediatrics, 2011, para.14).

It is far too young in our understanding of digital technology to really know how

it fully impacts the brain. We still do not yet know wholly the risks and benefits.   We

know that each technology a person uses engages the brain. When a person multi-tasks

with several digital gadgets, the brain is, therefore, even more engaged – perhaps near

maximal load amount of neuronal activity (Rosen, 2012, p.204). Studies are now

showing that technological activities such as video game playing have residual

neurological effects on the brain for a period of time after the game is completed. So, if

you have an iGeneration youth playing a video game, surfing the Internet, texting, and

listening to music all at the same time – their brain is literally buzzing overloaded with neurological activity and stopping all the activity does not necessarily stop the overload (Rosen, 2012, p.204).

Most of our interaction with the computer screen activates left brain, not right brain activity. Texting, for instance, draws on only one side of the brain to the detriment of youth. Texting is left brain, it is linear, it does not the take in the "whole" of who you are interacting with (Siegel, 2011). The brain develops by the stimulation given to us. It stimulates the neurons. The genes unravel, structural change happens. This is called "neuro plasticity". So, if you have someone who is texting all the time, or spending seven and a half hours in front of a screen, that is non-verbal interaction time, you are using the left brain to type out the linguistic information but the right brain is passive (Siegel, 2011).

Attention Deficit

Attention Deficit Disorder (ADD) is a syndrome (usually diagnosed in childhood) characterized by persistent patterns of impulsiveness, short attention span, often hyperactivity, and can interfere with academic, occupational, and social performance. The rise in ADHD diagnosis had risen 66 percent in the last decade. "There is a cause and effect," comments Elias Aboujaoude, a psychiatrist at Stanford University School of Medicine. "There's little doubt we're becoming more impulsive," says Aboujaoude, and on reason for this is technology use (Aboujaoude as cited by Dokoupil, 2012, p.29). iGeneration students definitely display an increase in attention problems and an inability to delay gratification (Bauleke & Hermann, 2010, p.33).

The consumption of digital media, from TV to texting, has exploded with the onset of the digital era.   In 2008, people consumed **three times** as much information each day, than they did in 1960 (Richtel, 2010, para. 16). This means, human brains have three times the amount of input data to process, reaching this rate in a time span less than fifty years. This is truly astounding. Never before in history have humans experienced such an acceleration of data input to process. We are now constantly shifting our attention. Computer users, while at work, change windows or check e-mail or other programs nearly 37 times an hour and visit an average of 40 websites a day (Richtel, 2010, para.18). This nonstop interactivity is one of the most significant shifts ever in the human environment, said Adam Gazzaley, a neuroscientist at the University of California, San Francisco. "We are exposing our brains to an environment and asking them to do things we weren't necessarily evolved to do," he said (Gazzaley as cited by Richtel, 2010, para.18).

Although digital consumption may or may not officially contribute to the medical diagnosis of Attention Deficit Disorder, attention deficit behavior and attention deficit brain function are serious concerns resulting from digital consumption. Information overload causing distraction, created by the digital age, is supported more and more by research.   A study at the University of California, Irvine, found that people interrupted performing a task, by answering e-mail, reported significantly increased stress compared with those left to focus. Stress hormones have been shown to reduce short-term memory, said Gary Small, a psychiatrist at the University of California, Los Angeles (Richtel, 2010, para. 50).

The typical electronic screen is an "ecosystem of interruption technologies". We glance at our e-mail inbox, we peek at Twitter, we waste hours on Facebook, and lurch from site to site, because we constantly crave the fleeting pleasure of new information. This is not really the fault of the Internet. The online world has merely exposed the feebleness of human attention, which is so weak that even the most minor temptations are all but impossible to resist (Lehrer, 2010, para.7).

Multi-tasking is the notion that people can do several tasks at the same time. While multitasking seemingly makes people more productive, research shows otherwise. Heavy multi-taskers have more trouble focusing and shutting out irrelevant information, scientists say, and they experience more stress. Scientists are discovering that even after the multitasking ends, fractured thinking and lack of focus persists. In other words, this fractured thinking is how your brain is functioning even when *off* computers (Richtel, 2010, para. 12).   Some research shows there is actually no such thing multi-tasking, that all we can do is "task switch". We lack the ability to pay full attention to two tasks at a time (Rosen, 2012, p. 106). Research shows that those who prefer to task switch more often, are those who show signs of mania (Rosen, 2012, p. 102). In one study on multi-tasking, students who glanced at their Facebook page just once during a timed 15 minute study period performed worse than those who never looked at their Facebook page (Rosen, 2012, p. 207).

Technology writer, Nicholas Carr in his recently published book, *The Shallows: What the Internet is Doing to Our Brains*, argues that we are sabotaging ourselves, trading away the seriousness of sustained attention for the frantic superficiality of the

Internet. Carr observes that the mere existence of the online world has made it much

harder to engage with difficult texts and complex ideas. "Once I was a scuba diver in a

sea of words," Carr comments. "Now I zip along the surface like a guy on a Jet Ski"

(Carr as cited by Lehrer, 2010, para. 4). Carr firmly believes that the negative effects of

the Internet outweigh its efficiencies. He believes that the search engine has fragmented

our knowledge. "We don't see the forest when we search the Web," he writes. "We don't

even see the trees. We see twigs and leaves" (Carr as cited by Lehrer, 2010, para. 6).

One of Carr's most substantial pieces of evidence comes from a 2008 study that reviewed

34 million academic articles published between 1945 and 2005. The digitization of these

journals made it easier to find information, but, it also coincided with a narrowing of

citations, with scholars citing fewer previous articles and focusing more heavily on recent

publications (Lehrer, 2010, para. 6). Nicholas Carr believes that computers are

destroying our powers of concentration. In *The Shallows*, Carr argues that our mental

malleability has turned us into servants of technology, our circuits reprogrammed by our

gadgets (Lehrer, 2010, para. 8).

Tethered Lives

For thirty years, Sherry Turkle, professor of Social Studies of Science and Technology at

MIT, has been studying the social-psychological effects of technology and how it has

been changing human behavior and relationships. Turkle is a "cyber anthropologist". In

her third book on this topic, *Alone Together* (2011), Sherry examines human relationships

with the digital and robotic world. For this book, Turkle interviewed more than 450

people about their lives online, most of them in their teens and 20's. She explores her

concerns as to what she perceives as our culture's addiction to the web and digital

gadgetry. Turkle uses the term "tethered" to describe our relationship to digital gadgetry

– or rather, our inability to put electronic devices down (Turkle, 2011, p. 155).

In this new regime, a train station (like an airport, a café, or a park) is no longer a

communal space but a place of social collection: people come together but do not speak

to each other. Each is tethered to our mobile device and to the people and places to

which that device serves as a portal. (Turkle, 2011, p.155)

Turkle further explores this concept of tethering as it applies to the

parent/adolescent relationship. Cellphones and texting makes it easier for parents to keep

instantly in touch with their teens, but, it also potentially robs adolescents of autonomy

and important steps in individuating.

In the modern, technologically tethered variant, parents can be brought along in an

intermediate space, such as created by the cell phone, where everyone important is on

speed dial. In this sense … adolescents don't face the same pressure to develop the

independence we have associated with moving forward into young adulthood. (Turkle,

2011, p. 173)

Turkle laments that we are always "on", we have no down time. Especially those

with a smart phone, it keeps us connected no matter where we are. In *Alone Together,*

Turkle provides numerous interviews with people speaking about their 24/7 tethered

relationship with a smart phone or digital device. They no longer feel "normal" if they

do not check it all day long.

Where do you put your cell phone when you go out? Where you put it may well indicate how tethered and dependent you are to it. Researchers have now labeled a new "phantom-vibration syndrome", which happens when a person "feels" their smartphone vibrate, notifying them of a new text, call, or e-mail, when in fact nothing has happened (Dokoupil, 2012, p. 27). This disorder has officially been sanctioned "vibranxiety" wherein we exhibit delusional thinking about our cell phones (Rosen, 2012, p. 175).

Turkle notes that the benefits of technology on our society are undeniable. A cell phone is probably the best assurance parents can have. For those with college-age children, they can constantly keep in contact through all sorts of features on mobile devices. But beyond the effect of tethering, Turkle questions what have social media and our über connected society done to our values? She notes:

These days, cultural norms are rapidly shifting. We used to equate growing up with the ability to function independently. These days always-on connection leads us to reconsider the virtues of a more collaborative self. All questions about autonomy look different if, on a daily basis, we are together even when we are alone. (Turkle, 2011, p. 169)

Emotional Health

In his book *iDisorder*, Larry D. Rosen, PhD. connects DSM diagnosable psychiatric disorders to causal origins related to digital technology over-consumption. Dr. Rosen believes that digital technology coerces us to act in way "that may be detrimental to our mental wellbeing" (Rosen, 2012, p.5).   Dr. Rosen's discusses how the Internet has made it easy for narcissistic expression through self-aggrandizing using social media platforms. Narcissists post constant updates about themselves. He observes how constantly

checking your smart phone can lead to obsessive-compulsive disorder. All the medical

data available online has created a new class of hypochondriacs that Dr. Rosen calls

"cyberchondriacs" (Rosen, 2012, p.142). He explores voyeurism and the rise of reality

television. He also examines how the constant technology consumption may rewire our

brains. One brain study he explores calls the impact on memory the "Google effect," that

is, an inability to remember facts brought on by the realization that they are all available

simply by looking them up on Google (Rosen, 2012, p. 202). The chapters in *iDisorder*

correspond with psychiatric disorders including: Narcissistic Personality Disorder (NPD),

Obsessive Compulsive Disorder (OCD), Addiction, Depression, Bi-Polarity, Attention

Deficit Disorder (ADHD), Hypochondriasis, Eating Disorders, Paranoid Schizophrenia,

and Voyeurism. At the end of each chapter, Dr. Rosen proposes helpful suggestions of

actions to take to counter-act the propensity of these disorders. Dr. Rosen's suggestions

are further reviewed in the "best practices" section of this paper.

Over the past 20 years, a number of studies and publications indicate a strong link

between emotion and the teenage brain (Bauleke & Herrmann, 2010, p.34). Media usage

affects psychosocial variables such as academic performance and personal adjustment in

a negative fashion (Roberts & Foehr, 2008, p.26). Our range of expression is constrained

by our gadgets and platforms. We are not happy or intimately connected anymore.

Instead of talking on the phone, we send a text. Instead of writing wistful letters, we blog

(Turkle, 2011). Youth who play a lot of video games, particularly first-person shooter

games, tend to have diminished empathy (Rosen, 2012 p. 183). Young people who are

less contented or less satisfied with aspects of their lives tend to engage in higher levels

of media consumption than do their more contented counterparts (Roberts & Foehr, 2008, p.26).

An ironic negative effect of digital technology on teenagers and on humanity is that of isolation. Even though in today's world we are more "connected" than ever before in history with our "digital global village", humans are lonelier and suffer from more depression than ever before in history (Marche, 2012, p.62). In a recent article in the May 2012 of the *Atlantic Monthly* magazine, Stephen Marche explores the relationship between Facebook users and loneliness. One out of every thirteen people on Earth is a Facebook user – more than half of which log on every day. Marche quips that, "In a world consumed by ever more novel modes of socializing, we have less and less actual society. We live in an accelerating contradiction: the more connected we become, the lonelier we are" (Marche, 2012, p.62). In 1950, less than 10% of Americans households had only one person, by 2010, 27% of households had just one person (Marche, 2012, p.62). The "Internet paradox" is a term coined by researchers at Carnegie Mellon that showed how increased Internet usage coincided with increased loneliness (Marche, 2012, p.66). Marche points out, however, that people who experience loneliness on Facebook, can also be loners away from Facebook too. Marche notes one of the shallower aspects of Facebook is how people's profiles often present a phony self, or a self that is constantly projecting images of upbeat happiness that simply is not real. "Curating the exhibition of self (on Facebook) has become a 24/7 occupation" (Marche, 2012, p.69). Marche postulates that being happy all the time and attempting to be happy all the time for your Facebook profile is exhausting and inauthentic. The reality is, the

depth of one's social network outside of Facebook - real time face-to-face connection - is what really matters (Marche, 2012, pp.67-68).

According to the American Academy of Pediatrics, researchers have proposed a new phenomenon called "Facebook Depression," defined as depression that develops when preteens and teens spend a lot of time on social media sites, such as Facebook and then exhibit classic symptoms of depression (O'Keeffe et al., 2011, p.802). Acceptance by and contact with peers is an important element of adolescent life. The intensity of the online world is thought to be a factor that may trigger depression in some adolescents (O'Keeffe et al., 2011, p.802).   iGeneration youth spend a large amount of time online and use a variety of technologies that may become prime fodder for depressive symptoms (Rosen, 2012, p. 79).

Aggressive Behavior

One serious negative consequence of digital technology is that of the effect of violent games on teenagers – especially male teenagers. Violent video games allow players to attack and kill one another in graphic bloody ways.   Studies show that prolonged exposure to violent media leads to aggressive behavior, anxiety, bullying, and desensitization (Knorr, 2009, para. 3). Aggressive video gaming affects kids negatively. The more aggressive behavior kids see, the more it becomes an acceptable way to settle conflicts. They may even become less sensitive to those who suffer from real violence. This cause-and-effect relationship is now part of the American Academy of Pediatrics' official policy to help doctors and parents create a "safer" media environment for kids. Violent games were at first designed as video games for soldiers going to war. They

were designed to condition the soldiers to shoot immediately and would get rewards for

shooting fast and punishments for not shooting fast enough. There is a correlation

between users of violent games and anti-social behavior (Katz, 2012, personal

communication). One of the more definitive longitudinal studies to date, that examines

the effects of exposure to online videogame violence on adolescents' attitudes toward

violence, empathy, and aggressive behavior, was conducted in China by Dr. Ran Wei,

PhD. The results of this study published in 2007 demonstrate the direct correlation

between exposure to violent videogames with greater tolerance of violence, a lower

emphatic attitude, and more aggressive behavior, in youth (Wei, 2007).

Addiction

The stimulation of technology usage provokes excitement - a dopamine squirt - that

researchers say can be addictive (Richtel, 2010, para. 9). "The computer is like electronic

cocaine," says Peter Whybrow, of UCLA Department of Neuroscience and Human

Behavior. It fuels cycles of mania followed by depressive stretches (Whybrow as cited

by Dokoupil, 2012, p. 27). Digital technology's instant communication and information

abilities give us instant gratification and we seek more and more. "Technology is

rewiring our brains," says Nora Volkow, director of the National Institute of Drug Abuse

and one of the world's leading brain scientists (Volkow as cited by Richtel, 2010,

para.13). Volkow and other researchers compare the appeal of digital stimulation to that

of the addiction to food and sex, both of which are essential, but counterproductive in

excess (Richtel, 2010, para.13).   Research shows that Internet use is not just another

delivery system. It is creating a new mental environment, a digital state of nature where

the human mind becomes a spinning instrument panel and few will survive unscathed. "This is an issue as important and unprecedented as climate change," says Susan Greenfield, a pharmacology professor at Oxford University (Greenfield as cited Dokoupil, 2012, p.27).

One definition of addiction is when other people and other activities in your life begin to suffer because of something you know you should cut back on, but do not (Greene, 2011, para.12). In terms of digital technology usage, a person needs to perhaps "cut back" when they notice they have urges such as to share everything they experience digitally; they find themselves wanting to check their phone even while you're talking with someone in person; they have the feeling that something has not really happened until they post it on Facebook; when they feel anxious or isolated if they have been offline for an extended period of time, and if they are creating Facebook status updates in their head while you they experiencing something live in person (Greene, 2011, para.19). "We may appear to be choosing to use this technology, but in fact we are being dragged to it by the potential of short term rewards. Every ping could be a social, sexual, or professional opportunity, and we get a mini-reward, a squirt of dopamine, for answering the bell. These rewards serve as jolts of energy that recharge the compulsion engine" (Dokoupil, 2012, p. 28).

From recent studies in China, brain scans show that the brains of Internet addicts look like the brains of drug and alcohol addicts. "Structural abnormalities in gray matter" were found - which were basically shrinkage of 10 to 20 percent in the area of the brain responsible for processing speech, memory, motor control, emotions, and sensory

information. These studies also showed that the more time Internet addicts spent online, the more the brain showed signs of atrophy (Dokoupil, 2012, p. 28-29).

In 2007, the diagnosis of "video game addiction" or "Internet addiction" as formal psychological disorders were proposed and rejected for the *Diagnostic and Statistical Manual of Mental Disorders* or the DSM (American Psychiatric Association, 2007, para. 2). However, when the new DSM is released next year, "Internet Addiction Disorder" will be included for the first time in the appendix, listed as needing "further study" (Dokoupil, 2012, p.27, para. 8). Technology addicts use their devices or the Internet forty to eighty hours per week, sometimes going on a "net binge" in which a single session can last over twenty hours (Rosen, 2012).

A seemingly common challenge for some parents of (particularly of male) iGeneration teenagers is that their child is "addicted" to playing a game. These persistent game players are called a "gamers". They isolate themselves from family, friends, social events, and even school, preferring instead to engage with a particular computer game. The teens who are most at risk of being addicted to the Internet are the ones who are depressive and socially withdrawn. It is important to make sure that your child is socially connected and has interests that do not include technology (Pederson, 2012).

For a listing of some treatment centers in the United States currently treating internet and gaming addiction, please see Appendix J.

Cyberbullying

Cyberbullying is a serious negative facet of social media and teenager's use of digital technology. Legally, the term "bullying" defines situations with unwanted aggressive

behavior involving minors. When an adult is involved in these situations, it is called "harassment" (Pederson, 2012).   Cyberbullying is deliberately using digital media to communicate false, embarrassing, or even hostile information about another person. It is the most common online risk for all teens and is a peer-to-peer risk (O'Keeffe et al., 2011, p.801).

Approximately 20 percent of kids ages 10 to 18 say they have been cyberbullied sometime in their life. About one in five teens ages 11 to 18 have admitted to cyberbullying others. Teenagers between the ages 14 to 17 experience the most instances of online harassment and bullying (Katz, 2012, personal communication). Bullying and cyberbullying cuts across all socio-economic demographics. Most teens who are bullies in middle and high school are socially "second tier" and trying to earn their way up the social ladder (Pederson, 2012). Examples of cyberbullying behavior that frequently happens is:

- A teen female student leaves her smartphone unattended on a bench, a male student picks up her phone and texts her contact list that "she" had had sex with another male student.

-A teen girl shares her passwords with a good friend; then they get into an argument and the ex-friend logs onto her social media accounts and posts embarrassing information about her.

-"For fun" two teens create a Facebook page that lists all the weird personality traits of a socially awkward fellow student. Many other students "like" this page and post additional derogatory comments.

-A gay male teen gets pestered with constant insulting homophobic texts from numbers he does not recognize.

Cyberbullying can cause profound psycho-social outcomes including depression, anxiety, severe social alienation, and ultimately suicide (O'Keeffe et al., 2011, p.801). Amongst teenagers, it is common for them to experience bullying or taunting and related feelings of depression, isolation, and hopelessness as a result of forwarded texts, sexts, or pictures that went viral without the consent of the individual(s) involved (Segool & Crespi, 2011, p.31). For teens who have been severely bullied, studies show there is poorer long term mental health for these individuals. There is a connection between girls who are bullied then becoming the victims of domestic violence in relationships. There is also a correlation between boys who are bullies then becoming perpetrators of domestic violence (Pederson, 2012). Statistically, for girls who do the bullying - there is a correlation to them later having eating disorders and participating in sexual promiscuity (Pederson, 2012).

On July 1st, 2012, Seth's Law (AB 9) and (AB 748) anti-bullying measures became law in the State of California. Seth Walsh was a 13 year-old who committed suicide after being the victim of endless bullying and cyberbullying by his peers for being gay. Seth's mother repeatedly went to his school for help regarding this harassment, but the school would not take action. Seth's Law now requires California public schools (not applicable to private schools) to follow mandates about cyber bullying. Public schools must now have clear cyberbullying policies and consequences, it holds schools

responsible for identifying bullying, and decreases time frame that they have to respond (Pederson, 2012).

To find out more about cyberbullying laws and guidelines on what do to if your child is being cyberbullied, www.cyberbullying.us is an excellent resource.

Sexting

Sexting can be defined as the act of sending, receiving, or retaining, sexually explicit text messages, pictures, or videos, using a cellphone or other digital media technology. Over 20% of teenagers today report either having sent or received a sext (Segool & Crespi, 2011, p.31). The Pew Research Center's Internet and American Life Project study found that when looking at just 17 year-olds statistics that almost 40% of these teens reported having either sent or received a sext (Rosen, 2012, p.186). Reasoning and judgment skills are still developing during adolescence, and poor planning, decision making, and lack of understanding risks of one's actions are common for teenagers. In regard to sexting, few teens consider that a single text message can be forwarded in rapid succession by recipients, resulting in widespread distribution even if it was intended only for private exchange (Segool & Crespi, 2011, p.31). Few teenagers realize that sexting may violate child pornography laws and has potential serious legal repercussions (Segool & Crespi, 2011, p.31).

Teens experience emotional distress, alienation, and loss of privacy following the transmission of intimate images that are virally are spread beyond the intended recipient. Advances in technology facilitate broad and rapid dissemination of images, which greatly increases the risk that individuals depicted in texts will be targeted for social and

emotional abuse amongst their peers. There have been cases of suicide precipitated by

social rejection and bullying following sexting incidents (Segool & Crespi, 2011, p.31).

Some teens who have engaged in sexting have been threatened or charged with

felony child pornography charges, although some states characterize these charges as

juvenile law misdemeanors. Teens can be suspended from school for participating in

sexting. It is also important to note, sexting can be kept as a private form of

communication between two or more people. (O'Keeffe, 2011, p. 802)

Physical Health

Excessive use of electronic media is reported to be associated with long-lasting adverse

effects on health like obesity, or lack of regular exercise, or unspecific symptoms like

tiredness, stress, concentration difficulties and sleep disturbances (Milde-Busch et al.,

2010, p.1). Sitting in front of a computer screen or with digital gadget on the couch for

long periods of time can lead to loss of exercise, increased risk of carpal tunnel syndrome,

and eye or back strain (Rosen, 2012, p.67).

In 2011, the American Academy of Pediatrics released their "Policy Statement on

Children, Adolescents, Obesity, and Media":

Obesity has become a worldwide public health problem. Considerable research

has shown that the media contribute to the development of child and adolescent obesity,

although the exact mechanism remains unclear. Screen time may displace more active

pursuits, advertising of junk food and fast food increases children's requests for those

particular foods and products, snacking increases while watching TV or movies, and late-

night screen time may interfere with getting adequate amounts of sleep, which is a known

risk factor for obesity. Sufficient evidence exists to warrant a ban on junk-food or fast-food advertising in children's TV programming. Pediatricians need to ask 2 questions about media use at every well-child or well-adolescent visit: (1) How much screen time is being spent per day? and (2) Is there a TV set or Internet connection in the child's bedroom? (American Academy of Pediatrics, 2012b, para.1)

Eating disorders such as anorexia nervosa and bulimia have long been correlated to media images that sell thinness and unrealistic images of perfection as ideal measures of beauty. It appears that images in video games can lead to eating disorders as well. Female game characters are often depicted as impossibly thin and voluptuous and male game characters are idealized and overly muscular (Rosen, 2012, p.157).

Sleep patterns are often interrupted and shortened with technological consumption. The average amount of sleep children and adolescents get a night has declined over the last two decades (Henry J. Kaiser Family Foundation, 2009, p.1). Experts recommend nine hours of sleep a night for teenagers, whereas the average teenager today gets less than seven and a half. Ninety-five percent of people use some sort of electronic device, a few nights a week, right before they go to bed (Rosen, 2012, p.214). Although there are many reasons for the lack of adequate sleep among children, media use is frequently cited as a major culprit.   Media use that involves excitement, suspense, drama, and conflict, is known to be associated with physiological changes consistent with increased stress and arousal hormones. The secretion of these hormones is linked with increased delay of sleep and poor sleep quality. Exposure to light while looking at a screen suppresses melatonin secretion, which delays sleep onset. Furthermore, physical activity, which

promotes good sleep can be displaced by media use (Henry J. Kaiser Family Foundation, 2009, p.3).

Nearly every health problem or concern can be brought on or exacerbated by inadequate sleep: from obesity, to aggression, to hyperactivity. The brain needs sleep time to consolidate and restore. The bottom line is that most teens and adults are not getting enough sleep and sleep is essential (Rosen, 2012, p.214). Shortchanging sleep has serious adverse consequences. American children get too little sleep, with major adverse implications for their cognitive ability, judgment, behavior and physical health (Henry J. Kaiser Family Foundation, 2009, p.2).

Piracy and Plagiarism

In 1999, at age nineteen, Shawn Fanning, dropped out of college, to launch his beta version of a peer-to-peer, P2P, file sharing code called "Napster" that allowed the user to digitally download music for free. Within sixteen months after its launch, more than 30 million young people were using Napster to swap music for free. Napster had a tremendous impact on the music industry. Music sales rapidly declined and ultimately billions of dollars in revenue were lost.   Napster has since shut down, but P2P free file sharing, or piracy, continues today - even though it is illegal. Despite the risk of liability, and despite awareness of the illegality of their actions, most young people persist in downloading music and other forms of media. P2P free file sharing services continue to thrive (Palfry & Gasser, 2012). In 2003, a study revealed that two thirds of all college students admitted to downloading music for free. Why are so many youth persistently engaging in large-scale copyright infringement? One answer is that many digital natives

– not to mention some adults – are confused about the copyright laws. Also, the general philosophy of youth engaging in P2P file sharing is that if it's on the Internet, it's available to them for free. Why pay for it when they can simply download it (Palfrey & Gasser, 2012). There are complex answers to this question that are further explored in John Palfrey and Urs Gassers' book *Born Digital*.

Plagiarism is also a serious tempting potential for iGeneration youth. Information on virtually any subject is available just a few clicks away, and it is simply too easy for teenage students to copy and paste information, change a couple words, then submit it as their own work. Educators and parents must reinforce the importance of appropriate cyber research and sourcing, and firmly guide students in using research to create their own material.

Etiquette

Mobile technology has made each of us "pausable". Our face-to-face conversations are routinely interrupted by incoming calls and text messages.   In the world of paper mail, it was unacceptable for a colleague to read his or her correspondence during a meeting. In the new etiquette, turning away from those in front of you to answer a mobile phone or respond to a text has become close to the norm. (Turkle, 2011, p.161)

Using digital gadgetry can be considered downright rude to others who are in the room with you – such as talking on your cellphone in the library or texting while at dinner with your family and not participating in conversation face-to-face. This is also an area wherein the gap between digital natives and digital immigrants plays out. While a digital immigrant might be offended by the incessant texting of an iGen youth in their

presence, this youth most likely has no consciousness whatsoever of their offending

behavior.   "We are still figuring out the social norms of etiquette and how to act with

technology" (Katz, 2012, personal communication).

Best Practice Guidelines for Educators and Parents

We have an iGeneration of youth engaging in digital media with a voracious appetite

without many rules, education, or guidelines, from their educators and parents in a time,

developmentally, they probably need them the most. "Rather than sleepwalking into this

we should be the masters and not the slaves of technology and harnessing it in ways that

we could do exciting and fulfilling things with it" (Greenfield as cited by Rosen, 2012, p.

201).

This section on "best practice guidelines" is broken into eight categories covering

suggestions for parents and educators with regard to managing and regulating their

iGeneration youths' digital consumption. The category headings include: (1) media use

agreement, (2) embrace their world, (3) discuss privacy, (4) teach digital citizenship, (5)

take a break, (6) stop violent media, (7) be a role model, (8)balanced mind practices, and

finally, I list a comprehensive compilation of all the recommended parenting and

educator practices explored in this paper in Appendix H.

Media Use Agreement

The practice of setting rules with an iGeneration youth regarding media consumption can

be established through a sit-down conversation with him or her and explaining one's

concerns, how many hours of allotted use are permitted, and appropriate guidelines for

their digital consumption. This is a two-way conversation, so it is important to listen to what a teen feels is fair usage time and practice before telling them what to do. "Rules" around digital media usage work and are effective if consistently enforced. For example, 47 percent of kids ages 8 to 18 illegally download music if their parents have no rules about it, while only 16 percent of kids in the down load if their parents have rules (Katz, 2012, personal communication). This tells us that rules can work with teens, if you establish them. Try to have an open dialogue with your children, urged Ivor Braden Horn, MD, at a recent symposium in Washington DC. She said to listen to your kids, but also observe signs of things they don't say (Patricia, 2012, para.16).

Many parents are not aware that age thirteen is the minimum age requirement for youths to sign up for social media sites such as Google + and Facebook. Age thirteen is the age set by congress in the Children's Online Privacy Protection Act (COPPA), which prohibits websites from collecting information from children under the age of thirteen without parents' permission. Many of these social media sites' terms of service mirror the privacy regulations set forth by COPPA. The American Academy of Pediatrics advocates following the age limitation set by social media sites. Unfortunately, falsifying their age has become a common practice amongst pre-teens (O'Keeffe et al., 2011, p.802).

Often, a conversation alone is enough to suffice mutual agreements between the teen and parent. However, it is suggested, particularly in the "tougher" teen/parent relationships, to sign a mutual contract stating your agreement on digital usage. Included in the agreement, or conversation, could also be an exploration of netiquette and etiquette with digital gadgetry. Is a teenager allowed to text at family meals, at family social

gatherings, in grocery stores, etc? When is it appropriate to talk on your cellphone in

public places and when is it rude? These are all excellent themes to explore in raising

one's iGeneration youth's consciousness and politeness.

For an example of such a media agreement for teenagers and parents to mutually

sign and agree upon please see Appendix K, taken from the Common Sense Media's

(2012) website (http://www.commonsensemedia.org/educators/parent-media-

education/family-media-agreements).

Embrace Their World

It is imperative that parents actually sit down and see what their kids are doing online,

what games their teenagers are playing and who they playing and socializing with

(Pederson, 2012). Despite potential fears around digital technology and the online world,

parents need to dig in and learn about what their iGeneration youth are participating in.

No one wants technology to isolate them from their kids – but, it easily can. If

parents share enthusiasm and interest their teens' digital world, iGen youth are much

more likely to be open about the guidelines parents want them to implement. Parents can

ask their teen to show them their online communities, their social media pages, share the

sites he or she visits on a regular basis. Ask them what songs they download and what

digital gadgets they love to use and ask them why.   Parents can sit down once a week or

once a month and have their teens show them what they are doing. A parent can say

something like: "I want to make sure you are being safe and smart. Let's look at your

privacy settings" (Pederson, 2012). Supervision, not "snoopervision" is highly suggested.

Be respectful of privacy and do not snoop behind their back, but instead be open about

wanting to check out what they are doing and let them know when you are going to do it.

Be relaxed and open and ask questions, learn more from them. Play dumb (if necessary)

and ask lots of questions to help them teach you about their digital world. Be curious, not

judgmental about their world. It is okay for parents to let their teen know when they are

going to investigate into some of the games they play and virtual worlds they experience.

Tell them you will log into their accounts once a week (in the beginning) so you can see

what they are doing – invite them do it with you if they wish. Parents can tell their teen

they will gradually decrease weekly monitoring once they feel comfortable and confidant

with their online activities and conduct. Take this opportunity to check the safety

controls of certain programs if it seems necessary. What are the privacy settings? For

most websites, the default is not privacy. Parents can change the settings if it seems

appropriate. The idea is to keep the communication lines open and let iGen teens know

they have freedom within boundaries. For teenagers, a suggested rule of thumb is to set a

50/50 ratio of offline and online activities for them to participate in. For instance, if they

do an hour on a digital game, then they do an hour doing and offline activity. It is also

recommended to set night time limits – such as the phone and laptop are off by 10:00pm

and not kept in their bedroom (Pederson, 2012).

Discuss Privacy

At a recent symposium in Washington, D.C., held in May 2012, to address the cognitive,

social, and emotional, impact of media on children's lives, there was discussion about

growing issues over privacy concerns, particularly in this "self-revealing" era in which

kids today are growing up. Whatever they text or post can be searched, copied, pasted,

distributed and viewed by vast invisible audiences. Their activities and personal information are often being tracked and traced with cookies and other tracking technologies, without their knowledge (Patricia, 2012, para.5).

It is essential to discuss privacy issues with regard to the Internet and digital technology with one's teenager. The iGeneration is living in an "out loud" culture. They do not necessarily understand that once they post something that it is not private <u>ever</u> again. Even if you delete an image or message, others could have saved it or downloaded it. It is essentially a myth that there is any "invisibility" or "anonymity" on the Internet. Information that is on the net is replicable and persistent (Pederson, 2012). Teens need to learn to review a text or a picture or a message before they post it checking in with their self to see if it is not something that they would want their world at large to see and know. Would a future employer want to see a picture of them partying with friends? Would a friend want to know that they said something unflattering about them in a text?

A good way to think of teaching one's teenager about their media usage is like teaching them to swim or drive – you need to teach your kid how to swim and you need to teach your kid how to use Internet and media safely.   Most iGeneration teens think "private" means that only their friends can see it and other people should not or would not look at it. They do not necessarily understand that once one posts something that it is not private <u>ever</u> again. Teach them to never ever share personal identification information. Teach your teen to <u>not</u> to share their passwords with anyone, not even with friends. This is especially important for girls. However, parents need to have their password. Review privacy settings of social media sites, games, and other platforms that

your teen engages in, together. www.commonsensemedia.org is an excellent resource to learn more about how to change privacy setting to appropriate levels for your teenager – go to their homepage, select "reviews and advice" and then click through to "Parents guide to protecting your kid's privacy" (Common Sense Media, Inc., 2012). Get and use filtering software that blocks things from their technology. Let your teen know that you are going to log into their accounts once a week, at least in the beginning until they have earned your trust, to make sure everything looks okay. It is easier to start this practice when they are younger (such as middle school). This is something that is much harder to start this when they are 17 (Pederson, 2012).

Teach Digital Citizenship

Everything that teens create and do online forms their digital reputation. It is permanent. It is a digital "tattoo" of who they are and how they are perceived. Any activity a teen participates in on the Internet leaves a "digital footprint". Once something is posted online, it is information that cannot be controlled and it can be copied, changed, and shared instantly. Even if one deletes an image or message, others could have saved it or downloaded. Since everything that teens are creating online forms their digital reputation, it is important to talk with them about creating a positive digital reputation and to teach them good digital citizenship practices. Engage in a conversation with one's teen about what they think good digital citizenship is.   iGeneration youth sometimes think they can get away with unethical or unacceptable behavior because they do not see immediate consequences when posting online. However, with great power comes great responsibility (Knorr, 2010).

For a listing of further suggestions as to how adults can teach good digital citizenship to their teens, as presented by Dr. Holly Pederson (Pederson, 2012) at her lecture on cyberbullying, see Appendix B.

Common Sense Media's website (www.commonsensemedia.org) offers simple rules of digital citizenship to help teens create a world they can be proud of and inspire others to do the same. These rules of "Digital Citizenship Tips for Teens" are listed in Appendix C of this paper (Knorr, 2010).

Parents and educators can make a real impact on the future of teens growing up in a digital world by teaching them to be responsible and good digital citizens. We can help teens help themselves. The Internet is not written in pencil – it cannot be erased. It's written in pen. What teens do online spreads fast and lasts long. We need to remind them to think before they post. Nothing is as private as they think. Anything teens say or do can be copied, pasted, and sent to millions of people in a heartbeat. Parents and educators must make sure that teens use privacy settings and that they understand that the best way to protect their secrets is not to post personal stuff. We must teach teenagers that "kindness counts." The anonymity of the digital world can lead kids to say and do things online that they would not say or do in person. Encourage them to communicate kindly, stand up for others, and build positive online relationships rooted in respect (Knorr, 2010). We adults have the responsibility to teach our iGeneration teenagers how to be good digital citizens, just as we have a responsibility to teach them how to be good humans.

For a selected list of American Academy of Pediatrics guideline recommendations for pediatricians to help families navigate the social media landscape and teach digital citizenship, please see Appendix D. For a further selected list American Academy of Pediatrics (2012) guidelines for parents, please see Appendix E.

Take A Break

In his book, *iDisorder*, Dr. Larry Rosen proposes helpful suggestions at the end of each chapter of actions that counter-act the onset of psychiatric disorders that he postulates we are vulnerable to developing because of our over consumption of digital media. Rosen emphasizes the importance of taking breaks, reducing media time, an increasing time spent in nature. He cites "Attention Restoration Theory" which advocates the importance of getting out of a media intense environment and giving the brain a break and time to restore (Rosen, 2012, p. 43). For a summarization of further suggestions Rosen makes to promote mental health and wellbeing in our relationship with digital consumption, see Appendix F.

Stop Violent Media

It is strongly suggested that parents prevent and stop their teens from violent media exposure and engagement in violent games.   Among some of the more seriously violent games that are <u>not</u> recommended for teenagers to engage in are: *Call of Duty, God of War, Grand Theft Auto, Mad World, Resident Evil, NARC,* and *Manhunt* (Knorr, 2009). Research shows that stopping engagement in violent games almost immediately stops violent behavior in students (Pederson, 2012). Scientists from the Psychology Department of the University of Austria suggest a "zero-tolerance" attitude should be

adopted in dealing with youths who play violent computer games.   Their research shows that youths who often play violence related computer games tend to be more aggressive than those who play games with less or no violence. Violent games not only temp imitation, but also lead to reactive or imaginary aggressive mentality. They suggest that parents and teachers should begin related education in primary schools to keep children from participating in violent computer games all together (Hangzhou Jiaoyu Science and Tech Co. Ltd., 2012).

Be A Role Model

How can parents ask their teenagers to set limits and practice self-discipline with regard to digital media consumption if they do not role model this behavior themselves? We have become a nation of workaholics and are always "plugged in".   Too often, harried working parents come "home" at night but this does not preclude them from continuing to work on a laptop or take a business call the minute the walk in the door, hardly noticing the change of scenery let alone that their children are in the same room. Parents too need to close the laptop and participate in family. Sherry Turkle, who interviewed over 450 young people for her book *Alone Together*, shares how so many youths she interviewed describe mothers and fathers as unavailable in profound ways, present and yet not there at all (Dokoupil, 2012, p.30). Parents can set examples to their teens of how to properly use technology, such as not texting during meal times, being fully present in face-to-face conversation, and "unplugging" a couple of hours before bedtime. Parents are prime role models for their children regarding body perception and promoting healthy lifestyles (American Academy of Pediatrics, 2012a).

Balanced Mind Practice

In order to "balance" our brain hemispheres and to compensate for the left brain dominant activities that technology engages us in, Dr. Daniel Siegel suggests seven daily essential mental activities to "balance the brain" and create well-being. These helpful seven suggested activities, all include time spent away from digital technology, are listed Appendix G.

For a consolidated comprehensive review of suggested best practices, previously cited in various sections of this paper, for parents and educators to engage in with regard to teenagers and digital technology please see Appendix H. For a listing of good websites for resources and tips, please see Appendix I.

Chapter 3 Methods of Research

The purpose of this research is to study the social cognitive effects of digital technology on teenagers. This subject matter is extremely timely and topical, as we are in a rapidly accelerating digital and information era. Thus, I had a plethora of sources in which research and gather information on this topic and methods in which to do so.

I began by attending a weekend seminar entitled "Wisdom 2.0: Youth Seminar" on September 17, 2011 at the Computer History Museum in Silicon Valley. This conference explored the key question: "How do we support the 'inner technologies' of wisdom, mindfulness, and compassion in young people in an increasingly technology-saturated age?" Among the speakers at the conference were Daniel Siegel, Clinical Professor of Psychiatry at UCLA School of Medicine; Susan Kaiser Greenland, author of *The Mindful Child*; Google's Jolly Good Fellow Chade-Meng Tan; Zynga co-founder Eric Schiermeyer; Megan Cowan, co-Founder of Mindful Schools; Gina Biegel, "On Teen Life" blogger for Mindful.org, high school students Meghan Byrd, Malaika Ramachandran, and Maddie Siegel, and more.

I conducted an extensive literature review exploring the historical context of digital technology, what the positive and negative effects of digital consumption are, as well as summarizing an abundance of best practices and guidelines for parents and educators with regard to iGeneration youths' digital consumption.

I attended a lecture in May of 2012 entitled "Challenging Cyber Bullying: Tips and Strategies for Parents" presented by Holly Pederson, PhD, MFT, at the Marin Office

of Education. Dr. Pederson is a counselor and educator at "Parents Place" a community resource center and oversees the bullying program and the community education program.

I interviewed an expert, Shira Lee Katz, Director of Digital Media, from Common Sense Media, a forerunner organization gathering information and understanding the relationship between media and children.

Finally, I conducted an action research project in May of 2012, a field study, surveying forty-six high school students, ages ranging from thirteen to fifteen years old, asking thirty directed questions, inspired be information that came to light in my literature review and attendance of lectures, about their digital consumption habits.

Interview with an Expert

I chose to interview an expert from Common Sense Media for this thesis. Common Sense Media, a non-profit company based in San Francisco, is forerunner organization in this country that gathers information and in effort to better understand the relationship between media and children and help them thrive and navigate media effectively.

I interviewed Shira Lee Katz, Director of Digital Media, of Common Sense Media. Shira Katz has a PhD in Human Development and Psychology from Harvard Graduate School of Urban Education where she focused her studies on Socio Emotional learning, morality of kids who are of privilege.   Shira explained that Common Sense Media's works to achieving their mission with three main branches within the organization: (1) To rate and interview kids' movies, books, music; (2) Education programs – schools materials for schools and kids K-12 curriculum on digital literacy, (3) Policy arm for increased privacy legislation – violent films should not be sold to minors.

I opened my interview with Shira by asking her how she perceived where we are in the digital age and where it is going. Shira responded that she perceives digital media as "getting much more mobile". Before today's world of technological devices, families would gather around a screen to watch something collectively. Now, each person has their own screen whether it be a laptop, a smart phone, a tablet, etc. Socialization is therefore changing with digital technology as everyone now has their own device. You can be sitting in the same room with someone and not "connect" with them even though they are in the same room as you, and yet, be connected to someone across the globe while chatting online. Digital technology makes us more separate as we connect less face-to-face and more to our individual screens. Shira also discussed how "privacy" has become totally different in meaning than it used to be. People now share personal information about themselves that used to be considered totally private. With digital technology today, we have ability to self publish online. People who previously would not be considered experts on a topic or have unverified resources can openly post and share information on any topic. Shira sees a homogenizing that is happening as a result of digital media – a leveling for people – an equalizer – which has positive and negative repercussions. She spoke of how the whole way we think about copywriting is changing with the Internet: we now have more of a collective intelligence.

Shira had much to share about what she believes are positive effects of digital media.   She believes the number one positive potential of digital technology is on education and how its impact can change schooling. Technology can be an incredible learning a tool. Technology is something that students can react to and interact with

outside the walls of school. Shira believes that digital technology can also possibly

bridge learning and cultural gaps. Technology makes the world even smaller. Right now

we think of our community as our neighborhood or country, technology gives us more

opportunities for global community.   Shira also discussed how digital media can be good

for shy kids, kids who feel like they are on the outside, for kids who are teased at school,

because online they have more time to plan and can say anything that they want . Shira

cited the work of Danah Boyd who writes about how kids who are estranged and feel on

the outside can be positively impacted with digital media. Shira also discussed the

positive impact of how kids today can get to know people that they would not previously

had an opportunity to learn about and know from around the world.

When I asked Shira about what she believes are the negative effects of digital

technology she expressed her concerns about how it is negatively effecting socialization

of teenagers. She asked, "How many times are teens taking photos and texting and

documenting the whole time you are with them and not present with you?   If we are

going to be here let's be here, instead of being on the phone." Shira discussed the term

"tethering" which she defined as "relationships in which people are constantly texting

and in touch with each other". Teenagers may have one to several friends that they are

"tethered" to that they incessantly text all day long with each other. She gave an example

of how freshman students in college can be tethered to their parents and this can be

detrimental. Some college freshman today are less independent than prior generations

because their parents are instantly accessible to them via texting and the Internet to take

care of normal issues (such as not having groceries, or needing to write a paper) that in years gone by freshmen students would have to learn to deal with independently.

Shira discussed how although many people perceive the Internet as a vulnerable place for teenagers because of "the predator myth", in actuality, the statistics are very low that any kids actually meet with predators that they initially met online. However, there is a serious concern about cyberbullying. Shira described cyberbullying as when a person poses as another person online and then aggressively slanders them - people who pretend to be someone else and then suddenly turn on them. Shira said with teens who cyberbully can be out right cruel. She sees cyberbullying as a very important to be a part of what we need to educate teenagers about on digital media. Also, many teenagers are not aware of their digital footprints, the permanence, of posting something on the Internet. Shira talked about how technology usage is creating social rudeness, such as if you are in a business meeting and someone is texting while someone else is speaking. Shira says, "We are still figuring out the social norms of etiquette and how to act with technology." Another potential negative effect of digital media, particularly with digital natives, is how "multi-tasking" has become more and more of a norm. With multi-tasking, you might get all your tasks done, but, they are not as good as if you did it one at a time. It is becoming harder for people to concentrate on one thing at a time. She cited the studies of Paul Atchley at the University of Kansas and of Cliff Nass of Stanford who has done work on the association between multi-tasking and "anti"-tasking behavior causally leads to more unhappiness.

Shira noted that one serious negative effect of digital technology is that of the effect of violent games on teenagers – especially male teenagers. She mentioned that there has been violent game research done in China about addiction to violent games and the negative effects of shooter games. Violent games were at first designed as video games for soldiers going to war. They were designed to condition the soldiers to shoot immediately and would get rewards for shooting fast and punishments for not shooting fast enough. There is a correlation between users of violent games and anti-social behavior.

Finally, I asked Shira about what she perceives as important guidelines for parents and educators around digital technology. Shira responded that it is important that parents and schools need to teach about digital citizenship. They need to teach students to understand and to harness the power of the Internet in the best possible way. It is best to start this teaching when children are young – if there are already boundaries and limitations it makes it easier when they are teenagers to control their usage. Teenagers need to have the expectation that parents have a role in how they interact with media. Media is another person in the household. Parents should have rules such as no media during a family meal or an outing, create no media times. Shira believes that if you have a certain idea on how you want your kids, "authoritarian parenting does not work, parents should explain "why" to their children."   She suggested that in creating rules around digital technology usage that parents can present choices such as two hours a week in front of a screen. Shira suggested that parents write media usage contracts up with their children. There are examples of age appropriate contracts on the Common Sense Media

website. Although, Shira cautioned, these contracts may or may not work. It depends

sometimes on the child.   "Parents are major role models and if they believe that their kid

is texting a lot, the parents need to put a limit on it." Shira also suggested that as a rule of

thumb, at bedtime, that parents should take cell phones out of their children's' room at

night and charge them in another room during the night. "Parents should focus more on

educating their children about the permanence of putting anything on the Internet. A lot

of people have been burned, they create digital footprints issues and the do not realize

that they are permanent."

Shira closed her discussion of guidance suggestions for parents by talking about

how "Everything takes place within ecosystem". She suggested that parents should have

kids keep track of their media diet. "A good analogy of digital consumption could be

with food. We teach our kids to put the right things in their body so they function well,

and that you need to balance sweets and exercise. If you are consuming garbage all the

time it is bad for you." This is true of digital consumption as well.

Chapter 4 Action Research Project

Sample and Site

The quantitative as well as qualitative research for my field study survey was collected

from forty-six freshman and sophomore high school students, ranging from ages thirteen

to fifteen, from a local high school, in May of 2012.

Ethical Standards

This paper adheres to ethical standards in the treatment of human subjects in research as

articulated by the American Psychological Association (2010). A proposal of the

interview with an expert, as well as a proposal including the survey questions for the field

study survey, were submitted and reviewed by the director of the master's program, and

received approval.

Access and Permissions

Access to the site and sample for my field study was gained as I was a student teacher at

a high school in the computer lab. Volunteer participants gave anonymous responses to

an online survey while in computer lab class.

Data Gathering Strategies

I sought qualitative and quantitative data through my action research project by giving

teenage high school students a survey asking pertinent questions about their digital

technology and media consumption habits. The survey, which included thirty total

questions, was given to forty-six student volunteers, between the ages of thirteen and

fifteen (61% of participants were 15 years old, 30% were 14 years old, and 9% were 13

years old, with the average age of participants being 14.5 years old) while they were in

computer lab class. The students anonymously answered the questions on an online

survey that I had prepared on wuffoo.com. To take the survey yourself, or simply review

the questions, the url to access this survey is: http://nogginusers.wufoo.com/forms/digital-

media-survey/.

Data Analysis Approach

Upon receiving the completed survey questionnaires from the volunteer participants of

my action research project, I reviewed their quantitative and qualitative responses and I

analyzed these responses against the statistics and information from my literary review

and other research.   The final analysis of my field research findings is a synthesis of my

extensive literature review, attendance to a seminar, attendance to lectures, my interview

with an expert, and the action research project findings.

Overall Findings of Action Research Project

Generally, the quantitative responses to my action research project were in alignment

with statistics reported in the literary review. For instance, per the literary review, in

2011 the national average that a child gets a cellphone was twelve years-old, however,

the average continues to drop. The results of my study reflect that the average age the

participants got their first cellphone is the age of 11.45 years old, which coincides with

this information. See below chart:

How old were you when you got your first cellphone?	Total %	46 total count
7 years old	*2.17 %*	1
8 years old	*4.35 %*	2
9 years old	*0*	0
9-10 years old	*4.35%*	2
10 years old	*15.22%*	7
11 years old	*17.39%*	8
12 years old	*19.57 %*	9
13 years old	*17.39%*	8
14 years old	*10.87%*	5
15 years old	*6.52 %*	3
Don't own a cell phone	*2.17 %*	1
Average age = 11.45 years old		

When asked "Do you text?" forty-two out of forty-six participants replied "yes"

(91% affirmative), there were three "no" responses, and one participant did not own a cell

phone. The overwhelming majority of my teen participants who text correlates with

statistics showing that texting is the communication platform of the moment for

iGeneration youth. Also, it is important to note, that of the 46 teen participants in this

study, only one student did not have a cell phone.

I asked whether my participants preferred texting or having a face-to-face

conversation with someone. The results were pretty much split down the middle with

44.68% of (21 total) respondents replying they preferred texting, 46.81% of (22 total)

respondents saying they preferred face-to-face conversations. This too correlates with the

growing concern that iGeneration youth are more comfortable communicating digitally instead of in person.

As discussed in the literature review, the legal age that a youth must be is thirteen years old before they can sign up for most social media sites, including Facebook. Of the forty participants who took the survey who have a Facebook account, responding to the question, "How old were you when you first signed up for Facebook?" twenty-two of the respondents replied they were under the age of thirteen, or 55% of those participants who have Facebook accounts.

How old were you when you got your first Facebook account?	% Total	46 Total Count
8 years old	*4.35%*	2
10 years old	*2.17%*	1
11 years old	*8.70%*	4
12 years old	*32.60%*	15
13 years old	*17.39%*	8
14 years old	*15.21%*	7
15 years old	*6.52%*	3
Don't Have a Facebook Account	*13.04%*	6

Interestingly, when questioned if their Facebook page presented and "authentic" or "fake" self, the overwhelming response was that their Facebook page presented an authentic self.   As discussed in the literature review, social media profiles are one way for iGeneration youth to further explore identity, but, it can also pressure them to "put on a happy public front" that is inauthentic. Of the 39 participants in this study who use Facebook, 35 (90%) claimed their Facebook page presented an authentic self.

Do you feel that your FB page is authentically you?	% Total	46 Total Count
My FB page is my authentic self	*76.09%*	35
My FB page is a fake self	*2.17%*	1
I don't really go on Facebook a lot	*2.17%*	1
Both fake and authentic	*2.17%*	1
Limited of my authentic self	*2.17%*	1
I don't use Facebook	*15.22%*	7

When the participants were asked if they have ever been cyberbullied, 14 of the 46 participants replied "yes", which is 30% of the participants. The national average of teens who have been cyberbullied is 20%, therefore, the instances of cyberbullying, based on their responses, to participants in my survey is 10% above that of the national average. The participants in my field study project detailed their experiences qualitatively in how they were cyberbullied as documented below:

"This kid committed suicide on my birthday and this girl made up rumors saying that I said "How dare he die on my birthday" so everyone wrote on my wall how much they hated me. I also got into a curse out fight with this girl who didn't like me. "

"Yes, there was an attempt to cyber bully me via tumblr, but I instead outed the person and had a good laugh at them."

"Last year someone made a fake account when I didn't even have a Facebook account and blamed it on me."

"In fifth or sixth grade people sent me mean emails."

"A friend I made online told me that if I stopped talking to them they would commit

suicide."

"Mean/rude comments on my pictures."

"I did it to myself."

"The person was saying really bad things about me."

"fuck off"

"Over Facebook"

"Some racist fool thought it would be funny to be rude and start saying disrespectful

things about my race."

"Messages to me on Facebook and Facebook statuses about me."

"In 7th grade me and my friends sometimes got in fights on Facebook."

"Mean things were posted about me and spread around and mean things have been said

over Facebook chat about me."

Given that one of the overall intentions of this paper was to gather "best practice

guidelines" for parents and educators with regard to teenagers' digital consumption, the

survey results of the question as to whether or not the teenage participants' parents or

guardians monitored their media usage was eye opening. The majority response

(47.82 %) responded that "No" their parents or guardians did not monitor their media

consumption.

Do your parents or guardians monitor how much media time you do? ("Media" time defined as anything with a screen) RESPONSES:	Total %	46 total count
No	47.82%	22
Yes	41.30%	19
Sometimes	4.34%	2
They get mad at me sometimes but quickly get over it	2.17%	1
Sort of	2.17%	1
They notice but don't constantly monitor	2.17%	1

Chapter 5 Discussion /Analysis

Summary of Major Findings of Research

We are in a fast tracked digital age where there is still much that is unknown about the ways that digital technology is affecting our brains, how we socialize, how we learn, and how we live. However, there is a lot that we do know and much of this information is examined in this paper.

The positive effects of digital technology "standouts" to me, the researcher, are the positive effects digital technology is having on education (and its potential future) as well as on iGeneration youths' ability to create content. Digital technology is creating a new literacy – a digital literacy. Digital technology is possibly reaching students academically that were previously unreachable. Digital technology has the potential capacity to "bridge the educational gap" that exists between social economic demographics. It also connects students to content in ways never possible through information available from the Internet and students' abilities to create their own connective creative content and projects.

The numerous negative effects of digital technology revealed in this paper appear daunting, and definitely call for better understanding. One striking negative effect revealed about digital technology consumption is how it is diminishing our capacity for empathy by limiting how much people engage with one another, even in the same room. The addictive qualities associated with digital consumption and cyber usage cannot be denied and is gaining prominence as a serious concern. Another negative risk of technology is the effects it has having on our attention span. Even in the writing of this

thesis, I found myself feeling ADD while jumping around from article to article with so many windows and articles open on my screen, while simultaneously answering texts and e-mails. It seemed I had almost too many resources to work with, popping up at me, and I needed to breathe and focus on the task at hand. So, I implemented some of the best practice suggestions, such as taking a break from the screen and walking around the block and taking time to notice the natural world around me before jumping back into my research time in front of the screen, forcing myself to focus on one subject at a time.

Finally, a myriad of best practices and suggested guidelines for teachers and educators were outcome of this research. Please see the appendix section for a comprehensive listing of these recommended best practices gathered in the literature review.   Also revealed was the need to educate parents and educators on the "importance" of learning good practices and "how to" be involved in their teenagers' digital consumption habits as there seems to be a current lack of understanding and much misunderstanding, fear, and ambivalence from parents on the subject.

Limitations/Gaps

The digital age has unleashed in tidal wave proportions in the last twenty years and there simply has not been time to catch up. Although, Pew Internet studies, the Kaiser Foundation, Common Sense Media, amongst other organizations are on the forefront of filling in these research gaps, there is a lack of longitudinal studies on the social cognitive effects or of digital consumption.

Implications for Future Research

There is clearly a need for future extensive research and longitudinal studies on the social

cognitive effects of digital consumption.

Overall Significance

Overall, the findings of this research emphasize not only the need to embrace the

numerous positive aspects of digital technology, but also, the utmost importance to

integrate and habituate healthy "digital practices" in teenagers lives.   The potential of

addiction and imbalance in regard to digital consumption are looming possibilities and

the long term effects of too much usage are yet unknown.

About the Author

Eugenia Ives is a mother of two tween-agers, both of whom are begging to get an iPhone.

Hmmmm? She needs to think about that.

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Appendix A

Listed below are selected highlights of a timeline of the rapid technological advancements that have occurred in the last sixty-six years (from 1946 – 2012):

1946 - ENIAC "first computer" completed. Occupied about 1,800 square feet and used about 18,000 vacuum tubes, weighing almost 50 tons (Computer Hope, 2012).

1949 - Popular Mechanics predicts: "Computers in the future may weigh no more than 1.5 tons" (Computer Hope, 2012).

1953 - IBM 701 introduced to the public. It rents for about $16,000 per month. 19 units were manufactured (Computer Hope, 2012).

1955 - The ENIAC is turned off for the last time. It has done more arithmetic than the entire human race did prior to 1945 (Computer Hope, 2012).

1960 - 2,000 computers are in use in the US (Computer Hope, 2012).

1962 - First audio cassette tape (Computer Hope, 2012).

1964 - BASIC (Beginners All-purpose Symbolic Instruction Language) binary code is developed at Dartmouth. It is made available for free to the public (Computer Hope, 2012).

1969 - The "Internet" is created by ARPANET for the U.S. Department of Defense, but, it's not the Internet as we know it today (Schiel, 2009).

1972 - The first video game console called the Magnavox Odyssey is released selling for $100.00 (Computer Hope, 2012).

1973 – The first "wireless" handheld cellular phone is developed. The phone is bigger than a large brick (Computer Hope, 2012).

1975 - The first "personal computer" called "the Altair" is sold as a kit that has to be assembled. The computer language (using free binary code) for the Altair is developed by Bill Gates and Paul Allen, called "Altair BASIC" (Marshall, 2004, p.22).

1975 - The IBM 5100 is the first "portable computer". The computer weighs 55 pounds and has a five inch CRT display, tape drive, and 64KB of RAM (Computer Hope, 2012).

1976 - Steve Wozniak partners with Steve Jobs to sell "the machine" Wozniak created. On April 1, 1976 he "Apple Computer" is officially born (Schiel, 2009).

1979 - More than half a million computers are in use in the US (Computer Hope, 2012).

1979 - CompuServe offers first commercial dial-up connection (Computer Hope, 2012).

1981 - The Osborne I, the first successful portable computer, is introduced. It weighs 25 pounds (Computer Hope, 2012).

1983 - More than 10 million computers are in use in the US (Computer Hope, 2012).

1985 - Toshiba introduces the first "Laptop Computer", called the T1100+. It runs on DOS and is fully functional (Schiel, 2009).

1987 - The first e-mail from China is sent to Germany (Computer Hope, 2012).

1989 - A "suite" of Microsoft software programs introduced to the public (Schiel, 2009).

1990 - The first search engine, "Archie", is introduced (Computer Hope, 2012).

1990 - "Hypertext" system introduced, which is the start of the Internet as we know it today (Computer Hope, 2012).

1991 - The first Cybercafe opens in San Francisco, California (Computer Hope, 2012).

1993 - Fifty World Wide Web servers exist as of January, 1993 (Computer Hope, 2012).

1993 - The first PDA (personal digital assistant) "the Newton" hand held device is developed by Apple, Inc. Apple predicts PDAs would become ubiquitous tools. For the next three years, PDA sales dwindle, however (Schiel, 2009).

1993 - President Bill Clinton puts the White House online with a web page and e-mail address for the President, Vice President and first lady (Computer Hope, 2012).

1993 - The PC game DOOM is released. Today, DOOM is thought of as a turning point for first person shooters and for computer games in general (Computer Hope, 2012).

1994 – Geocities launches as a community where users create their own websites categorized by one of six "cities" (Tiedje, 2011).

1994 – Vice President Al Gore makes a speech where he coins the term "Information Superhighway" (Computer Hope, 2012).

1994 - YAHOO is launched (Computer Hope, 2012).

1995 - The first plasma flat screen is developed by Sony (Schiel, 2009).

1995 - Microsoft launches Internet Explorer browser (Schiel, 2009).

1995 - The first Wiki is created (Computer Hope, 2012).

1995 - Amazon.com opens (Computer Hope, 2012).

1995 - TheGlobe.com gave users the freedom to post their own content and interact with other users (Tiedje, 2011).

1995 - Hotmail is started (Computer Hope, 2012).

1995 – Classmates.com is born allowing users to find and connect with former acquaintances from school life (Tiedje, 2011).

1995 - The first completely computer generated film, *Toy Story,* is released (Computer Hope, 2012).

1996 - Google is developed by Sergey Brin and Larry Page (Computer Hope, 2012).

1996 - Palm, Inc. delivers the industry's first successful handheld computer, called "the Palm Pilot" (Schiel, 2009).

1996 - The movie *Twister* becomes the first feature film to be put on a DVD (Computer Hope, 2012).

1997 –Instant Messenger launches, and a new acronym based vernacular is born: OMG, LOL, BRB (Tiedje, 2011).

1997 – SixDegrees.com launches allowing users to create profiles and list friends (Tiedje, 2011).

1997 – The dancing baby becomes one of the Internet's first fads. The dancing baby is a short 3D animation of a small baby wearing diapers dancing (Computer Hope, 2012).

1997 – Netflix launches (Computer Hope, 2012).

2000 - The Children's Online Privacy Protection Act (COPPA) becomes effective April 21, 2000 (Computer Hope, 2012).

2000 - Google announces it has indexed over one billion pages making it the Internet's largest search engine (Computer Hope, 2012).

2000 - More than half of the households in America have Internet access (Computer Hope, 2012).

2001 – Apple launches the iPod. It is a quarter of the size of comparable products (Schiel, 2009).

2001 - Wikipedia is founded (Computer Hope, 2012).

2001 - In December 2001 the Google search engine is now indexing three billion web documents (Computer Hope, 2012).

2002 – Friendster.com launches and quickly grows to 3 million users in 3 months (Tiedje, 2011).

2003 – MySpace.com is frantically coded in 10 days to try and mimic the rapid growth of Friendster. It grows to become the most popular social networking site in 2006 with 100 million users (Tiedje, 2011).

2003 - LinkedIn and Photobucket launch (Tiedje, 2011).

2003 - Supreme Court rules that sex offenders information and pictures can be posted online on March 3, 2003 (Computer Hope, 2012).

2003 - Apple opens first iTunes store (Computer Hope, 2012).

2004 - Google announces Gmail on April 1, 2004. Many people take it as an April Fool's joke (Computer Hope, 2012).

2004 - World of Warcraft, a massively multi-player online role-playing game (MMORPG) is released (Computer Hope, 2012).

2004 – Facebook launches originally as a way for college students to connect (Tiedje, 2011).

2004 - Digg and Flickr launch (Tiedje, 2011).

2005 – YouTube launches (Tiedje, 2011).

2005 - Google Maps is launched (Computer Hope, 2012).

2006 – Twitter launches and squeezes our communication into 140 character "tweets" (Tiedje, 2011). Jack Dorsey, the founder of Twitter posts the first Twitter post "Just setting up my twttr" (Computer Hope, 2012).

2006 - MySpace announces its 106 millionth account was created (Computer Hope, 2012).

2006 - Nintendo releases Wii. (Computer Hope, 2012).

2007 - Apple introduces the iPhone (Computer Hope, 2012).

2007 - Dropbox is founded, a free "cloud" content host (Computer Hope, 2012).

2007 - Google releases Google Street View that allows visitors of Google Maps to view what an area looks like (Computer Hope, 2012).

2007 - 161 billion gigabytes of content are created, stored, and replicated world wide. That's 3 million times more the amount of all books ever written (Palfrey & Gasser, 2012).

2008 – Facebook overtakes MySpace as the most popular social networking site (Tiedje, 2011).

2009 - Minecraft game is released (Computer Hope, 2012).

2010 - Apple introduces the iPad (Computer Hope, 2012).

2010 - Apple announces over 10 billion tracks have been downloaded from iTunes (Computer Hope, 2012).

2010 - Amazon announces that it sells more Kindle (e-books) books than hardcover books (Computer Hope, 2012).

2011 – Google introduces Google+ after two previous failed attempts to break into the social space (Tiedje, 2011).

2012 – Apple launches iBooks – digital textbooks.

Appendix B

Listed below are some suggestions as to how adults can teach good digital citizenship to their teens, as presented by Holly Pederson, PhD, MFT, at her lecture on cyberbullying May 16, 2012 at the Marin Office of Education (Pederson, 2012):

-Teach teenagers decision making skills wherein they identify and explore potential consequences of a post.

-Establish a personal code of conduct: the same rules apply to online interaction.

- Discuss accountability. If you wouldn't say it f2f (face-to-face), then don't say it in cyberspace.

-Teach your teen that high emotions and conflicts need to be resolved in person, face-to-face (f2f) with the person you are conflicting with.

-Teach empathy.

-Explain the line between funny and cruel.

-Teach your teen to deal with conflict and conflict resolution.

-Think about who COULD read what you post on social media, not who it was intended to read it; college admissions officers are looking at FB pages.

-Consider unintended consequences.

-Don't forward those incrimination photos and IM's.

-Don't forward photos you aren't involved in.

Appendix C

Listed below are rules of "Digital Citizenship Tips for Teens" taken from the Common Sense Media website (Knorr, 2010):

-Think before you post or text - a bad reputation could be just a click away. Before you press the "send" button, imagine the last person in the world that you'd want seeing what you post.

-What goes around comes around. If you want your privacy respected, respect others' privacy. Posting an embarrassing photo or forwarding a friend's private text without asking can cause unintended hurt or damage to others.

-Spread heart, not hurt. If you wouldn't say it in person, don't say it online. Stand up for those who are bullied or harassed, and let them know that you're there for them.

-Give and get credit. We're all proud of what we create. Illegal downloading, digital cheating, and cutting and pasting other people's stuff may be easy, but that doesn't make it right. Digital cheating is still cheating. Don't plagiarize, download illegally, or use technology to cheat in school. You have the responsibility to respect other people's creative work and the right to have your own work respected.

-Make this a world you want to live in. Spread the good stuff. Create, share, tag, comment, and contribute to the online world in positive ways.

Appendix D

Below are selected American Academy of Pediatrics (2011) guideline recommendations for pediatricians to help families navigate the social media landscape, include:

-Advise parents to talk to children and adolescents about their online use and the specific issues that today's online kids face, such as cyberbullying, sexting, and difficulty managing their time.

-Advise parents to work on their own "participation gap" in their homes by becoming better educated about the many technologies their children are using.

-Discuss with families the need for a family online-use plan, with an emphasis on citizenship and healthy behavior.

-Discuss with parents the importance of supervising online activities via active participation and communication, not just via monitoring software.

Appendix E

Listed below are further selected American Academy of Pediatrics (2012a) guidelines for parents:

-Get a social media profile yourself. It will also enable you to "friend" your kids and monitor them on line. Have a policy requiring that you and your child "friend" each other. This is one way of showing your child you are there, too, and will provide a check and balance system by having an adult within arm's reach of their profile. This is important for kids of all ages, including teens.

-Ask daily how your family used those tools with questions such as: "What did you write on Facebook today?" "Any new chats recently?" "Anyone text you today?" Tweens are likely to be using more instant messaging and texting, while teens use those technologies and also networking sites such as Facebook.

-Share a bit about your daily social media use as a way to facilitate daily conversation about your kids' online habits.

-Keep the computer in a public part of your home, such as the family room or kitchen, so that you can check on what your kids are doing online and how much time they are spending there.

-Talk with other parents about what their kids of similar ages are using for SM.

-Discuss with your teens what "good judgment" means and the consequences of poor judgment, ranging from minor punishment to possible legal action in the case of "sexting" or bullying.

-Remember to make a point of discouraging kids from gossiping, spreading rumors, bullying or damaging someone's reputation using texting or other tools.

-Create a strategy for monitoring your kids' online social media use, and be sure you follow through. Some families may check once a week and others more sporadically. You may want to say "Today I'll be checking your computer and cell phone." The older your kids are, the more often you may need to check.

-Consider formal monitoring systems to track your child's email, chat, IM and image content. Parental controls on your computer or from your Internet service provider, Google Desktop or commercial programs are all reasonable alternatives.

-Set time limits for Internet and cell phone use. Learn the warning signs of trouble: skipping activities, meals and homework for SM; weight loss or gain; a drop in grades. If

these issues are occurring due to your child being online when they should be eating, sleeping, participating in school or social activities, your child may have a problem with Internet or social media addiction. Contact your pediatrician for advice if any of these symptoms are occurring.

-Check chat logs, emails, files and social networking profiles for inappropriate content, friends, messages, and images periodically. Be transparent and let your kids know what you are doing.

-Talk to your kids about sexting. For the initial part of the conversation, it is important to first learn what your child's understanding is of the issue and then add to it an age appropriate explanation.

-Make sure kids of all ages understand that sexting is serious and considered a crime in many jurisdictions. If they "sext", there can be serious consequences, quite possibly involving the police, suspension from school, and notes on the sexter's permanent record that could hurt their chances of getting into college or getting a job.

-Experts have noted that peer pressure can play a major role in the sending of texts, with parties being a major contributing factor. Collecting cell phones at gatherings of tweens and teens is one way to reduce this temptation.

-Encourage school and town assemblies to educate parents, teachers and students.

Appendix F

Listed below are summaries of some suggestions Dr. Rosen makes in his book, *iDisorder*, to promote mental health and wellbeing in our relationship with digital consumption (Rosen, 2012):

-Adopt an "e-waiting period" between writing a message and sending it. Wait a minute or so and give yourself time to reread and reassess whether the language is too harsh and in need of softening.

-Modulate your use of personal pronouns in electronic communication. Count the number of times you use the word "I" or "me" and change how you've written something if you use these words too often to include others.

-Practice the four R's: Rethink, Reboot, Reconnect, and Revitalize. Rethink how much time you are interacting with digital devices, Reboot from digital devices for a period of time, gradually Reconnect the technological gadgets one at a time and with time limits set, and, finally, Revitalize by prioritizing human contact over electronic contact whenever possible.

-If you are concerned that you have anxiety, addiction, or depression, as a result of your relationship/over usage of your digital gadgets, talk to a professional or join an Internet addiction self-help group.

-Take a nature break. Research shows that getting in a more peaceful environment for just 15 minutes can reset your brain and reduce stress. If you can't access nature by going outside, than look at images of nature.

-Practice being offline at times when you are normally online.

-Set alarms to remind you when it is time to log off your computer.

-Turn off your devices and do something that does not involve technology such as reading.

-Pay attention to signs of childhood depression in your teens. One in nine adolescents will experience a serious bout of depression.

-Monitor your teens' use of technology and media. Practice "co-viewing" so that you know what they are watching. Do not let teens watch content that is too dark or violent, have them focus more on positive content.

-Discuss with your teen about the unrealistic images of thinness and beauty that are portrayed in media and in computer game characters.

-Have family meals. Research shows that at least three to four family meals a week leads to major physical and psychological health benefits for children, teens and family.

-Family meals should be sacrosanct. They should be mandatory for all family members and technology free. (All phones must be turned off, including mom's and dad's.)

-To counter multi-tasking between digital gadgetry, institute a "focus time" policy to work on one task (such as doing homework) for fifteen minutes, then allow yourself a one minute "tech break" to check your social media or phone.

-Have a rich social life

-Exercise.

-Practice yoga.

-Learn multiple languages.

-Learn to play a musical instrument.

-Consume Omega 3 fatty acids.

-Do puzzles including Sudoku and crosswords.

Appendix G

On his website (http://drdansiegel.com/resources/healthy_mind_platter/), Dr. Daniel Siegel suggests seven daily essential mental activities to "balance the brain" and create well-being (Mind Your Brain, Inc., 2010). These seven daily essential brain balancing activities are listed below.

-Focus Time: When we closely focus on tasks in a goal-oriented way, we take on challenges that make deep connections in the brain.

-Play Time: When we allow ourselves to be spontaneous or creative, playfully enjoying novel experiences, we help make new connections in the brain.

-Connecting Time: When we connect with other people, ideally in person, and when we take time to appreciate our connection to the natural world around us, we activate and reinforce the brain's relational circuitry.

-Physical Time: When we move our bodies, aerobically if medically possible, we strengthen the brain in many ways.

-Time In: When we quietly reflect internally, focusing on sensations, images, feelings and thoughts, we help to better integrate the brain.

-Down Time: When we are non-focused, without any specific goal, and let our mind wander or simply relax, we help the brain recharge.

-Sleep Time: When we give the brain the rest it needs, we consolidate learning and recover from the experiences of the day.

Appendix H

Listed below is a **consolidated comprehensive review** of suggested best practices, previously cited in various sections of this paper, for parents and educators to engage in with regard to teenagers and digital technology:

-Embrace their world. Be interested in your teen's digital world.

-Have open ongoing conversations with your teens about digital technology consumption and their social media relationships.

-Talk to your adolescents about their online use and the specific issues that they face online, such as cyberbullying, sexting, and difficulty managing their time.

-Create a family media on-line use agreement and individual media contracts with your teens if needed. Emphasize good citizenship and healthy behavior.

-Ask your teenager to show you their social media pages, visit their online communities, share their sites, and ask what gadgets and music they love.

-Be relaxed and open, curious, and not judgmental about your teen's cyber world.

-Play dumb (if necessary) and ask your teen a lot of questions to help them teach you about their cyber world.

-As a parent, work on your own "participation gap" and become better educated about the many technologies your teens' are using.

-Get a social media profile(s) yourself. It will also enable you to "friend" your teens and monitor them on line.

-Have a policy requiring that you and your child "friend" each other. This is one way of showing your teen you are there, too, and will provide a check and balance system by having an adult within arm's reach of their profile. This is important for kids of all ages, including teens.

-Share with your teen about your own daily social media use as a way to facilitate conversation about their online habits.

-Discuss with your teen what "good judgment" means and the consequences of poor judgment, ranging from minor punishment to possible legal action in the case of "sexting" or bullying.

-Talk with other parents with teens of similar ages about what social media platforms their kids are using.

- Practice supervision not snoopervision. Be open with your teen about when you are going to check their cyber communications.

-Keep computers in central living space.

-Practice one media-free day a week (or, at the very least, once a month)

-Set a 50/50 ratio of offline and online activities. Time it if necessary.

-Set time limits for Internet and cell phone use.

-Practice being offline at times when you are normally online.

-Set alarms to remind you when it is time to log off your computer.

-Set night time limits – the "unplug" time when all digital media is turned off at night, preferably at least an hour before bedtime.

-Charge cell phones in rooms other than the teenager's bedroom at night.

-Have family meals. Research shows that at least three to four family meals a week leads to major physical and psychological health benefits for children, teens and family.

-Family meals should be sacrosanct. They should be mandatory for all family members and technology free. (All phones must be turned off, including mom's and dad's.)

-Teach your teen to take "nature breaks" from technology to restore their brain. Research shows that getting in a more peaceful environment for just 15 minutes can reset your brain and reduce stress. If you can't access nature by going outside, than look at images of nature.

-Turn off your devices and do something that does not involve technology such as reading.

-To counter multi-tasking between digital gadgetry, institute a "focus time" policy to work on one task (such a homework assignment) for fifteen minutes without technological interruption, then take a one minute "tech break" to check social media or phone.

-If your teen has been in front of a screen for two hours, teach them to take a break and walk outside for a couple minutes. If you have more time, take a walk around the block.

-Engage your teen in non-digital board games, puzzles, Sudoku and crosswords.

-Focus Time: When we closely focus on tasks in a goal-oriented way, we take on challenges that make deep connections in the brain.

-Play Time: allow ourselves to be spontaneous or creative, playfully enjoying novel experiences, we help make new connections in the brain.

-Connecting Time: connect with other people, ideally in person, and when we take time to appreciate our connection to the natural world around us, we activate and reinforce the brain's relational circuitry.

-Physical Time: When we move our bodies we strengthen the brain in many ways.

-Time In: quietly reflect internally, focusing on sensations, images, feelings and thoughts, we help to better integrate the brain.

-Down Time: When we are non-focused, without any specific goal, and let our mind wander or simply relax, we help the brain recharge.

-Sleep Time: When we give the brain the rest it needs, we consolidate learning and recover from the experiences of the day.

-Teach your teen to practice healthy sleep. Teenagers need nine hours of sleep a night.

-Be a role model for your teen in living a balanced life with appropriate amounts of unplugged time.

-Practice what you teach. Turn off your cellphone and laptops at appropriate times and "be" present.

-Role model by not texting while driving, not texting during meal times, or when having a face-to-face conversation.

-Role model positive body perceptions and living a healthy lifestyle.

-Role model turning off all digital screens an hour before bedtime.

-Be present with your teenager.

-Consider formal monitoring systems to track your child's email, chat, IM and image content. Parental controls on your computer or from your Internet service provider, Google Desktop or commercial programs are all reasonable alternatives.

-Tell your teen that you are going to log into accounts once a week (in the beginning) so you can see what they are doing. Invite them to do it with you. Gradually decrease this monitoring once you feel comfortable and confident about their participation in the cyber world.

-Create a strategy for monitoring your kids' online social media use, and be sure you follow through. Some families may check once a week and others more sporadically. You may want to say "Today I'll be checking your computer and cell phone." The older your kids are, the more often you may need to check.

-Monitor your teens' use of technology and media. Practice "co-viewing" so that you know what they are watching. Do not let teens watch content that is too dark or violent, have them focus more on positive content.

-Check your teen's chat logs, emails, files and social networking profiles for inappropriate content, friends, messages, and images periodically. Be transparent and let your them know what you are doing.

-Google your teenager and see their digital footprint.

-Get and use filtering software.

-Parents need to have their teens' passwords for social media and cyber sites.

-Check your teen's browser history.

-Ask your teen on a regular basis how they used cyber tools, with questions such as: "Did you write anything interesting on Facebook today?" "Any good chats recently?" "Who'd you text with today?" Tweens are likely to be using more instant messaging and texting, while teens use those technologies and also networking sites such as Facebook and Google +.

-Discuss privacy with your teen.

-Review privacy settings with your teen. For most websites, the defaults are not private. Parents should change the settings if it seems appropriate.

-Teach your teen to not share personal identification information.

-Teach you teen to not share passwords, even with friends (especially important for girls)

-Teach your teen positive digital citizenship.

-Teach your teen to adopt an "e-waiting period" between writing a message and sending it. Wait a minute or so and give them time to reread and reassess whether the language is too harsh and in need of softening.

-Remind your teen to think before they post. Who else <u>could</u> read it? Would you be willing to attach a copy of your text message, IM, photo or Facebook page to your college application?

- Establish "good manners" for when and where to use gadgets in public and social situations. Discuss digital gadgetry etiquette with your teen such as when is it appropriate to text in family social gatherings or at the grocery story.

-Discuss the importance of a positive digital footprint with your teen.

-Teach your teen that with great power (aka access to the Internet) comes great responsibility.

-Discuss with your teen and establish a "personal code of conduct" and that the same rules apply to online interaction.

-Teach your teen that illegal downloading, digital cheating, and cutting and pasting other people's stuff may be easy, but that doesn't make it right. Digital cheating is still cheating. Don't plagiarize, download illegally, or use technology to cheat in school. You have the responsibility to respect other people's creative work and the right to have your own work respected.

-Teach your teen that the cyber world can never be erased. Once something is posted – it is forever.

-Teach your teen to spread the good stuff. Create, share, tag, comment, and contribute to the online world in positive ways. It is ultimately up to them to make their world a positive one that they want to live in.

-Remind your teenager to consider decision making skills about potential unintended consequences of a post. Don't say it. Don't forward it. Don't pass it on. Don't participate.

-Teach your teen to not forward incriminating photos, IM's, e-mails, or posts of themselves or others.   What goes around comes around. If you want your privacy respected, respect others' privacy.   Posting an embarrassing photo or forwarding a friend's private text without asking can cause unintended hurt or damage to others.

-Teach your teen not to forward photos they aren't involved in.

- Discuss accountability. If you wouldn't say it f2f (face-to-face), then don't say it in cyberspace.

-Spread heart, not hurt. Teach your teen that high emotions and conflicts need to be resolved in person, face-to-face (f2f) with the person you are conflicting with.   If you wouldn't say it in person, don't say it online.

-Make a point of discouraging teens from gossiping, spreading rumors, bullying or damaging someone's reputation using texting or other tools.

-Teach your teen to stand up for those who are bullied or harassed, and help them help those who are harassed know that you're there for them.

-Think about who COULD read what you post on social media, not who it was intended to read it; college admissions officers are looking at FB pages.

-Teach your teen that a bad reputation could be just a click away. Before you press the "send" button, imagine the last person in the world that you'd want seeing what you post.

-Teach empathy.

-Explain the line between funny and cruel.

-Teach your teen to deal with conflict and conflict resolution.

-Talk to your kids about sexting. For the initial part of the conversation, it is important to first learn what your child's understanding is of the issue and then add to it an age appropriate explanation.

-Make sure your teen understands that sexting is serious and considered a crime in many jurisdictions. If they "sext", there can be serious consequences, quite possibly involving the police, suspension from school, and notes on the sexter's permanent record that could hurt their chances of getting into college or getting a job.

-Collect cell phones at gatherings of tweens and teens to reduce the temptation in the sending of sexts, as parties can be a being a major contributing factor.

-Stop your teenager from engaging in violent media and violent games.

- Among some of the more seriously violent games that are <u>not</u> recommended for teenagers to engage in use are: *Call of Duty, God of War, Grand Theft Auto, Mad World, Resident Evil, NARC,* and *Manhunt*.   Don't let them play these games.

-Learn the warning signs of trouble: if your teen is skipping activities, meals and homework to do social media; weight loss or gain; has a drop in grades. If these issues are occurring due to your teen being online when they should be eating, sleeping, participating in school or social activities, your child may have a problem with Internet or social media addiction. Contact your pediatrician for advice if any of these symptoms are occurring.

-If your teenager is over indulging in digital technology consumption, teach them the four R's: Rethink, Reboot, Reconnect, and Revitalize. Have them Rethink how much time they are interacting with digital devices, Reboot from their digital devices for a period of time, gradually Reconnect the technological gadgets one at a time and with limits set, and, finally, Revitalize by prioritizing human contact over electronic contact whenever possible.

-Teach your teen to modulate the use of personal pronouns in electronic communication. Count the number of times they use the word "I" or "me" and change how they've written something if they use these words too often to include others.

-Teach your teen to practice the four R's: Rethink, Reboot, Reconnect, and Revitalize. Rethink how much time you are interacting with digital devices, Reboot from digital devices for a period of time, gradually Reconnect the technological gadgets one at a time and with time limits set, and, finally, Revitalize by prioritizing human contact over electronic contact whenever possible.

-If you are concerned that your teen has anxiety, addiction, or depression, as a result of their relationship/over usage of their digital gadgets, have them talk to a professional and possibly join an Internet addiction self-help group.

-Pay attention to signs of childhood depression in your teens. One in nine adolescents will experience a serious bout of depression.

-Discuss with your teen about the unrealistic images of thinness and beauty that are portrayed in media and in computer game characters.

-Encourage your teen to have a rich social life

-Make certain that your teen participates in regular exercise.

-Practice yoga.

-Learn multiple languages.

-Learn to play a musical instrument.

-Consume Omega 3 fatty acids.

Appendix I

Good websites for resources and tips:
www.commonsensemedia.org
www.netfamilynews.org
www.netsmartzkids.org
www.thatsnotcool.org
www.isafe.org
www.cyberbullying.us
www.healthychildren.org
http://safetynet.aap.org

Appendix J

Below are some treatment centers and resources for Internet and digital addiction in the United States:

McLean Hospital in Belmont, Massachusetts, has a Computer Addiction Services unit. www.mcleanhospital.org/

*Online Gamers Anonymous*is a twelve-step, self-help, support and recovery organization for gamers and their loved ones who are suffering from the adverse effects of excessive computer gaming. The organization provides a variety of message boards, daily on-line chat meetings, a Saturday and Wednesday Skype meeting, and other tools for healing and support. www.olganon.org

ReSTART, a residential treatment center for Internet addiction and "pathological computer use", in Fall City, Washington. www.netaddictionrecovery.com

www.gamingaddiction.net promotes responsible gaming including Internet games, online gambling, and fantasy sports. They advocate a simple three pronged approach to responsible gaming: Understand what gaming is; Solve problems that are created by excessive gaming; act out the solution and live a healthier life free of gaming addiction.

Appendix K

**Sample of Common Sense media agreement
for parents and teens in high school**

I will protect my reputation and privacy.
__I will create privacy settings on social networking sites.
__I will keep my passwords private.
__I will not give out my personal information (like my address) to someone I don't know.
__I will not put myself at risk by posting or sending sexy or scandalous photos.
__I will not post anything on my profile that I wouldn't want my parents, teachers,   college admissions officers, or future empolyers, to see.

I will demonstrate my maturity.
__I agree to only use the Internet responsibly and not be hurtful to anyone.
__I agree not to use technology to cheat in games or in school.
__I agree to flag and report content that is potentially inappropriate.
__I will be mindful of how much media I consume and will balance it with other activities in my life.
__I will confide in an adult if anything potentially dangerous happens online.

I will think first.
__I know that not everything I read or see is true, and I will think about whether a source or a person is credible.
__I agree to think about and understand anything I download or any survey I fill out.
__I will earn my independence and my parents' trust.
__I will help my parents understand why media is so important to me.
__I will show them how to use the tools that I like if they're interested in learning.
__I will recognize that my safety and well-being is more important to them than anything else.

In exchange, my parents agree to:
__Be open-minded about the media that I love and recognize that it's a big part of my life, even if they don't always understand why.
__Let me make some mistakes and help me learn from them.
__Before saying "no", talk with me about what worries them and why.
__Respect my privacy and talk to me if they have concerns.
__Embrace my world: try to understand downloads, IM, online games, and Web sites that I like.

_____   _____

Signed by Me   Signed by my parents

(Commons Sense Media, Inc. 2012)