



A Review of Digital Addiction: A Call for Safety Education

Joseph, Rugai¹
Joy-Telu Hamilton-Ekeke²

^{1,2}Department of Teacher Education, Faculty of Education, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria.
(² Corresponding Author)

Abstract

In reviewing digital addiction, this paper recognized that digital technology has been useful in various spheres of life and the reach is undeniable, with an “average” user spending long hours on their phone or online daily. These hours increase as new applications are released by various technological companies. The demands of modern lifestyles have also led to heavy dependence on various digital technologies for information, inter-personal relationships, entertainment and even economic transactions. There is no doubt that the over dependence on digital technology may result in addiction. Digital addiction is similar to other addictions; those suffering from it exhibit compulsive behaviour and use the virtual fantasy world as a substitution for real-life human connection. Although all of its true effects are not known, the impacts on an addicted users’ life are serious and may led to social isolation, anxiety, depression, immune system disruption, brain damage and even death, Indeed, we are all at the receiving end of digital technology and deserve adequate safeguards and protections against the attendant risks of this technological revolution. In recommendations, health and safety education, time restriction and constant monitoring should be employed to safeguards healthy ways of using digital technology.

Keywords: Addiction, Digital, Health, Safety, Technology.

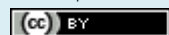
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1. Introduction

The new digital age has brought about extraordinary developments in technology and this is beginning to alter the way many people access, use and react to information. The digital and internet technology is evolving at a very fast rate, and the things thought to be impossible are now becoming a reality. The reach is very amazing; long queues have disappeared from the banks due to automated teller machines (ATM), time spent on traveling is reduced due to phone calls, and a lot have been produced to improve entertainments and to make life easy in every way. Indeed this consistent digital and internet technological developments that help connect the world can be seen as either beneficial or detrimental to human relationships and health.

Some of the most prominent digital technological innovations which have greatly affected many aspects of our lives are smart phones, laptops, iPods and many more. These gadgets depend either partially or totally on the internet technology to function properly. Today the Internet continues to grow day by day at an incredible speed and about 32.7% of the world's population has access to the internet. The internet has become ubiquitous, faster, and increasingly accessible to non-technical communities and social networking and collaborative services, enabling people to communicate and share interests in many more ways. Sites like Facebook, Twitter, Linked-In, YouTube, Flickr, Second Life, Delicious, Wikis, and many more have made it possible for people of all ages to rapidly share their interests of the moment with others everywhere (Briggs, 2012).

The World Wide Web is altering human social interaction and the way the brain processes information. Consequently, scholars dive into the potential of gadgets addiction and its effect on other behavioral changes. Through reviewing basic demographics along with psychological and behavioral implications, scholars remain torn on whether technological gadget addiction exists but ultimately agree that the new digital age does influence the development of the human mind. There has been much debate about how to define this addiction, but no one has been able to agree on anything (Razieh *et al.*, 2012). Most definitions include continued use of technology even after it has caused problems in one's social and professional life (Gencer and Koc, 2012) as an overarching phrase to suggest an increasing trend of compulsive behaviour amongst users of technological devices (Briggs, 2012). In order to define digital addiction, Christakis (2010) compared the key components of addiction to include preoccupation with the substance or behavior; repeated unsuccessful attempts to reduce it; mood disturbances related to reduction attempts; greater usage than anticipated or desired; jeopardizing employment, relationships or education; or lying about usage. All of these criteria, at least theoretically, can be seen with digital addiction.

Cassidy (2014) noted that almost four in 10 young people fear they are addicted to the internet, according to new research, prompting fears from children's campaigners that youngsters could leave themselves vulnerable to cyber bullying. Rao *et al.* (2012) found that addicts spend about forty (not attributed to work-related time) hours per week on the internet and video game players who play two to seven hours per day become less aware of what is going on around them even when they are not playing. Those who use the internet excessively have a different brain composition than those who spend less than two hours each day (Cohen, 2011). This is not the only frightening effect that too much technology can have on a person there are more to be reviewed by this paper.

2. What is Digital Addiction

In order to explain what digital addiction is, it is important to define an addictive behavior. Addiction according to Cash (2011) begins to take hold when we do it too much; the brain is forced to withdraw neuro-receptors in an effort to restore balance especially when we no longer get the high from the same level of activity or drug use. In the case of behavioral addictions, that withdrawal involves primarily psychological symptoms (irritability, restlessness, poor concentration, increased anxiety and depression, etc). Once an addiction takes hold, the addict is either chasing another high or trying to avoid withdrawal. This, in turn, leads to obsession and engaging in the behavior in spite of negative consequences. Addictive behavior is also reported to mean compulsively repeating a behavior at the cost of everything in life. The addict may not sleep, miss out on relationships, social interactions, health, well-being. Any addictive behavior will cause the same damage in the brain at the receptors as a drug will do (CBS News, 2012).

Digital addict is colloquially used to describe a person whose interaction with technology is verging on excessive, threatening to absorb their attention above all else and consequently having a negative impact on the well-being of the user. When it is used as a conversational phrase, digital addict describes an increasingly common dependence on devices in the digital age. The phrase "Digital addiction" is used to pinpoint the possible warning signs in being over exposed to technological gadgets at a time when the rate at which the use of digital gadgets in daily activities is ever-increasing and the possibilities of becoming dependent upon them is becoming frightening.

Digital addict is used as an overarching phrase to suggest an increasing trend of compulsive behavior amongst users of technological devices, recognizing that over-exposure to and over-use of technology can result in a dependence on digital devices, leading to behavioral symptoms similar to any addictive disorder, as the user neglects to maintain a healthy balance between using technology and socializing outside of it. The negative side-effects of overusing technology have in recent decades attracted increasing attention as a legitimate psychological disorder. Unrestrained use of technological devices may impact upon developmental, social, mental and physical well-being and result in symptoms akin to other behavioral addiction. Some studies have sought to establish a connection between the use of the internet and patterns of behavior (Jeráld, 2008; Ollie, 2013). Internet addiction disorder was recommended for further study within an appendix of the manual, demonstrating the addictive qualities of technology as warranting further medical and academic research.

Digital addiction is therefore a behavior-oriented addiction and maybe described as the physical and mental dependence on the use of digital devices. Whilst still debated, the potential for internet or digital devices to have addictive qualities is an emerging concern. In December 2013 researchers from the University of Maryland concluded the majority of students studied to be addicted" to their technological devices, likening their symptoms when forcibly separated from technology to those experienced when withdrawn from an addictive substance (International Center for Media and the Public Agenda, 2011). The potential developmental side-effects of internet use are also recognized by the American Academy of Pediatrics in children under two years of age (Council of

[Communications and Media, 2014](#)). Furthermore, South Korea's concern for the attachment its younger generation has to technology is even greater, with their parliament considering passing a law to curb obsessive game use within the country by classifying online gaming as a potentially anti-social addiction ([Cavaliere, 2008](#)).

Apart from digital addiction researchers have also reported another technological addiction known as Internet addiction disorder (TAD), also called problematic or pathological Internet use. It is characterized by an individual's inability to control his or her use of the Internet, which may eventually result in marked distress and functional impairments of general life such as work or academic performance, social interaction, occupational interest and behavioral problems ([Aboujoude, 2010](#)). The description regarding TAD is based on the definition for substance dependence or pathological gambling, which shares properties of substance dependence like preoccupation, mood modification, tolerance, withdrawal, distress and functional impairments ([Beard and Wolf, 2001](#)). Kids can get a natural high when logging onto the internet and when playing the latest video game, or instant-messaging with their friends. There can be an almost compulsive need to get the digital boost. This need is not going unnoticed by professionals.

3. What are the Different Types of Digital Addictions

Digital addictions manifest in several ways that cover various degrees and areas of technological usage and some are

- Media addiction: Television, movies, video, games, music.
- The following areas listed by [Gandolfi \(2010\)](#).
- Information overload: Too much online surfing leads to decreased productivity at work and fewer interactions with family members.
- Compulsive Addiction: Excessive time spent on the phone or in online activities such as gaming, trading of stocks, gambling and even auctions often leads to overspending and problems at work.
- Cybersex Addiction: Too much surfing of porn sites often affects real-life relationships.
- Cyber-relationship Addiction: Excessive use of social networking sites to create relationships rather than spending time with family or friends may destroy real-life relationships.
- Virtual Addiction
- Internet Addiction
- On-line Solicitation

[Gandolfi \(2010\)](#) provided a new list of types of digital addiction to include Facebook Addiction Disorder (FAD), Youtube Addiction Disorder (YAD), Google Search Addiction Disorder (GSAD), Widget Addiction Disorder (WAD), Twitter Addiction Disorder (TAD), Blackberry Addiction Disorder (BAD).

4. Possible Reasons for Digital Addiction

The world is much busier now than ever before. From work, to errands, to schools, to shopping, almost everyone is constantly on the go. Today's digital technology enables us to make phone calls, surf the web, send e-mail, and send text messages all with one small device.

While the use of phones and other socially interactive digital devices have been very convenient in everyday activities, the resultant effect is that continuous use and dependence will likely lead to the addiction of these digital devices. A DoubleClick poll recently found that as many as four in ten Americans consider their high-speed Internet connections "essential" to their daily lives and another two in ten said they felt the same way about their CD and DVD players, along with their cable subscription [Bo and Worth \(2005\)](#). Technological gadgets have become a necessity rather than a convenience. Indeed the reliance on technology is replacing interpersonal relationships and face-to-face interaction and thereby negatively impacting life at home, work and play.

[Sunwoo and Rando \(2002\)](#) enumerated some of the reasons for digital addiction to include: personal factors such as low self-efficacy, introspective characteristics, impulsive behaviours, lack of communication skills and a feeling of isolation. The second reason for internet addiction is social in nature, such as weak family support, and a combination of socio-psychological factors derived from interpersonal relationship between the individual and the family. The third reason is internet-related factors such as easier internet access, longer internet usage time, and superior internet skills. Another major reason why so many teens use technology and the Internet to communicate is their shyness or social anxiety. Human beings are often motivated by a need to feel a sense of belonging; however, teens who experience social anxiety fear having face-to-face conversations and turn to their phones and the internet to fulfill this need ([Pierce, 2009](#)).

Cell phones have also provided the freedom to busy parents, enabling them to engage in family activities with their children during work hours ([Lanigan, 2009](#)). The integration of computers into homes has also allowed people to keep up with relatives at different corners of the world with just the click of the mouse thanks to e-mail and social networking websites such as Facebook, MySpace and many more. While technology has provided instant access to family members, it has led to isolation from face to face interaction. Conversations that were once held at the dinner table are now being replaced by cold text messages. While the medium effectively relays the message, it lacks the substance that a face-to-face conversation provides.

[Gandolfi \(2010\)](#) reported that 83% kids in the US who don't have friends socially use the internet to find and keep online friends. A lot of people including children now hand out in web cam, cell phones, e-mail, instant messaging, chat rooms, blogs, discussion boards, web pages, download/upload sites, facebook, myspace, twitter and so much more. Furthermore, people are getting busier and adopting easy and fast lifestyles. Quality family time is now hard to come by, yet when the time is created it is spent in front of a screen and planned around the media, such as TV shows. Even when family members spend time together by using media in proximity to one another, they often engage in separate activities ([Bugeja, 2005](#)). For example, it is common to see a family in a car on a family trip with the parents making a business call on their cell phones while the kids in the backseat watch DVD ([Aric, 2010](#)).

Indeed the habit of using digital technology on a daily basis has increased the time people spend looking at computer screens than at each other and visiting homepages rather than homes.

5. Risk Factors for Digital Addiction

The summaries of risk factors for digital addiction as presented by helpguide (2013) are listed below:

- Suffering from anxiety: The use of digital devices to distract self from worries and fears. An anxiety disorder like obsessive-compulsive disorder may also contribute to excessive email checking and compulsive Internet use.
- Depression: The Internet can be an escape from feelings of depression, but too much
- Time online can make things worse. Internet addiction further contributes to stress, isolation and loneliness.
- Presence of other addictions: Many Internet addicts suffer from other addictions, such as drugs, alcohol, gambling, and sex.
- Lack of social support: Internet addicts often use social networking sites, instant messaging, or online gaming as a safe way of establishing new relationships and more confidently relating to other,
- Unhappiness: the Internet addicts could feel more comfortable than real-life friends.
- Less mobile or socially active than you once were: For example, coping with a new disability that limits your ability to drive. Or parenting very young children, which can make it hard to leave the house or connect with old friends.
- Stress: While some people use the Internet to relieve stress, it can have a counterproductive effect. The longer time spent online, the higher the stress levels will be.

6. Effects of Digital Addiction

Excessive gaming, viewing online pornography, emailing and text messaging have been identified as causes of a compulsive-impulsive disorder by Dr Jerald Block, a leading psychiatrist and author of an editorial for a respected American Journal of Psychiatry. Block (2008) argues that the disorder is now so common that it merits inclusion in the Diagnostic and Statistical Manual of Mental Disorders and stated that digital addiction has four main components. These are, Excessive use; often associated with a loss of sense of time or a neglect of basic drives, Withdrawal; including feelings of anger, tension and/or depression when the digital gadget is inaccessible, The need for better gadgets; more software, or more hours of use with negative repercussions, including arguments, lying, poor achievement, social isolation and fatigue. Block (2008) concluded that digital addiction is now a serious public health issue that should be officially recognised as a clinical disorder, People with this illness show signs of “a loss of sense of time or a neglect of basic drives, withdrawal, feelings of anger, tension, and/or depression” when deprived of access to computers and other digital technologies.

Lin *et al.* (2012) reported a primary case study in South Korea, which has the greatest use of broadband in the world. 10 people died from blood clots from remaining seated for long periods in internet cafes and another was murdered because of an online game. South Korea now considers internet addiction as one of its most serious public health issue&. The government estimates that around 210,000 South Korean children are affected and in need of treatment, of whom 80 per cent might need drugs targeting the brain and nearly a quarter could need to go to hospital. Since the average high school pupil there spends about 23 hours per week gaming, Block (2008) also noted that another 1.2 million are believed to be at risk of addiction and require basic counseling. There has been alarm over a rising number of digital addicts dropping out of school or quitting their jobs to spend more time on computers.

The “addiction” to digital technology does not only have the potential to affect the mental well-being but can also cause intolerance among users to others around, especially when in public. Young people are undoubtedly becoming very rude because of overuse or misuse of digital technology. This rudeness and lack of manners can be observed nearly everywhere — from phones ringing during classes, to aggressive driving while on the phone, to offensive language during ‘phone calls in public. In 2001, Public Agenda, a nonprofit research organization, surveyed approximately 2000 Americans via telephone in order to examine their attitudes regarding moral and ethical behavior associated with phone use. Almost half of the participants say they often see people using cell phones in a loud or annoying manner in public, yet only 17% of cell phone users admitted participating in this annoying behavior. The results of this poli concluded that people are unaware of their lack of manners or are just simply in denial, According to another poli conducted by Associated Press, nearly 70% of adults said that people are rude now on the phone than 20 or 30 years ago and blamed this rudeness on their busy lives and the use of new technology (Carter, 2006).

This “techno-rudeness” can be directly linked to the fact that technological gargets are always available. The amount of time spends immersed in the media environment affects the way one behaves and interacts outside of that space. The student who spends nearly 30 hours a week on a Blackberry will be prone to taking a phone call during a class, when in religious places, or at other inappropriate times. According to Professor Michael Bugeja of Iowa State University, the availability of media invites abuse, and when these abuses become habitual, these actions cease to be taboo. Bugeja call this phenomenon “digital displacement” and defines this “as what happens when the demands of the real-world conflict with those of the virtual, resulting in too many people paying too much attention to gadgets and ignoring reality” (Mandell, 2007; Jagadesh, 2013).

The addiction to digital technology and its products have seriously distracted adolescents from their school work Gandolfi (2010) can cause serious health problems; a study finds that internet addiction may actually damage the brain -- the same as too much alcohol or drugs (CBS News, 2012). Another study attempted to link illegal downloading of online content and Internet addiction to inappropriate and even “deviant” behavior in teenagers (Navarro *et al.*, 2014). Depression and bi-polar disorder in its depressive swing were co-morbid features of pathological Internet use smoking, drug abuse were also related to digital addiction (Gencer and Koc, 2012). Indeed today’s technology calls attention in several ways at once (texting and driving, listening to music while doing

homework, talking on the phone while surfing the internet, etc.). This means only partial attention is given to each task that is performed and the stress placed on the brain causes burnout (Rao *et al.*, 2012) or leads to “popcorn brain” as noted by Cohen (2011). Digital addiction is also directly linked to people who have social anxiety (Razieh *et al.*, 2012).

These are not the only adverse affects of abusing technology. When people become more isolated and interact more with technology, gene transcription starts to malfunction, immune systems are disturbed, and there are more heart risks. They also have a higher risk of contracting a chronic disease. Technology addiction affects the way brains recall information (Rao *et al.*, 2012). It also reduces motor and psychological development (Jagadesh, 2013). In addition to the social and physical effects, there are also psychological effects. People who are addicted to technology regularly experience irritability, and do not think clearly (Rao *et al.*, 2012). Part of the reason why certain technologies like online games and applications on a smart phone are so addictive is because they give those who use them “psychological highs” (Cash and McDaniel, 2014). Technology is clearly addictive and has many negative outcomes.

7. Conclusion and Implication for Safety Education

The need for health and safety education in reducing the problem of digital addiction cannot be over emphasized. This is because digital addiction has a lot of negative impact on health and safety. Surveys show that digital addiction interferes with night’s sleep leading to headache, body pain and fatigue. This is a major health issue and calls for health education. A survey shows that 33% of mobile workers admitted that they check their phones for email and message throughout the night. Nearly 50% of those surveyed said, they wouldn’t even think of going to bed without have their phone’s tucked under their pillows This may not only present a medical challenges but also personal safety challenges. There are evidences that technological garget such as Smartphone, ipad, tablet etc usage is responsible to blur the distinctions between the work and family life (Block, 2008; Dong *et al.*, 2011; Idugboe, 2011). Due to the simple and light designs of the devices, most employees now take their work into the home domain which results in work - home interference (WHI), As a consequence, the blurring work and family life might worsen work - family balance or even lead to the disintegration of such family, leaving the children to grow under a single parent.

It is also essential to provide children with safety education concerning cyber bullying which is another major issue connected to digital and internet addiction, Examples of cyber bullying include mean text messages or emails, rumors sent by email or posted on social networking sites, and embarrassing pictures, videos, websites, or fake profiles. Children who are bullied are more likely to use alcohol and drugs, skip school, experience in-person bullying, are unwilling to attend school, receive poor grades, have lower self-esteem and have more health problems.

Cohen (2011) warned that it can be dangerous if patients start avoiding personal interactions with doctors for mandatory tasks. This warning became necessary due to the increased of people who now seek for medical help on-line and even search names of drugs for different health challenges. Health and safety education is necessary in reducing the rate of accidents associated to phone use. The study by Pei (2006) showed that addiction to echnological gargets has increased the rate of road accidents. Another study by Bianchi and Phillips (2005) reported that young drivers with mobile phone use addiction featured prominently in automobile accidents, this study supports community concerns about mobile phone use, and identifies groups that should be targeted in any intervention campaigns.

8. Recommendations

As we transit from a fully wired society to a wireless one, people especially children and youths deserve adequate safeguards and protections against the attendant risks of the digital technological revolution. Health and safety education is recommended to provide age and gender sensitive education on the good of digital technology use and the bad of digital addiction. For example, education should emphasis on the health effect of getting addicted to digital technology.

Cassidy (2014) recommends firstly, a definition of internet addiction that is both validated and applicable to children, adolescents and adults alike should be developed. Secondly, a better scientific understanding of which types of usage pose the greatest risk of addiction. For example, Virtual reality games in particular, where participants assume other identities or collaborate with team members all over the globe, may pose the greatest risk of addiction, since frequent and continuous online presence is both vital and expected; moreover, going offline can have penalties associated with it. The profit margin of these new, subscription-based games is based entirely on keeping people playing and therefore paying. Purveyors of these products therefore have a perverse incentive to develop addictive games. Thirdly, effective primary prevention strategies need to be developed, tested and implemented. Limits on screen time of all types are important for all children, but in the advent of ubiquitous access these are increasingly difficult to enforce. Providers, parents and teachers require approaches that are proven effective and that allow for necessary and even healthy internet usage. Fourthly, a targeted prevention approach, identifying children at greatest risk for addiction, is also important. Children with preexisting psychosocial morbidities may be at greatest risk, and their internet usage should be more explicitly monitored and regulated by guardians, and protectors.

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