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DIGITAL TECHNOLOGY, LITERACIES, AND IDENTITY: EXPERIENCES OF HISTORICALLY MARGINALIZED ADOLESCENTS

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BY

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DISSERTATION

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DEDICATION

For

The Ancient of Days

I beheld till the thrones were cast down, and the Ancient of Days did sit, whose garment was White as snow, and the hair of his head like the pure wool: his throne was like the fiery flame, and his wheels as burning fire.
Daniel 7: 9

And

He who was seated on the throne said, "I am making everything new!" Then he said, "Write this down, for these words are trustworthy and true.

Revelation 21: 5

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I dedicate my life and this work to the Ancient of Days.

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ABSTRACT

New media and digital technologies shape the literacy practices and identity development of adolescents (Ellison, 2014, Barton & Hamilton, 2000; Perry, 2012; Lotherington & Jenson, 2011). Research into this phenomenon has largely focused on the general adolescent population. However, this narrative inquiry focuses on the experiences of four adolescents of color in New York City who live in poverty. Participants in this study visit a neighborhood library to access computers and the Internet. The researcher conducted semi-structure interviews in the library to evoke narratives about participants' use of digital media and observed participants as they used the library computers. Analysis of data revealed several patterns in their stories. None of the participants had daily, personal access to technology outside of school. Their schools provide little time on computers and minimal access to the Internet. One student did have extended computer time for English language learning, and another had a used cell phone with no data plan. All participants exerted enormous effort to gain limited access to computer time after school on weekdays only. At the library computers, they completed school work, played games, used social media,

learned English, and conducted research. These literate practices enabled playful learning by doing and the trying on and crafting of identities in these virtual spaces. Students developed hope for future careers--as a photographer, an animator, a medical doctor, and a film maker.

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Chapter 1

Introduction

New media and digital technologies, encompassing the Internet, video games, emailing, instant messaging, and social media sites (e.g., Facebook, Instagram, YouTube, Pinterest, and Twitter) are reshaping human psychosociocultural lives. These are creating a new experience in the ways people interact, communicate, conduct business, and access entertainment. Digital tools are driving learning practices among young people who are inextricably attached to the tools for diverse literacy practices, which include reading and writing, communicating, socializing, and consuming, creating, and distributing a wide range of media texts (Beavis, Apperley, Bradford, O'Mara, & Walsh, 2009; Gee, 2007; Jenkins, 2006a; Lankshear & Knobel, 2008, Leu, Kinzer, Coiro, & Cammack, 2004; Prensky, 2005, 2006). A report by Pew Research Center showed that 14% of adolescent Internet users ages 12 to 17 in the United States were avid bloggers and constituted 24% of people who used twitter to communicate or interact (Madden et al., 2013).

The wide range of digital platforms accessible to young people provide them sites of identity enactments (Alvermann, 2001; Boyd, 2006; Compton-Lilly, 2006; Dezuanni, 2010; Ellison, 2014; Gutierrez & Beavis, 2010; Gee, 2003; Lotherington & Jenson, 2011; Merchant, 2010; Rogers & Winter, 2010; Wenger, McDermott, & Snyder, 2002). In *What Video Games Have to Teach Us About Learning and Literacy*, Gee (2003) concluded, "Video games recruit identities and encourage identity work and reflection on identities in clear and powerful way" (p. 49). He identified three forms of identity that young players enacted through video games as real-world identity, virtual identity, and

projective identity, respectively depicting the interface between their offline, online, and future identities.

The wide variety of adolescents' digital engagements exemplifies the notion of new literacies or multiliteracies: a generic term that describes 21st century or contemporary perspectives on literacy, which promote literacy as a social practice (Coiro, Knobel, Lankshear, & Leu, 2008; Kalantzis & Cope 2011; Lankshear & Knobel, 2011; London Group, 1996; Prensky, 2005, 2006a). Lankshear and Knobel (2006) described the brand of literacy as "socially recognized ways of generating, communicating and negotiating meaningful content through the medium of encoded texts within contexts of participation in Discourses (or, as members of Discourses)" (p. 64). The authors' definition mirrors a genre of literacy that is rooted in sociocultural practices of facilitating knowledge (Banaji, 2013; Brandt & Clinton, 2002; Gee, 2007; Kalantzis & Cope 2011; Lave & Wenger, 1991; Street, 2003).

Thus, as a situated social practice, literacy is mastery of the social practices of particular discourses and encourages learning across time and space. This implies that learners have to contest and negotiate meaning around every day events and issues around power and privilege, remaining consistent with social practices in the real world (Knobel & Lankshear, 2014; Scribner & Cole, 1981). Within the context of social practices, a number of socio ethos promotes active and experiential learning by youngsters. This ethos includes communities of practice (Wenger, 1998; Wenger et al., 2002), participatory culture (Boyd, 2014; Jenkins, 2006b; Knobel & Lankshear, 2014; Lave & Wenger, 1991), content creation and distribution (Livingstone, 2004; Sefton-Green, 1999), and socialization via affinity spaces (Gee, 2013). Scholars have argued that

the presence of this ethos promotes self-learning and academic independence in new literacies, while the absence in conventional literacy results in adult domination and student passivity and dependence (Besnier & Street, 1994; Gee, 1991, 2003; Freire, 2000; Street, 2003). Thus, in contrast to conventional literacy, which is teacher-led and involves regurgitation of dominant ideologies, the notion behind new literacies is conceptualized on the premise of cooperative, distributed, and participatory practices (Jenkins, 2006c).

Acknowledging the significances of new literacy practices, Ito et al. (2008) asserted that the technology-mediated literacy brand had become the tool for helping today's youths gain increased visibility and voice in their learning, in addition to empowering them to be critical shapers of their lives and environments. Ito et al. (2008) stated,

> If we look at children and youth through the lens of digital media, we have a population that has been historically subject to a high degree of systematic and institutional control in the kinds of information and social communication to which they have access. This is one reason why the alchemy between youth and digital media has been distinctive; it disrupts the existing set of power relations between adult authority and youth voice. (p. ix)

Ito et al.'s (2008) arguments speak to the promise of digital tools to help adolescents from historically marginalized backgrounds attain their fullest potentials across their various endeavors (Leu et al., 2014; Madden et al., 2013; Pearson, 2002). As some studies showed, limitless access to digital resources could be the great equalizer for adolescents from historically marginalized backgrounds (Barseghian, 2013; Fairlie, 2014; Gladieux &

Swail, 1999; Pachon, Macias, & Bagasao, 2000; Panel on Educational Technology, 1997).

This narrative inquiry explored the lived experiences of four adolescents from historically marginalized backgrounds regarding their use of digital technologies and the ways the tools shaped their literacy practices and identities. Adolescents from historically marginalized backgrounds, in the context of the study, refer to young people from low socioeconomic and ethnic minority households who are at the risk of being less or poorly educated. They may also be English language learners, immigrants, and students with disabilities.

The study provided detailed perspectives and understanding about the ways participants experienced a variety of digital tools for reading and writing, entertainment, communication, socialization, and media content creation and sharing. The study demonstrated the ways participants utilized the tools for self-learning, self-representation, and self-invention, and the significances of the usage on their way of thinking, values, and responses to issues of power, race, ethnicity, social justice, and empowerment (Bennett & Maton, 2010; Gee, 2007; Hase & Kenyon, 2001; New London Group, 1996; Selber, 2004; Street, 1995).

Research Question

The research question is the following: What can the experiences of adolescents from historically marginalized backgrounds tell us about their literacy practices and identity development in relation to their access to and use of digital technologies?

The question addressed the ways participants gained access to digital tools to interact and use the tools for learning, communication, entertainment, socialization, and

identity enactments. The question allowed me to elicit detailed information from the lived experiences of participants on the subject, to understand better ways in which they accessed and profitably used the digital resources within their reach.

Statement of the Problem

Studies on adolescents' use of digital technologies have largely focused on the lived experiences of general adolescent population and not focused specifically on marginalized adolescents (Gilbert, 2010; Jared, 2014; Lenhart, 2015; Subrahmanyam, 2000; Valkenburg & Peter, 2009). Consequently, not much information is available about the ways historically marginalized adolescents cross the daunting bridges to digital inclusion and use digital technology in valuable ways to enrich their educational and socio-emotional experiences. Given this shortfall, scholars have called for an extension of research on the subject matter to include perspectives from underserved young people (Gaye, Tanaka, Richardson, & Kazuhiro, 2010; Leurs, 2016). Consequently, this study sought to gain insights into the individual lived experiences of participants, regarding their access and use of digital technologies for a variety of literacy practices.

Purpose of Study

My personal curiosity in many ways informed this intellectual journey to enable me to gain insights into ways I could best work with historically underserved children and adolescents via integration of digital technologies in instructions. To fulfil this personal motivation, I explored, observed, analyzed, and described the lived experiences of participants regarding their interactions with digital technologies and the ways in which the tools shaped their literacy practices and identity development. As an addendum, I sought through the research to understand the ways participants engaged the

tools in developing a sense of agency around societal values and practices, including power relations, race and ethnicity, social justice, and empowerment.

Bogdan and Biklen (1998) explained that through their studies, researchers advocated issues, circumstances, and lived stories or experiences that might otherwise be silenced. Mazzei and Jackson (2009) similarly described qualitative researchers as change agents who documented "the authentic voice from whatever refrains it from coming into being, from relating the truth about the self" (p. 1). Drawing on these arguments, I placed myself within the research space as a change agent to give voice to traditionally marginalized perspectives via participants' stories, experiences, practices, values, struggles, and achievements that represent their truths. The study aimed at producing practical knowledge that could kindle policy actions toward digital equity and brighten the future for the target adolescent population.

In addition, it was intended to understand ways in which underserved young people engaged electronic tools in developing a sense of agency around societal values and practices, including power relations, race and ethnicity, social justice, and empowerment.

Significance of Study

This study was significant due to its pointed concentration on a population of adolescents whose digital experiences have been thinly researched (Gilbert, 2010; Jared, 2014). Keeping this in mind, I saw the study as a relatively fresh line of research that could provide multiple perspectives and deep insights into the ways new media technology shapes the learning practices, social experiences, and ultimate personal empowerment of the target population (Cochran, 1999; Yosso, 2006). As a scholar, the study was of great significance to me in learning more about how technology could be

used to support the education of historically marginalized adolescents and help them fulfill their life's yearnings. The study had the potential to inform educational policy and classroom practices to serve better typically marginalized adolescents, such as the students who participated in this study

Assumptions and Limitations

Qualitative research requires transparency. Providing particulars on data and methodologies chosen to execute studies enable researchers to reveal their "experiences, values, and positions of privilege in various hierarchies have influenced their research interests, the way they choose to do their research, and the ways they choose to represent their research findings" (Harrison, MacGibbon, & Morton, 2001, p. 325).

To make the study as open, explicable, and acceptable as possible, I specified several assumptions that I held coming into this research. My first assumption was that, as historically marginalized individuals whose voices were constantly repressed within governing structures, participants would take advantage of the opportunity afforded by the study to share their experiences and perspectives on the subject. I equally held the assumption that participants' lived experiences would point to important findings that could enhance knowledge about their digital experiences. I also wanted to explore the power of new media and digital technology to enrich their learning experiences by empowering and transforming their lives in multiple ways.

The small size of the study limited its generalizability to a larger population of target adolescents. The study was intended to encourage participants to reflect and share their lived experiences, and consequently provide rich descriptions of the experiences. According to qualitative researchers, the aim of most qualitative studies is not to

generalize, but to offer thick descriptions of a given context (Clandinin, 2000; Crites, 1986; Meriam, 1998; Polit & Beck, 2010; Savage, 2000).

Given the interpretive nature of qualitative study, I acknowledged the susceptibility of this research to subjective analysis and interpretations. According to Merriam (1998), researchers are primary instruments of data collection and data interpretation; hence, they filter processes of research from their lived experiences, personal values, and philosophical standpoints that ultimately shape research outcome. This suggests that qualitative researchers cannot entirely disconnect self from research interpretations, which inevitably is an essential part of qualitative research (Goffman, 1989). However, the ethic of the qualitative research requires the researcher to interrogate oneself and elements of research continually to monitor the distortions or preconceptions that he may inadvertently introduce in his study (Denzin, 1994; Schofield, 1993). As I sought to foreground the voices of participants, I engaged in reflexive practice throughout the process, using reflexive journals to explore and dichotomize my personal experiences and data obtained from participants.

Definition of Terms

Various terms were used through the study, sometimes interchangeably, in relation to the research subject. The terms include the following:

***Adolescents*:** Preteenagers and teenagers between the ages of 10 and 19 (American Psychological Association [APA], 2002a; McNeely & Blanchard, 2009). This age bracket is characterized by rapid biological and emotional development. Individuals experience changes in terms of identities, values, behaviors, and worldview, which inform their smooth transition from childhood demeanors to culturally customary adult

behaviors (Berzonsky, 2004; Lerner & Castellino, 2002; Zimmer-Gembeck & Collins, 2003). Participants for this study were between 13 and 19 years or age.

***Adolescents from historically marginalized background*:** Young people who are from poor socio-economic and racial minority backgrounds, who are at risk of being poorly educated (Franzak, 2006). This group of adolescents is often a product of discriminatory policies and similar practices embedded in social structures, such as the school system, where they are often presented with learning that is irrelevant to their realities. As a result, they are underperforming and failing in school with dire consequences in their later lives (APA, 2002b; Hudley, 2016).

***Digital Divide*:** The gulf between individuals who have access to the Internet and digital technologies, and those who lack access (Chakraborty & Bosman, 2005; Compaine, 2001; National Telecommunications and Information Administration [NTIA], 1999; Norris, 2001; Warschauer, 2002). The gap points to the socioeconomic disparities between underprivileged and privileged people, limiting developmental opportunities for both adults and young people from low-income and racial minority families (Haan, 2004; Leu et al., 2004; Warschauer, 2002, 2003).

***New Media and Digital Technologies*:** New media and digital technologies digital include computerized devices, such as desk and laptop computers, smart phones, electronic tablets, and digital platforms, including the Internet and social media networking sites (Boyd & Ellison, 2007; DeFleur & Melvin, 2010; Jenkins, 2006c; New London Group, 1996). Extensive use of the devices in contemporary times has been found to transform the ways humans communicate, socialize, conduct business

transactions, construct knowledge, and engage in leisure activities (Gee, 2007; New London Group, 1996).

Organization of the Study

The ensuing five chapters present the study. Chapter 2 offers a review of the literature related to the study. Sections within the chapter include (a) Adolescent Literacy in a Digital World, (b) Growing Up Digital: Identity Enactment, and (c) Digital Divide. Chapter 3 provides an explanation of my methodological approach, the rationale for the methodology, the research site, participants, the process of data collection, data analysis, and evidence of quality and ethics. Chapter 4 presents the narrative accounts of each of four participants in the study. Chapter 5 discusses the recurring or common threads in participants' narrative accounts, revealing themes that attend to the research questions regarding participants' use of digital technologies and the ways the tools shape their literacy practices, identities, and personal empowerment. Chapter 6 concludes the study, with recommendations for educational policy and classroom practices.

Chapter 2

Literature Review

Introduction

This chapter of the study is structured around three categories of literature: (a) Adolescent Literacy in a Digital World, (b) Growing Up Digital: Identity Enactment, and (c) Digital Divide. The chapter provides insights into access and usage of digital technology by teens and the ways in which the tools shape their literacy practices and identities. It contains discussions of challenges and opportunities regarding digital access and use of digital technologies by adolescents from historically marginalized backgrounds.

Adolescents and Literacy in a Digital World

The world has changed dramatically since the industrial age. The emblem of the depth of change was the digital revolution, which accelerated the change from the analog invention of the Industrial Era to digital technologies, beginning in the mid-1990s (Internet Archive, 2009). The bi-products of the revolution, new media and digital technologies, have altered every aspect of human lives and endeavors.

The Internet and computers, video games, smart phones, text messaging, emailing, and social media have become vital links in the ways the world communicates, socializes, and trades in goods and services and accesses entertainment (Herold, 2016; Thomson, Purcell, & Rainie, 2013). These tools help others run healthcare, transportation, and electricity power generation systems, as well as intelligence gathering by national security agencies (Garry & Misty, 2010; Jenkins, 2006a; Tapscott, 2009). Digital technologies have also brought about many exciting educational opportunities,

influencing and shaping what, where, and how knowledge is provided. In addition, these have brought significant changes to the process of information dissemination, ensuring instant access to news, weather reports, political events, and developments across the globe (Garry & Misty, 2010).

With mobile devices, such as electronic tablets and smartphones, people can complete the transactions of daily life digitally, including buying and selling, making payments for services and goods online and offline, and using online banking. Lavin et al. (1990) commented, “For most of us, it is hard to imagine daily life without the influence of technological devices, be it handheld video games, personal digital assistants, cell phones, or any number of computers” (p. 1).

For most adolescents today, growing up in a digital, media-saturated world means immersion in digital culture, characterized by unparalleled levels of global online communication and social interaction that involves mass information sharing, collaboration, and content creation and dissemination (Jenkins, 2006a; Miller, 2011). It also implies spending virtually every moment of their lives on the Internet and on digital devices, exploring the social, cultural, and technological significances of digital texts and codes, which significantly shape the way they socialize, behave, think, and communicate day-to-day (Anstey & 2006; Palfrey & Gasser, 2008; Prensky, 2001a; Pullen & Gitsaki, 2010)

Today's adolescents, who have been reared in the digital age, often possess exceptional know-how and have earned various designations, such as digital natives (Prensky, 2001b), the Net generation (Bullen, Belfer, Morgan, & Qayyum, 2009; Tapscott, 1988), digital generation (Chulmeister, 2010; Gibbons, 2007; Hosein, 2010; Musgrove,

2008; Tapscott, 2009), the millennials (Howe & Strauss, 2000; Taylor & Keeter, 2010), and Generation M (Rideout, Foehr, & Roberts, 2010; Roberts, Foehr, & Rideout, 2005).

Tapscott (1988) described the concept of digital culture as a youth culture, which superseded the pop culture of music, television, and the motion pictures. Tapscott (1988) implied that, the same way that the baby boomers experienced traditional media for socio-cultural change and new media technology, which was more influential owing to its participatory, engaging, and interactive nature, was deeply shaping the ways that net generations or millennials experience and make sense of their worlds. Tapscott (1988) elucidated,

> This new culture is rooted in the experience of being young and also in being part of the biggest generation ever. But most importantly, it is a culture that is stemming from the N-Gen use of interactive digital media. We should pay attention because the culture which flows from their experiences in cyberspace foreshadows the culture they will create as the leaders of tomorrow in the workplace and society. (p. 55)

Digital culture embodies evolution of cultural contents, diffusion of cultural assets, innovative social practices, and participatory and co-construction of knowledge, which evolves into individual and shared empowerment (Deuze, 2006; Quiggin, 2006; Martin, 2008). On average, young people spend between 7 and 9 hours per week, actively immersed in various aspects of the digital culture (Common Sense Media, 2015; Lenhart & Madden, 2007a; The Neilsen Company, 2013). Their online behaviors can be sorted into learning, socialization, communication, and entertainment (Braun, 2007; Bullen et al., 2009; Gardner & Davis, 2013; Gee, 2003, 2004, 2008; Green, Reid, & Bigum, 1998;

Paris & Paris, 2001, Underwood, 2007). Thus, their online behaviors repetitively expose them to an abundance of multimodal texts that allows them to experience knowledge both intuitively and experimentally (Crescente & Lee, 2011; Gee, 2007; Klopfer, Osterweil, & Salen, 2009; Lankshear & Knobel, 2006; Leu et al., 2004; Moreno & Mayer, 2000; Morrison & Bowen, 2006; Prensky, 2001b).

Increased usage of digital technologies by adolescents has correspondingly shaped and boosted their learning (Adrien, 2013; Ahn, 2011; Albrechtslund, 2008; Gere, 2002; Subrahmanyam & Greenfield, 2008). Among others, their use of technologies includes Web surfing, instant messaging, emailing, texting, gaming, listening to music, watching video, video-chatting, blogging, podcasting, creating media content and sharing, and forming or/and joining social groups (Braun, 2007; Common Sense Media, 2015; Gee & Hayes, 2009; Gross, 2004; Jenkins, 2006a; Lenhart & Madden, 2007b; The Neilsen Company, 2013). Others include completing homework and classroom assignments, conducting research, watching educational and entertainment videos, writing, reading digital stories, taking quizzes, learning spellings, and monitoring news (Adlington & Hansford, 2009; Furman, 2015; Lam, 2009; Leu & Reinking, 2005; Purcell, Buchanan, & Friedrich, 2013; Wempen, 2011). A substantial body of research has documented that the use of digital technologies makes learning fun, interactive, and engaging for young people (Hooker, 2015; Grant & Basye, 2014; Moeller & Reitzes 2011), as well as promotes collaborative learning (Coiro et al., 2008; Cope & Kalantzis, 2000; Dillenbourg, 1999; Lankshear & Knobel, 2011; The New London Group, 1996).

Conversely, social networking sites, such as Facebook, Instagram, and Twitter, offer young people the platforms to make friends, socialize, and form social groups to

exchange ideas, co-negotiate, and construct knowledge and fulfill common goals and interests (Greenhow, 2009). Practices within the sites remain consistent with communities of practice (CoP), which contextualizes learning as an activity that involves groups of people who share similar goals, passions, and interests, and cooperate over time by sharing thoughts and creativities. Through such interactions, they expand their knowledge (Agrifoglio, 2015; Lave & Wenger, 1991; Wenger et al., 2002). The idea of communities of practice is parallel to Gee's (2004) affinity groups or spaces. Gee's (2004) affinity groups or spaces describes real or virtual settings that foster collaboration, shared interest, co-creativity, mutual participation, and shared expertise and distribution models of learning. Elaborating on the concept, Gee (2004) described affinity spaces as representing,

> …specially designed spaces (physical and virtual) constructed to resource people [who are] tied together ... by a shared interest or endeavor ...by a shared interest or endeavor…[For example, the] many websites and publications devoted to [who the video game 'Rise of nations'] create a social space in which people can, to any degree they wish, small or large, affiliate with others to share knowledge and gain knowledge that is distributed and dispersed across many different people, places, Internet sites and modalities (magazines, chatrooms, guide, recordings) (p. 73).

Thus, online communities of practice and affinity spaces offer locations for young people to interact and engage in learning as a social process as opposed to formal learning, as obtainable with schooling (Dungan et al., 2014; Jenkins, Ito, & Boyd, 2015; Lam, 2007; Lenhart, Madden, Smith, & Macgill, 2007a; Tusting, Ivanič, & Wilson, 2000). Examples of such communities or spaces include video games and social media sites.

Young people spend a significant amount of time playing video games, such as massively multiplayer online role-playing games (MMORPG), as well as spending time on social media sharing information and sending messages. Their activities within these digital environments create ample opportunity for them to learn, while also giving them voice and prompting their self-agency for future success (Braun, 2007; Ellison, 2014; Gross, 2004; Lampe, Ellison, & Steinfeld, 2006; Lenhart & Madden, 2007b). MMORPGs have been established to offer social and emotional benefits that positively enhance adolescents' self-esteem, relationships, and social connections. Olson (2010) found that multiplayer online games could offer "a safe space for young people to negotiate rules and discover the boundaries of acceptable behavior – such as the point where creative strategies are viewed as crossing the line into cheating or taking unfair advantage" (p. 2). She noted that games could support players in understanding social norms, confronting *negative* emotions, such as coping with their anger and frustration. On social media, adolescents frequently communicate with each other and their families through texts, instant messages, emails, voice and video calls and chatting (George & Odgers, 2015; Lankshear & Knobel, 2006; Prensky, 2006; Subrahmanyam & Greenfield, 2008; Wolak, Mitchell, & Finkelhor, 2003).

Both video games and social media are also an important means of entertainment for young people (Barlett, Anderson, & Swing, 2009; Gentile, 2009; Prot, Anderson, Gentile, Brown, & Swing, 2014; Rideout & Robert, 2010). For example, video games provide young people high-quality entertainment, as well as facilitate their learning (Blumberg, 2014; Gee & Hayes, 2009; Lenhart, Madden, Smith, & Macgill, 2007b; Mayer, 2014). Gee (2007) asserted that high-quality video games were rich spaces for

situated cognition, where meaningful learning occurred within social contexts that encouraged co-construction of knowledge. Research shows that video games, such as *World of Warcraft* (WoW; Chilton, Kaplan, & Pardo, 2004), *SimCity* (Wright, 1989), and *Civilizations VI* (Ed Beach, 2016) have the potential to enhance cognitive development in young people. This enhancement occurs through activities that demand application of problem-solving, collaborative, creative, and critical thinking skills (Adachi & Willoughby, 2013; Ewoldsen et al., 2012; Granic, Lobel, & Engels, 2013; Leu, 2004; Prensky, 2012).

New media and digital technologies have also proved a big factor in adolescents' identity development (Lam, 2004; Moreno, Parks, Zimmerman, Brito, & Christaki, 2009). Turkle (1999) contended that through games, blogs, and other virtual engagements, adolescents could create real and perceived identity. The contextualized nature of the digital media and cultural influences allow young people to explore, construct, revisit, and expand their identities in multiple ways, including through self-promotion, self-advocacy, and self-representation (Gee, 2007; Gleason, 1983). It also allows them "to act out unresolved conflicts, to play and replay characterological difficulties" (Turkle, 1999, p. 644). Weber and Mitchell (2008) described identity as "personal and social bricolage" and as "an evolving active construction that constantly sheds bits and adds bits, changing through dialectical interactions with the digital and non-digital world, involving physical, psychological, social, and cultural agents" (p. 43). This suggests the nature of identity as fluid and constantly changing, depending on environmental influences and personal elections. Inevitably, adolescents who take advantage of different technology forms to explore their flexible self or fluid forms of

identity, which is the kind of identity they exhibit at that period of their lives, often emerge with stronger personalities (Lifton, 1993).

Much of adolescents' online behaviors are embedded in the notion of new literacies (Adlington & Hansford, 2009; Black, 2008; Buckingham, 2008; Gee & Hayes, 2012; Jenkins, 2006b). The literacy approach integrates a spectrum of literacy domains, encompassing information literacy, digital literacy, critical media literacy, media literacy, computer literacy, cultural literacy, and visual literacy (Black, 2008; Kist, 2007; Kress & van Leeuwen, 2001; Lessig, 2005). The wide-ranging activities that are involved in the practice of new literacies reveal its multilayered nature.

Contrary to the traditional notion of literacy, which is chiefly based on cognitive skills (Gee, Hull, & Lankshear, 1996; New London Group, 1996, 2000; Street, 1995), new literacies combine assortments of print, verbal, filmic, and digital texts in both the creation and dissemination of the content to wide multifarious audiences (Cope & Kalantzis, 2013; Lankshear & Knobel, 2006). Within the context of new literacies, “meaning is made in many different ways, always” and in “different modes and media which are co-present in a communicational ensemble” (Kress & van Leeuwen, 2001, p. 111).

Key aspects of new literacies include its collaborative, participatory, and distributive nature (Jenkins, 2006; Lankshear & Knobel, 2008; Squire, 2011). This denotes the marked shift in literacy, as conceptualized within traditional literacy practices from chiefly individual to collaborative activities entailing cooperative learning, social learning, co-creation/authorship, and distribution of knowledge (Lessig, 2005; November, 2010). Considering its contextualized nature, which affords learning in line with practices

in the social world, it presents literacy as a social practice (Cope & Kalantzis; 2013; Gee & Hayes, 2012; Lankshear & Knobel, 2011; Leu, 2000; Street, 1995).

As a social practice, literacy is conceptualized and patterned around social realities, such as human values, beliefs, attitudes, power relations, governance, politics, commerce, and so on (Braun, 2007; Buckingham, 2008; Gee, 1999). Harste (2003) explained that viewing literacy as a social practice meant having young learners understand the social, historical, and cultural structures and powers that were constantly "at play to position them in particular way" (p. 9). When literacy is viewed as a social practice, it is seen as drawing on the *funds of knowledge* they bring from within their community (Barton & Hamilton, 2000; Harste, 2003; Moll, Amanti, Neff, & Gonzalez, 1992; New London Group, 2000; Peterson & Eeds, 1990).

Vygotsky (1962) conceived knowledge as socially constructed or occurring within active learning communities, meaning that literacy was not a functional and autonomous practice, but a string of social practices (Harste, 2003). Rogoff (2003) noted that such a perspective could promote learning in a way that people developed mentally and socially, as they related to collaborators in their communities. Lending voice to the conversation, the New London Group (1996) emphasized that, "Our view of mind, society, and learning is based on the assumption that the human mind is embodied, situated, and social" (p. 19). According to the group, knowledge is constructed within socio-cultural and physical contexts, such as afforded by digital tools, and not in a vacuum or within a restricted context, such as school. The group's idea is consistent with Vygotsky's (1962) *tools of the mind*, which implies that human learning and development is intermediated by tools and signs. These aid effective coordination of the relationship

between internal mental thought and social thought for cognitive development (Bodrova & Leong, 1996; Vygotsky, 1978; Wertsch, 1991).

Thus, the concept of tools of the mind suggests that to meaningfully construct knowledge, young learners need to do more than memorizing facts or cognitive skills, but they must also master a set of mental tools, including reflective, creative, communicative and critical thinking abilities to solve problems effectively alongside instructional technologies. Alber (2013) observed that, because learning in today's world transcends classic literacy skills, the 21st century learner represented a problem solver, communicator, critical thinker, and collaborator. Leu et al. (2014) similarly stated, contemporary learners "identify the most important problems, locate useful information the fastest, critically evaluate information most effectively, synthesize information most appropriately to develop the best solutions, and then communicate these solutions" (p. 5).

Growing up Digital: Identity Enactment

Adolescence describes a period of transition from childhood to adulthood between ages 10 and 19, in which biological and psychological growth occurs in humans (Grotevant, 1998; Simmons & Blyth, 1987). It depicts a period when teens explore different ways to express their emotions to make sense of their selves and their worlds. This phase is when they begin to define or redefine certain characteristics relating to their socioeconomic upbringings, ambitions, hobbies, relationships, body image, and sexual orientations, among others (Arnett, 2007; Mäkinen, Puukko-Viertomies, Lindberg, Siimes, & Aalberg, 2012; Smetana & Villabos, 2009; Steinberg, 2008). It is also a time of a rapid change in their attitude, particularly, in terms of their resolute craving for privilege and autonomy from parents and authorities (Brown, 1990; Brown & Larson,

2002; Kail & Cavanaugh, 2010; Kaplowitz, 2001; Kroger, 1996; Larson &Wilson, 2004). According to Steinberg (2001) parents or other adults, who are not as supportive, are respecting the adolescent's assertion of independence.

Steinberg and Monahan (2007) traced defiant or aggressive adolescent behavior to different factors, mainly including excessive peer pressure, which they claimed have the tendency to lead many adolescents into experimenting with social vices (e.g., drugs, liquor, sex, and crime). Adolescents' sparse knowledge of certain life concepts, such as freedom, human rights, social roles, and male-female affairs, are equally recognized as big factors (Darwin & Carver, 1998; Havighurst, 1952; Ross, 2011).

Considering the series of events and conflicts that mark the phase, adolescence symbolizes an important phase in youth identity development (Erikson, 1968; Marcia, 1980; Strasburger, Wilson, & Jordan, 2014). Scholars have not clearly defined the term *identity*. Identity is ambiguous and fluid (Eccles, 2009; Erikson, 1959). Identity involves continuous negotiation, interpretation, and repositioning of self, as dictated by lived experiences, context, culture, time, and other certitudes (Hall, 1989; Hyland, 2012). A generic definition of the term presents it as who a person is or a set of qualities that uniquely marks out a person or differentiate him from others.

Erikson (1970) offered a far-reaching definition of the term, which has its roots in psychosocial interpretation (i.e., a merger of psychological, inner mind, and social relationships) of contexts. It describes identity as an individual's continuous procreation and representation of images of self, as well as his recognition by others in a certain way. Erikson's (1970) definition suggests that the construction of a person's identity is both personal and social. He believed that identity develops in adolescence occurred because

of a series of internal crises. These crises see adolescents struggling to develop a unique sense of self around who they are, what lifetime goals to pursue, what values to uphold, how to conduct themselves, and so on. He was of the view that an individual's response to the crises determines his or her definition of self and the kind and uniqueness of identity that evolves into adulthood (Erikson, 1950). In other words, adolescents, who can cultivate a strong and positive identity in adolescence, often progress more easily into adulthood (Albert & Steinberg, 2011).

While Erikson's (1970) concept of identity remains acclaimed and relevant, later scholars built on Erikson's (1970) explanation. Drawing on Erikson's (1970) psychosocial idea, Gleason (1983) considered identity as a natural process that involves a person trying out different aspects of self, such as lifestyles, appearances, body image, education, career ambitions, and skills that appeals to him or her (Cote, 1996; Lerner & Steinberg, 2004). Vander and Pace (1984) defined the notion "as an individual's sense of placement within the world," around the questions of "Who am I?" and "Who am I to be?" (p. 74). Hyland (2012) described it as "who and what you are" (p. 1), and it "is very much part of our participation in the routine social encounters of our everyday lives" (p. x.). Both definitions validate the social and cultural context of identity development.

In that sense, identity is recognized as socially constructed and involving collaborations, allegiances, identifications with social groups, interrogating structures, contesting, and negotiating meanings in texts, joint-actions, discourses, and communities of practices (Berger & Luckman, 1967; Hall 1989, 1996; Lave & Wenger, 1991; Paris, Byrnes, & Paris, 2001; Shotter, 1993). This perspective shows that an individual's identity is constantly developed and transmuted, as he or she relates with others within

social-cultural contexts (Danielewicz, 2001; Derry, 1999; Gee, 1999, 2000; Gredler, 1997; Kukla, 2000; Nias, 1989).

Conger and Petersen (1984) contended, "…adolescence begins and ends in culture" (p. 92). Studies suggest that through popular culture, adolescents can create, develop, and communicate unique identities (Abrams, 2009; Gee, 2003; Hinchmann, 2008). According to the studies, adolescents utilize digital tools for a variety of activities, such as connecting and interacting with people, sending text and instant messages, emailing, posting and sharing videos, music, photos, and blogging, so that their identities are constantly shaped (Coje, 2009; Gauntlett, 2007; Gutierrez & Beavis, 2010; Hine, 2000; Lotherington & Jenson, 2011; Palfrey & Gasser, 2008). Obtaining feedback in the form of likes and comments by friends and others on content they post (e.g., Facebook, Instagram, Twitter, and YouTube) often engender personal reflections by many adolescents. It can encourage them to use the platforms to discursively craft or recraft their identities (Alvermann, 2001; Alvermann et al., 2012; Buckingham, 2008; Dezuanni, 2010; Merchant, 2010; Rogers & Winters, 2010; Thomas, 2007).

In his reflection, Gee (2001) described identity as a blend of individual's experiences and self-perceptions. Gee (2001) stated, "Being recognized as a certain 'kind of person,' "in a given context, is what I mean … by identity" (p. 99). He used his concept of *little-d/Big-D Discourse* (Gee, 1999) to frame the concept of identity. His notion of *Big 'D' Discourse* captures the ways in which people enact and recognize socially and historically significant identities through blending language, behavior, ways of thinking, clothes, food, customs, actions, interactions, objects, tools, technologies, beliefs, and values. The notion stresses how *discourse* or conversation/language usage

among people or social groups shape diverse historically formed Discourses that influence their identities and fosters a larger framework for the analysis of discourse, with a little d, meaning the analysis of language used in everyday conversations and interactions. Gee's (1999) little discourse/Big Discourse, therefore, portrays a view of identity as a phenomenon that exists within different social groups that people belong. This demonstrates that, as they engage in the discourses/Discourses and adopt the specialist language, values, and practices associated with the social groups, their identities are correspondingly shaped in line with practices in the groups. In other words, this suggests identity as a socially and historically constructed experience through d/Discourses, connoting that d/Discourses are *identity kits* that occur in the social setting of the groups that affiliate with entrenched identities. By implication, Gee's (1999) little-d/Big-D Discourse necessitates an understanding of identity as the gradual adoption by learners of the practices, specialist language, and ways of thinking that correlate with a discourse.

Furthermore, Gee (2000) pinpointed four distinctive types of identities, based on social and cultural views. Gee (2000) described the forms of identities as "four ways to formulate questions about how identity is functioning for a specific person (child or adult) in a given context or across a set of contexts" (p. 101). Gee (2000) called the first type of identity as "the nature perspective (or N-identities)" (p. 101). N-identity represents an identity that an individual cannot control because it evolves from forces of nature. For instance, being born either a male or female is a good example of the N-identities because people have no control over the gender they were born with. Gee (2000) observed that N-identity was important because society and culture saw biological

difference as a unique marker for difference; hence, "N-identities must always gain their force as identities through the work of institutions, discourse and dialogue, or affinity groups, that is, the very forces that constitute our other perspectives on identity" (p. 102).

The institutional perspective (or I-identities), the second of Gee's (2000) identity type refers to identities that are established by authorities within institutions. Gee (2000) argued that I-identities could be a practice or idea imposed on individuals within institutions (e.g., being a prisoner, doctor, student, and college professor). The third perspective of identity that Gee (2000) identified was the discursive perspective (or D-identities), which referred to traits exhibited by individuals, such as being caring or inversely callous. Gee (2000) stated that D-identities were shaped by social interactions, implying that the way "people treat, talk about, and interact" with others nurture and reinforce specific traits in them (p. 103). Gee (2000) placed D-identities on a continuum, contending that, these were either actively or passively recruited by individuals, implying that, "such identities can be viewed as merely ascribed to a person versus an active achievement or accomplishment of that person" (p. 104).

The fourth identity type by Gee (2000) is the affinity perspective (or A-identities). Gee (2000) argued that A-identities were shaped by shared experiences because of belonging to affinity group, which was a group an individual voluntarily joined and shared "allegiance to, access to, and participation in specific practices" (p. 105). Gee (2000) stated that being part of an affinity group and identifying, connecting, and engaging in its specific practices, "enables an individual to emerge, in part, as the 'kind of person' they are" (p. 106). This affinity perspective frames this study.

Affinity groups are semiotic social spaces where people interact and create meanings unique and characteristic of ongoing discourses (i.e., signs and symbols). According to Gee (2000), the groups or spaces develop in real, tangible sites, such as schools, church, professional associations, and virtual spaces, such as video games and social media, where diverse groups of people converge. They converge based on common interests and assumptions to share ideas and creative content during ongoing interactions: "An affinity space is a place or set of places where people affiliate with others based primarily on shared activities, interests, and goals, not shared race, class culture, ethnicity, or gender" (Gee, 2000, p. 67). Within the affinity space, construction of social meanings and knowledge is shaped by collective negotiation and interpretation. Affinity groups or spaces are informal platforms where people interact, pursue diverse interests and activities, and directly or indirectly imbibe traits or values characteristic of spaces or groups, which largely influence their identity development.

Gee's (2000) affinity identity notion closely connects with the process of adolescents' identity enactment via digital media. They use digital media to create multiple identities through shared interactions with others users or self-representation, as noticeable in games and social media. For instance, Facebook offers a unique site for identity enactment by adolescents through their interaction with other users and exchange of feelings, thoughts, and opinions around subjects beyond cultures, ethnicities, professions, hobbies, events, news, and sports (Gee, 2000). Participation in in these virtual communities, which begins from age 13 (Stern & Taylor, 2007), correlates with Erikson's (1950) stage of adolescents' identity development, denoting the beginning of a

phase, in which young people try to define who they are, their aspirations, and cultivate friendships toward crafting positive unique identity.

According to studies, the user-generated format of social media site makes it a unique platform in representing, negotiating, and crafting their identities by means of creating personal profiles, posting photos and videos, and making comments on subjects, in addition to other pertinent engagements (Boyd & Ellison, 2007; Calvert, 2002; Gross, 2004; Lenhart et al., 2007a; Valkenburg & Peter, 2009). Valkenburg (2008) asserted that adolescents used social media for many reasons, such as experimenting with their physical appearance or characteristics and seeking self-importance or gaining approval respecting their education, future career, hobbies, and other things of interests to them.

Fanfiction communities are other affinity spaces where adolescents gather. The communities provide members with the platform to write socially and collaboratively, discuss, critique, and create their own versions of existing work, covering novels, movies, and television productions (Black, 2007, 2008; Buffardi & Campbell, 2008; Thomas, 2007; Jenkins, 2006a). Jenkins (1992) stated that, through the communities, “Fans construct their cultural and social identity through borrowing and inflecting mass culture images, articulating concerns which often go unvoiced within the dominant media” (p. 23). By revisiting and reworking pieces of work within the fanfiction communities, not only can adolescents make personal meanings and expand the diversity of perspectives on them, but they can also challenge the dominant values embedded by the author. Because of the capabilities of these sites for negotiating meaning and making sense of associated practices, Richards (2007) considered Fanfiction as an important space for adolescents in exploring, negotiating, discovering and redefining their identities.

Video games also offer adolescents spaces for honing their identities. According to Gee (2003), “Video games recruit identities and encourage identity work and reflection on identities in clear and powerful ways” (pp. 49-51). He observed that videogame play immerses young people in a fluid process of identity enactment through interactions with certain groups of people (a Discourse community) and sharing common experiences in relations to gaming and related values (Gee, 2001). Research showed that games, such as *SimCity* (Wright, 1989*)* and World of Warcraft (Wow) (Chilton, 2004), not only provide valuable platforms for young people to engage in playful learning experiences and socialize, but these also help them to try out roles and behaviors by creating characters that enable them to negotiate different identities (Gee & Hayes, 2011; Gee, 2004, 2005, 2007; Hayes & King, 2009; Kafai, Fields, & Cook, 2010; Salen & Zimmerman, 2003; Turkle, 1995).

For instance, in playing *SimCity* (Wright, 1989), players are situated in a realistic context in which they take charge of running a city they created. During the game, players plan and provide infrastructure, provide jobs, and make far-reaching policy decisions that affect the virtual public within the game. Gee et al. (1996) explained that such multimodal, immersive learning experiences compelled players to reflect on their actions, experiment with ideas, interpret information, and making meaning within symbol systems – processes that shapes their identities. Building on the arguments, Wright (2004) described immersive gaming environment as “possibility spaces" (p. 20), where players can reflect on their perspectives through other perspectives in making meaning and gaining insights into new belief system, which has implications for their identity development. Abrams (2009) asserted that the

> Identity of a gamer not only reveals what he/she does (i.e., playing, and perhaps mastering, video games), but also it provides insight into the language, knowledge, experiences, and perceptions that are formed in relation to or as a result of video gaming. (p. 3)

From the massive amount of research evidence, I concluded that new media and digital technology, in its diverse usage for communication, entertainment, learning, socialization, and creative expression, provided an exciting and promising space for adolescents to make choices by developing their sense of self and identities (Eichenbaum, Bavelier, & Green, 2014; Ellison, Steinfield, & Lampe, 2007; Reid & Weigle, 2016; Turkle, 2012).

Digital Divide

Access to digital media is a fundamental aspect of lives and continues to increase knowledge and opportunities for people in occupation, commerce, information and communication, civic engagements, and social interactions, while simultaneously promoting individual development. In the United States and other developed countries, digital environments provide adolescents with sites for development of skills crucial for them to become successful, not only at school, but also at work places in the digital age (Gee, 2004; ICT Literacy Panel, 2002). Studies show that the adoption of digital technologies by adolescents enhances their mastery of skills, including the ability to locate, organize, comprehend, assess, generate, and allocate information using diverse digital resources (Ahn & Jung, 2016; Gilster, 1998; Lankshear & Knobel, 2008a). Adolescents' usage of new media technologies also shapes the way they think and draw

conclusions based on their experiences and knowledge within the context (Beers, Probst, & Rief, 2007; Evans, 2005; Hobbs, 2011a; Lankshear & Knobel, 2008b).

Studies show that digitalization has diminished the need for routine and labor-intensive tasks and increased demand for high-skilled tasks; hence, an increased demand has occurred for workers who can tackle traditional problems in creative and critical thinking, innovative, and interpersonal ways in the new digital economy (Kim, 2003; Marcolin & Squicciarini, 2016; New London Group, 1996; National Research Council, 2012). Thus, for the 21st century workforce, possessing educational degrees in specific professional disciplines is inadequate to fit into the digital economy (Bereiter & Scardamalia, 1993; Fadel, 2010; Fonseca & Chi 2010; Lave & Wenger, 1991).

Being digitally competent means the ability to use digital media competently in a specific educational, social, occupational context. It implies that an individual possesses a requisite level of digital literacy in utilizing digital capitals to solve practical tasks, learn, create, and communicate content to socialize and collaborate with others in accomplishing personal or shared goals (Anderson, 2014; Cazden et al., 1996; Gilster, 1998; Jenkins, 2006b; Lankshear & Knobel, 2008a). Being digitally competent also involves mastery of leadership, entrepreneurship, and organizational skills (Ferrari, 2013; Mossberger, Tolbert, & McNeal, 2007; Sanz, 2015). Other related uses include conducting banking transactions, booking flights, pay bills, and purchasing or trading online, which are necessary to function and fully partake in today's society and economy (New London Group, 1996; Jenkins, 2009).

Kim (2003) observed that, in an ever increasing digital culture, digital technology not only afforded adolescents the social, cultural, civic, intellectual, communication, and

economic skills and knowledge that would underpin their educational and economic pursuits throughout their lifetime, but also afforded motivation to participate as active players and collaborators within their worlds. However, in spite of the global advancements in digital technologies and widespread usage, not all persons can take advantage of the multitudinous opportunities offered by digital access because of a digital divide. According to the World Bank (2016), the number of Internet users tripled from 1 billion in 2005 to an approximated 3.2 billion at the end of 2015. The global organization noted that, despite the sharp increase in number of users of technology, "nearly 60 percent of the world's people are still offline" and "can't participate in the digital economy in any meaningful way" (World Bank, 2016, pp. 2-3).

Access to digital media and related resources meets monumental challenges that stem from the wealth and income inequality and have sustained the digital divide (Chakraborty & Bosman, 2005; Economist Intelligence Unit, 2013; Hargittai & Walejko; 2008). The digital divide is a term used to describe the economic and social disparity among prospective users of digital technologies regarding access and use (Chinn & Fairlie, 2004; Economist Intelligence Unit, 2013; Hilbert, 2011; Molinari, 2012; Norris, 2001; Robinson, 2015).

Research shows that, in the United States, individuals from historically marginalized backgrounds are largely relegated to the fringes of digital world. Haythornthwaite (2007) identified three types of groups in the United States who were behind in digital access. He described the first group as temporary, meaning persons who were increasingly closing the digital gap, while he called the second group ever-evolving delays, which referred to persons making transient minimal progress to reducing the gap.

The last group was those he called delay and exclusion group (i.e., those who might never attain digital access). Hispanics/Latino Americans, the United States' largest ethnic or racial minority group, and African Americans (U.S. Census Bureau, 2015) belong to the delay and exclusion group. Studies show that both groups are more likely to experience the paroxysm of the digital divide than their Caucasian Counterparts (Livingston, 2011; Haythornthwaite, 2007; Huang & Russell, 2006; Perrin & Duggan, 2015). In comparison with other ethnicities, African-American families earn lower paychecks; hence, they are at the lowest ebb of digitally (Campbell & Kaufman, 2006; Chakraborty & Bosman, 2005; Tumposky, 2001).

The low educational attainment of both African Americans and Hispanic-Latino groups is also a huge factor in digital access (Perrin & Duggan, 2015; Ryan, 2016; World Bank Report, 2016). Lenhart, Madden, and Hitlin (2005) approximated that three million adolescents mostly derive from low income and ethnic minority backgrounds in the country, lacking digital access. Their lack of access to digital technology or leaning on the wrong side of digital divide could mean a variety of things, such as the lack of

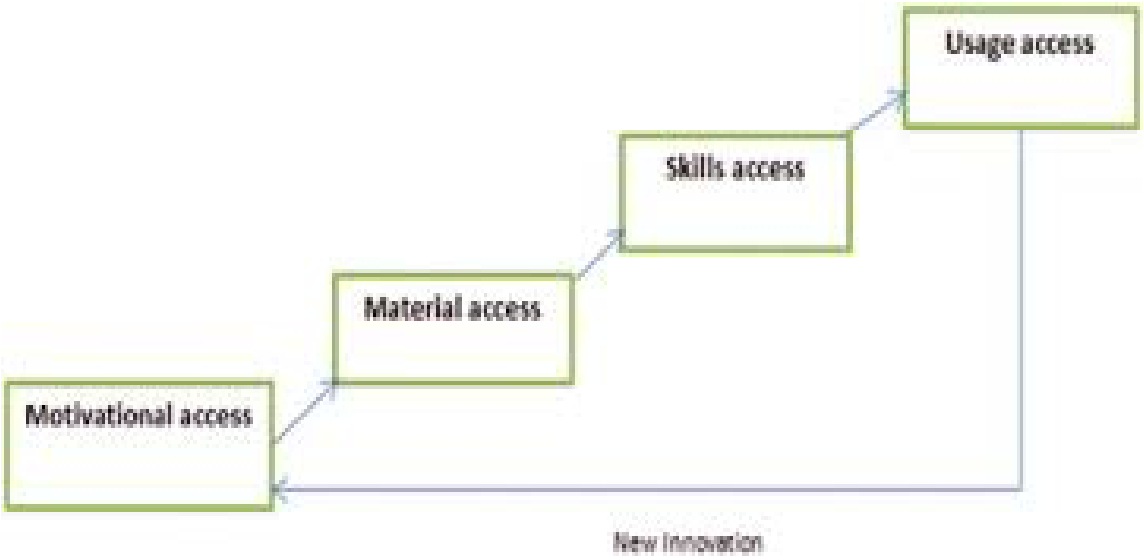

Figure 1. Types of digital Divide by van Dijk.

physical/material, quality usage access, skills access, and motivational access (Fonseca, 2010; Ribble & Bailey, 2007; Ribble, 2012; van Dijk, 2012).

Digital disparity mirrors the systemic segregation of ethnic minority adolescents, particularly regarding their education and pronounces huge adverse implications for their general progress (Bozionelos, 2004; Boyd, 2011; Common Sense, 2015). For instance, in school, while students attending schools in poor neighborhoods have considerably less access to digital devices and the Internet, their peers in schools in affluent neighborhood have both regular access to and use of the resources (Celano & Neuman, 2013; Center for Public Education, 2016; Gorki, 2003; Hudley, 2013; Journell, 2007). Leu et al. (2014) observed that, on occasions, when learners in poor schools use digital tools, the activities often involved rote memorization, such as preparing them for standardized tests that fell short of helping them to develop new literacy skills. The authors argued that, as a result, students in poor school neighborhoods could not take advantage of the promise of digital technologies.

Given the way technology is expanding human choices and values and making the world complex, and equally simplifying complex things, scholars asserted that low income and minority youngsters required greater access to new media technology to develop new literacy skills and give them an equal opportunity in life (Gaye et al., 2010; Journell, 2007). At this moment, their lack of access to digital limits broader development benefits for them (Chakraborty & Bosman, 2005; Page, 2002; Journell, 2007; NTIA, 1999; Warschauer, 2003; World Bank, 2016). Leu et al. (2014) asserted that adolescents, who do not have digital access, would continue to experience social exclusion and being systemically shut out of educational opportunities, as well as personal development and growth. Gaye et al. (2010) added that, without fresh possibilities, children from underserved backgrounds were most likely to experience lower educational achievement

or school failure, work on odd jobs, and have less chance of moving up the socioeconomic ladder over the course of their lives.

Nevertheless, studies showed that for low-income and racial minority kids, access to digital devices could be a great equalizer (Barseghian, 2013; Chambliss & Eglitis, 2016; Kanevsky, 2012; Kim, 2003). Lohman (2015) contended that access to digital devices could promote social inclusion of historically marginalized adolescents. It could provide them the opportunity to create powerful forms of self-representation that portrayed who they were, their interests, skills, and hobbies by empowering their voices through active participation in ongoing conversations and events within and beyond their environments.

Sawhney (2009) asserted that, universally, young people have stories to tell ideas about their experiences, culture, environment, and identity. He described their stories as often unique and meaningful, evolving from the sociocultural circumstances of their lives, such as their disenfranchised existence in inner cities, ghettos, and trouble spots. "Sharing these narratives is important not only for their sense of identity, understanding, and recognition by others, but as a form of creative expression and advocacy of issues in their lives" (Sawhney, 2009, p. 1).

Mark Zuckerberg, the founder of Facebook, in an interactive discussion at the UN Sustainable Development Summit expressed similar thoughts. Stressing the agency of digital technologies for socioeconomic transformation of lives across the world, he stated,

> In the classroom in India, a student is using the Internet to do homework, in Zambia, an expectant mother is turning to a mobile app to learn how to care for her child; in Uganda, a farmer is using his mobile phone to find the best prices for his crops, and for thousands of refugees mobile messaging has become a lifeline to food shelter, communities, and loved ones left behind. (UN Radio, 2015, p.

20).

Zuckerberg observed that for each 10 individuals who gain access to the Internet, one person among them was taken out of poverty. Because of their huge benefits, digital technologies represent more than a linkage of machines. These are an important driver of social and economic advancement for all. He called for transformative institutional change toward making Internet or digital technologies accessible to all people.

> Internet access needs to be treated as an important enabler of human rights and human potential. Just as denying people access to fundamental rights robs them of their full dignity and liberty, ensuring access is essential to achieving global justice and opportunity. The Internet should not just belong to the rich or the young; it needs to belong to everyone. (UN Radio, 2015, p. 20)

Morrow (2014) similarly acknowledged digital technologies as a key enabler of social inclusion, justice, and human potential. Morrow (2014) recognized digital access as an inalienable right of every child and youth, stating, “A child should not suffer in any shape or form in terms of the quality of their education because of individual differences such as, social status, lack of financial support, or family dynamics” (p. 2).

Furthermore, limitless access to and use of technologies by historically underserved youths will translate to improved formal and informal learning, self-expression, self-esteem, and personal improvement (Hague & Payton, 2010). Their presence on social networking sites and online gaming communities would mean the ability to connect with people within an interspersed geographical space to access knowledge collaboratively. This access would improve their social skills to be fully groomed for economically independent and successful adulthood (Davies & Merchant, 2009; Merchant, 2009).

Summary

In spite the significant challenges facing them in accessing digital resources, many adolescents from low-income and minority households in the delay and exclusion group in United States recognize the power of digital media to impart knowledge and life skills. These skills are crucial to transforming their lives and leading them to future success (Lenhart et al., 2007a, 2007b). Outside of home and school, they more often rely on public libraries to access and utilize digital tools (Brown et al., 2001; Glaubke, 2007; Hoffman, Bertot, & Davis, 2012; McManis & Gunnewig, 2012; McManis, Gunnewig, & McManis, 2010; NAEYC & Fred Rogers Center for Early Learning and Children's Media, 2012; Zielezinski, 2016). Studies showed that African American, Hispanic, and other ethnic minorities, including immigrant households, were more likely to use free library technology resources compared to their peers from White families (Beach, 2012; Haan, 2004; Horrigan, 2015; Schofield, 1993). Thus, public libraries serve as an important bridge for adolescents from underserved homes across the digital divide to access and participate in the digital media culture, gaining educational, economic, social, and emotional experiences and opportunities (Gates Foundation, 2006). Based on this review, I examined the ways participants took advantage of the opportunities afforded by a public library to access and use digital resources for a broad range of activities.

Chapter 3

Methodology

Introduction

This chapter contains a description of the research methodology used by this study. It contains the research type and design, researcher's role, methods of data collection, participants' recruitment process and selection, and research site. It also includes the procedures for analyzing and interpreting data and ensuring quality and integrity of the study. These components form the basis of research studies; hence, these are collectively referred to as the research design (Cozby, 2009; Creswell, 2007; Silverman, 2000).

Considering that past studies have largely explored the research subject from the general adolescents' perspectives, this study extended past work by narrowing investigation into the subject to the lived experiences of adolescent participants from historically marginalized populations (Granic et al., 2014; Lenhart, 2015; Subrahmanyam, 2000; Valkenburg & Peter, 2009). In the context of the study, adolescents from historically marginalized background refers to young people from low-socio-economic and racial-ethnic minority backgrounds who are at the risk of academic failure or not being properly educated (Bowles & Gintis, 2011; Tatum, 1997). The qualitative investigation sought to understand the ways the target participants' access and interact with digital technologies and ways in which their use of these tools shaped their literacy practices and identity development.

Qualitative Research

The study followed the tradition of qualitative research described by Creswell (1998) as “an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem" (p. 99). It involves a researcher building "a complex, holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting” (Creswell, 1998, p. 99). The focus of this research approach was on how participants created meaning and knowledge within their worlds and environments.

Research Design

Research design refers to the framework for investigating a phenomenon and the processes a researcher undertakes to fulfill the purpose or purposes of a study in a logical and definite manner (De Vaus, 2001; Gorard, 2013). Silverman (2000) described research design as a plan of actions detailing all phases of research, while Yin (1989) presented it as a plan that “deals with a logical problem” (p. 29). Vogt, Gardner, and Haeffele (2012) offered a similar description, which depicted it as a blueprint for providing answers to research problems in a systematic and logical manner. Several other descriptions denote it as a concept map, which guides research in learning about a phenomenon through a rationalized approach toward minimizing potential errors and authenticating the value of findings (Simons, 2009; Stake, 1995; Yin, 2003).

In executing research, qualitative researchers have a choice among a variety of research designs (Crabtree & Miller, 1999; Creswell, 2003). These range from narrative inquiry (Clandinin & Connelly, 2000; Creswell, 2012; Pinnegar & Danes, 2007), case study approach (Creswell, 2009; Mills et al., 2010; Yin, 2013), ethnography (Geertz,

1973; Guba & Lincoln, 1994), phenomenology (Creswell, 2009; Denzin & Lincoln, 2000; Giorgi, 1995; Moustakas, 1994), and grounded theory (Charmaz, 2014; Glaser & Strauss, 1967; Oktay, 2012; Savin-Baden & Major, 2013). Crabtree and Miller (1999) stated that one determined which of the research designs to utilize depending on the purpose and individual characteristics of each design in translating the studied into meaningful understanding.

In this study, to inquire effectively into the lived experiences of adolescents' from historically marginalized backgrounds regarding their access and use of digital technologies, I chose narrative inquiry research design. The use of the method enabled me to explore the topic through participants' lived experiences and to gain insights into the ways the tools shaped their literacy practices and identities. The use of the inquiry method afforded me the opportunity of collecting data that reflected the ways participants made meanings within their specific social, historical, and cultural locales through digital platforms.

Narrative Inquiry

The use of narrative inquiry in research draws on the notion that humans lead storied lives, individually and socially; hence, those stories provide the lens through which individuals make sense of their world and evolve into the persons they become (Clandinin & Connelly, 1994; Connelly & Clandinin, 2006). Clandinin and Connelly (2000) stated, "Narrative inquiry is stories lived and told" (p. 20) and "a way of characterizing the phenomena of human experience" (p. 2). Gottschall (2014) explained that the ability to create stories from occurrences around them was what set humans apart from other creatures, adding that story was omniscient in all facets of human life, and it

exemplified the way humans communicated, thought, learned, related with each other, and had fun. Gottschall (2014) stated, "Story is ubiquitous, story is powerful, nothing in human experience rivets attention, hooks human attention, holds human attention like a story" (p. 20). This implies that, as a storytelling species, humans produce stories that express their despair, hopes, struggles, beliefs, aspirations, knowledge, feelings, love, hate, and frustrations (Clandinin & Connelly, 1994; Clandinin & Murphy, 2007; Lieblich, Tuval-Mashiach, & Zilber, 1998; Riessman, 1993; Widdershoven, 1993).

Other perspectives depict the importance of stories for organizing and sharing experiences (Bruner, 1992), reflecting and reconstructing prior experiences (Ricoeur, 1994), making sense of the world and for self-edification (Bruner, 1987), and shaping and producing identities (Ricoeur, 1994; Sfard & Prusak, 2005). In relation with stories or lived experiences, Creswell (2003) presented narrative inquiry as the study of story or a method of thinking about lived experiences. He asserted that the inquiry approach allowed researchers the means to collect participants' stories and retell the stories by drawing on their own backgrounds to create a shared narrative.

Clandinin and Connelly (2006) described the research approach as both a phenomenon and method. They explained that, as a phenomenon, it denoted adoption of a particular view of experience as data, while, as a method, it provided an analytical or interpretive filter for thick descriptions of data or the studied phenomena. The authors' explanation remained consistent with Schwab's (1960) concept of *fluid inquiry,* which denoted the research design as "a way of thinking in which an inquiry is not clearly governed by theories, methodological tactics, and strategies," but, predicated on "overall life experiences with specific research experiences" (Connelly & Clandinin, 2006, p.

121). Shields (2005) lent credence to the dual functions of narrative inquiry as a phenomenon and method, describing both as "a theoretical and practical framework for (re)interpreting our lived experience" (p. 179).

Clandinin and Connelly (2000) asserted that as both phenomenon and method, narrative inquiry occurred within a three-dimensional space that served as both the sites of inquiry and conceptual framework. The authors described the first space of inquiry as temporality or the space of positionality, implying such capitals, including prior, current, and future experiences, personal idiosyncrasies, perspectives, philosophies, strengths, biases, education, culture, and other related backgrounds that the inquirer brought into the studies, which were critical to shaping the research processes.

The second space of the inquiry method is sociality and symbolizes the relational conditions that both inquirers and participants invest in the inquiry process, such as "feelings, hopes, desires, aesthetic reactions, and moral dispositions" (Connelly & Clandinin, 2006, p. 480). It includes the socio-cultural, linguistical, and physical or institutional baggage that the parties (researchers and participants) bring to the setting in co-constructing field texts, encompassing memoirs, diaries, interviews, field notes, and observations, in addition to making shared meaning of the texts.

The third space is referred to as the place and embodies the contexts of data collection, analysis interpretation, and synthetization of data into rich, detailed narrative form. It depicts "the specific concrete, physical, and topological boundaries of place or sequences of places where the inquiry and events take place" (Connelly & Clandinin, 2006, p. 480). In other words, it represents the naturalistic contexts in which researchers

execute their studies, which often includes homes, schools, libraries, offices, coffee shops, car, streets, shopping malls, airports, and farms.

Elucidating on the reciprocity of the relationships between inquirers and participants within the three-dimensional setting, Clandinin and Connelly (2000) stated, "Relationship is key to what it is that narrative inquirers do" (p. 189). The relationships are certainly not abrupt, but deliberate and carefully thought out and nurtured. These begin from the moment inquirers develop proposals for their studies, occurring through the stages of recruiting and selecting participants, collecting data, and negotiating meaning around the field texts evolving a common narrative around them (Andrews, Squire, & Tambokou, 2013; Clandinin & Connelly, 2000; Creswell, 2007; Creswell & Miller, 2000; Denzin, 1989; Pinnegar & Daynes, 2006). This shows that within the space, the inquirers and researchers are counterparts, working as co-shapers of the inquiry process and co-constructors of meaning toward forging a common narrative of the studied subject.

Aside from inquirers and participants, research audiences have equally been acknowledged to play important function overtly or covertly within the three-dimensional narrative inquiry space (Andrews et al., 2013; Connelly & Clandinin, 1990; Riessman & Speedy, 2007). Clandinin and Connelly (2000) contended, "Contrary to the sense that research data are audience free, in narrative inquiry, audience is always a presence and interpretively shapes the field texts constructed" (p. 102). What Clandinin and Connelly (2000) meant by their statement was that every action taken within the space was conceived and executed with the mind of communicating primed and acceptable knowledge to the audience. Clandinin and Connelly (2000) observed, "Stories lived and

told educate the self and others, including the young and those such as researchers" (p. xxvi). The authors equally pinpointed an important role of research audience within the space, in terms of providing feedback to ultimate research reports, which many times had the propensity to ignite a fresh direction for research subjects or the need broaden the scope.

Within the three-dimensional space were vital elements, including time, plots, and scenes, which collaboratively steered the inquiry process toward fulfillment of the set purpose (Connelly & Clandinin, 2000; Creswell & Miller, 2000). Clandinin and Connelly (2000) portrayed the workings of the inquiry space as "inquiries to travel – inward, outward, backward, forward, and situated within place" (p. 49), representing a space or an inquiry process that involved analyzing the past, present, and future within a given social context in constructing knowledge.

Usually, inquirers offer three justifications for their use of the inquiry method (Connelly & Clandinin, 2006). The first one, personal justification, suggests that the choice in conducting is inspired by an inquirer's lived experiences on the topic or topics being researched. The second justification is referred to as practical justification and connects the initiation of an inquiry to its practicability in shaping specific socio-cultural practices. The third justification, social justification, is inspired by an inquirer's intent to sensitize new procedural knowledge and policies in a given discipline through research findings.

Inquirers consider the research approach advantageous in many ways, particularly, in terms of its pertinence in amplifying traditionally suppressed voices and perspectives (Creswell, 2007; Trahar, 2013), such as envisioned in this study. Creswell

(2007) recognized the importance for diverse construction of realities and knowledge, describing it as a site of contestation against dominant notions and values and of empowerment for the marginalized. Denzin and Lincoln (2008) similarly described the inquiry method as "public spaces in which marginalized people's narratives can be heard even by those who normally do not want to hear them" (p. 81), also denoting it as a site for "retelling of stories that allow for growth and change" (p. 418).

Narrative inquirers equally approved of the inquiry method because of its receptiveness to multiple data collection sources in accumulating pertinent and in-depth data for thick descriptions of findings (Connelly & Clandinin, 2000; Crites, 1971; Freeman, 2007; Hollingsworth & Dybdahl, 2007). This is in addition to accommodating and allowing a flexible number of participants in an inquiry, which may range from small to multiple participants (Clandinin & Connelly, 2000).

My application of Clandinin and Connelly's (2000) concept of three-dimensional space of narrative inquiry in this study provided the windows through which I relationally and narratively explored the dimensions of temporality, sociality, and places that were embedded in participants' social experiences and actions on the subject. Gudmundsdottir (1991) contended that, self-narrative allowed humans to construe who they were and where they were heading in life. Gudmundsdottir (1991) further contended, "Stories are part of our identity and culture. We create stories about ourselves that we can communicate in various ways to our colleagues" (p. 207).

Working with such knowledge within the three-dimensional inquiry space, which was deeply rooted in extensive reciprocal interactions between the participants and I, afforded me deeper insights into participants' lived moments and agency around the use

of digital tools for varied social, cultural, linguistic, and institutional discourses. It allowed me to travel backward and forward within the inquiry space, exploring the past, present, and future, and linking my personal experiences with those of participants (Clandinin, 2013). This helped me to evolve knowledge collaboratively of the ways they profitably utilized tools for a variety of literacy practices, identity enactments, and personal empowerment (Beavis et al., 2009; Gee, 2003; Wonica, 2013).

The Role of the Researcher

A study is naturally prompted by the unique worldview of the inquirer, including his or her lived-experienced experiences, assumptions, subjectivity, and objectivity, which herald the processes (Kincheloe & McLaren, 2008). Sidebotham (2003) contended that a researcher's personal and professional roles typically added value to his or her research and enabled him or her to gain insights into certain information he or she might not have discovered in the research without such prior personal experiences. Peller (1987) asserted that it was implausible for researchers to remain neutral and objective. Elucidating, Denzin and Lincoln (2003), in their description of researchers as instruments of data collection, suggested that data were mediated through researchers, rather than through accounts, surveys, and other data collection methods.

Primarily, my role as the researcher in this study involved generating a written thick description of the lived experiences of participants regarding the subject. Seeing that the lived experiences of the target population on the subject had been thinly explored in previous research, I doubled as an advocate or change agent within the inquiry space to specifically magnify participants' perspectives and voices (Bogdan & Biklen, 1998;

Creswell, 2007; Greenbank, 2003; Mazzei & Jackson, 2009). Consequently, the study offered participants site of self-representation.

Consistent with my advocacy role within the inquiry space, I invested in warm, trusting, and reciprocal relationships with participants to foster a good rapport with participants (Clandinin & Connelly, 2000). Throughout the investigation, I worked with participants as partners, co-negotiators, and co-constructors of knowledge within the space. Rather than maintaining a distance as one investigating *others*, I inserted myself into the inquiry space as co-investigators with the participants to unearth collaboratively the truths and forge a common narrative. My insider or emic role not only allowed me to bring special knowledge to the research, but also facilitated data collection. An insider role status is acknowledged to confer legitimacy to researchers and study largely (Adler & Adler, 1987; Asselin, 2003; Kanuha, 2000). An essential aspect of my role was moderating and ensuring the smooth running of the discussion, supervising the process and dynamics, and introducing pertinent issues and ideas for response by participants to fulfill the research question (Denzin & Lincoln, 2003; Greenbank, 2003).

Research Site

The study took place in Lakefield Teens Library (pseudonym), a non-profit corporation located in one of the five boroughs of New York City, which offered a wide range of services including computers, Internet access, books, and other informational materials to young people, aged 12 to 18, living in Lakefield community. Teens from the community are primarily drawn to the library to access the library's computers and Internet. Additional digital resources and collections in the library included gaming systems and music/sound-recording studio and editing stations.

In general, the library provided multifunctional spaces that allowed the teens users to read, write, study, research, and collaborate on library's initiated literacy projects and socialize. From my investigation, I found that the library offered free beginning level computer classes monthly, in addition to career development workshops, college and job readiness fairs, and talent development workshops and performances. Ongoing training opportunities in the library, includes web page designing, resume preparation, PowerPoint presentation, video directing and production, digital applications, and social media networking. The site was selected due to its dedicated services to more than 120 teenagers who frequent the library daily from different parts of Lakefield community. The teenagers were from low-income and minority households and mostly lacked home access to computers and the Internet at home.

Lakefield, the host community, was one of the most densely populated and racially diverse communities in New York City. It was mostly home to low socioeconomic and racial minority groups, comprising African-Americans, Latino and Hispanic Americans, and immigrants from Caribbean Island, Puerto Rico, Guatemala, Mexico, Ecuador, Russia, and Ukraine. Demographics from the 2010 census showed that over half of the community's population was Black/African Americans (55%), while about a quarter (25%) was Hispanics. Racial composition and economic status of the community made access to decent housing, safe neighborhoods, and good schools difficult. This issue represented a significant presence of low-income public housing, high record of joblessness, uncontainable crime rate (Cusenza, 2014; Keldy & Thomas, 2016; Safe Space NYC, 2009), and mostly poorly funded and underperforming youths, stagnating at the bottom 25% of city schools in state standardized tests (O'Reilly, 2014).

Similar to other low-income neighborhoods, Lakefield was plagued by social menaces, including adolescent substance use, high teenage pregnancy rates, youth gangs, and high school dropouts (Bult, 2014; Fonner, 2005). It also hosted one of the school districts with the lowest on-time graduation rate in the New York City, around 67.7%, ranking 49th out of the total 59 districts in the city (Donachie, 2016). In addition, 71% of Lakefield's grownups age 25 and older were high school dropouts, while merely 23% of ninth and tenth grade students were registered in school. According to

In 2012, when Hurricane Sandy made landfall, the community was one of hardest hit in New York. The aftermath of the Category 1 storm resulted in massive destruction of homes and business, and it impaired public transportation, water supply, power, and other utilities in many parts of the community for months. Reconstruction of damaged homes and public conveniences remained ongoing in several parts of the community at the time of this study.

Participants

Qualitative researchers emphasized the importance of being conscientious about the attributes or characteristics of study participants to ensure that only participants who could best provide relevant and detailed data are recruited (Berg, 2014; Creswell, 2012; Merriam, 2002, 2009). Four participants were selected in relation to the research question (Miles & Huberman, 1994). To be selected, participants met the 13 to 15-year-old age bracket requirement, and they came from historically marginalized backgrounds (i.e., from low-income and racial minority households) and might be English language learners, immigrants, and students with disabilities. Participants have been active users of digital devices for at least 2 years and were willing to reflect on and share their

experiences for the purposes of the research, based on voluntary participation and informed consent. Confirmation of participants' fulfillment of the criteria was based on self-report and/or referrals from their parents. Table 1 below show the list of participants' profile.

Table 1: *Participants*

Pseudonym	**Age**	**Sex**	**Ethnicity**
Aaron	13	Male	African American
Tamara	15	Female	Puerto-Rican American
Maria	14	Female	Guatemala American
Bolo	14	Male	Sudanese

The number of participants selected for a study often depended on the subject and purpose, which was for generalization or particularization of results. For this study, generalizability of findings was not a major consideration; hence, the small size of participants was aimed at collecting in-depth data for providing thick descriptions about their lived-experiences on the subject. In other words, it provided an individualized description of the context that was studied. Fink (2002) contended that recruiting a large number of participants might impede the possibility of providing in-depth information and thick description data generated from participants studied phenomenon. This could occur because of the large volume of data that might have been collected from each participant. The central purpose of this study was thus to *particularize* meanings, interpretations, and inferences made from participants' narratives or lived experiences on the research subject and provide sufficient thick description to generalize.

OIRB Approval Procedures

The Institutional Review Board (IRB) instituted protocol to ensure that researchers conformed to ethical standards during research. This was to ensure that human participants in research were guaranteed protection from harm and not defrauded in the process (Resnik, 2011). Consistent with this tradition, a research protocol, articulating the procedures for recruiting and engaging participants, including gaining entry into research site, was initiated and presented to my university's Office of Institutional Review Board (OIRB) for necessary review. The research protocol guaranteed:

- Voluntary participation by participants.
- Freedom of participants to withdraw at any time during the course of the study without negative consequences.
- Informed consent as a prerequisite for participants' participation in the study (see Appendix B and C for copies of informed assent and consent).
- De-identification of all participants, their communities, schools, and sites of research using pseudonyms.

I began the study, following OIRB approval, with participants' recruitment and selection (see Appendix A for OIRB approval letter).

Sampling Strategy and Participants' Selection

Once I established the criteria for participants' engagement in the study and determined the number of participants who would be required in the study, I selected participants using purposive sampling. Purposive sampling is a non-probability sampling method, which is known as judgmental and selective, and allows researchers the liberty

of choosing research participants based on personal judgment (Black, 2010). Tongco (2007) portrayed the sampling technique as advantageous in studying a certain cultural group or informants with knowledgeable understanding of a field. My personal judgement in the sampling procedure entailed ensuring that only participants who could best attend to the research questions were selected based on the previously mentioned set criteria.

Utilizing the method after my initial entry to the research site and in collaboration with the librarian, I made an announcement over the paging system, inviting interested teenagers to meet with me at a designated section of the library a brief presentation on the study. I also moved around the library to reach out to the teens who were at different sections of the site. A total of 11 teens responded to the invitation and attended the presentation, which lasted about 20 minutes.

After I introduced and discussed the research, I took and responded to questions from one of the prospective potential participants, and I distributed copies of the consent and assent letters to each person, requesting that the documents be returned within 1 week of issuance. The letter provided particulars on the purpose of the study, the researcher and participants' roles, issues around participants' confidentiality, and details about audio recording of interviews sessions. Prospective participants and their parents or consenting adults were required to read the letters carefully and append their signatures, along with dates, to indicate their informed consent to participate in the study voluntarily. Upon completion and return of the letters, each prospective participants were handed copies each of one signed form for their records, while I retained all original copies. I

stored these in a locked, secure cabinet in compliance with the approved IRB protocol for the study.

Only 6 of the 9 prospective participants, who were present and received the consent and assent letters during my presentation on the study, completed and returned the letters within the given period. I enlisted the five prospective participants for the study, and thereafter scheduled interview and observation dates with each one of them. However, only four of the participants had telling narratives in relation to the research subject. Their narratives were subsequently, analyzed, and reported in this study.

According to McGinn (2008), researcher/participant relationships in qualitative research range from detached to intimate, cooperative, and genial. From my initial contact with participants, during my meeting with them to introduce the study, I sought and established close and mutualistic relationships with participants, acknowledging them as co-researchers. I communicated my position to them in that regard. For example, to build the kind of relationship, I spent time with them, socializing and engaging in casual conversations when I ran into any of them, both in and out of the research site. That relational approach enabled me to experience their worlds deeply, and they mine. This enhanced my ability to work with participants within an inquiry space that increasingly thrived in mutual trust, win-win cooperation, active participation, and mutual benefits.

Data Collection Methods

The data collection method refers to the variety of tools used by researchers to collect information in answering research questions (Brewer, 2000; Creswell, 2007; Flick, 2004). Depending on the research design, the tools available to researchers vary from interviews to observations, surveys, field notes, diaries, memoirs, artifacts, and

documents. For this study, the methods consisted of interviews, participant observation, artifacts/documents, and findings from a prior pilot study.

Interviews

Interviews are one-on-one conversations between researchers and participants, and these provide the means of eliciting answers in response to research questions (Kvale, 1996). According to Clandinin and Connelly (2000), interviews are an effective tool for learning from participants, respecting their beliefs, values, perspectives, opinions on issues, and the effects of their standpoints on their lives. Kvale and Brinkman (2009) described interviews as a site "where knowledge is constructed in the inter-action between two persons about a theme of mutual interest" (p. 2).

In qualitative studies, interviews serve as the principal means of collecting data and making meaning from participants' lived experiences (Clandinin & Connelly, 2000; Creswell, 2007). Kvale (2007) described the data collection method as "a key venue for exploring the ways in which subjects experience and understand their world. It provides a unique access to the lived world of subjects, who in their own words describe their activities, experiences, and opinions" (p. 9). In other words, interviews provide the means for researchers to gain valuable insights into participants' perspectives on studied phenomenon for eventual thick description of findings.

Three different types of interviews include unstructured, structured, and semi-structured interviews (Denzin & Lincoln, 2008; Green & Thorogood, 2009; Patton, 1990). An unstructured interview is an interview format in which there are no prearranged questions (Cohen & Crabtree, 2006; Fontana & Frey, 2005; Patton, 2002). In an unstructured interview, the interviewer primarily generates questions from his own

reflections or experiences on the topic and stories told by participants in the course of the interview (Briggs, 2000; McCann & Clark, 2005).

Structured interviews are the opposite of unstructured interviews and conducted using via predetermined questions that are administered to participants (Minichiello, Aroni, Timewell, & Alexander, 1990). Thus, structured interviews are highly structured in nature and have the disadvantage of limiting conversations or interactions between researchers and participants to itemized questions (Merriam & Tisdell, 2015). The strict restriction of questions to prelisted questions, therefore, deprives researchers from asking follow-up questions. These are often necessary to elicit elaboration on prior responses and comments to facilitate holistic data collection for comprehensive description of findings (Creswell, 2012; Patton, 2002).

Conversely, semi-structured interviews are a fusion of structured interview and unstructured interview techniques (Fontana & Frey, 2005). Semi-structured interviews occur similar to every day conversations between a researcher and participants, whereby questions are generated and administered to participants mostly unplanned. These draw on the discussing or ongoing conversation and simply require a set of guidelines or statements around themes discussed during the interviews (Clandinin & Connelly, 2000; Laforest, 2009).

Semi-structured interviews were adopted for this study. The adoption of the interview approach was based on its effectiveness within interpretive research paradigm, especially in narrative inquiries to collect thick information and thick, detailed description of the phenomena under study (Kvale, 1996; Kvale & Brinkmann, 2009).

For this study, I had one session of an hour-long interview with each participant, with each session beginning with a brief explanation of the purpose of the study, the topics to be discussed, and both researcher and participants' responsibilities. The interview was conversational, but it drew on topics from a pre-prepared interview guideline. During the sessions, participants were allowed to do the talking, while I actively listened with minimum intrusions all through the period (Laforest, 2009; Miller, 1965). However, consistent with Riessman's (1993) suggestion, as an active co-negotiator and co-constructor of meanings alongside participants, moderating the research procedures and events, I intermittently asked clarifying and follow-up questions, as at when necessary. Riessman (1993) argued, "Interviews are conversations in which both participants – teller and listener questioner – develop meaning together" (p. 55). The conversations with participants were recorded on an audio digital device, while I also took copious notes on the proceedings, based on suggestions by researchers (Creswell, 2012; Cohen, 2006; Kvale, 1996).

The interviews were held in a relaxed seating area in the Lakefield Teens Library, the study site, in New York City. The chosen spot was the quietest section of the library, with comfortable seats, and it was far-removed from the busy main section of library. The conduciveness of the spot afforded deep relational interactions and reflections between this researcher and participants (Creswell, 2012; Hauser-Cram & Shonkoff, 1988; Magnusson & Marecek, 2014).

Interview guidelines. In line with narrative inquiry tradition, I created interview guidelines prior to my interviews with participants (Clandinin et al., 2013; Clandinin, 2014). The guidelines covered subjects around participants' biographies, lived

experiences using digital devices and other themes in relations to the research subject (Layder, 1993; Mishler, 1986). The flexible nature of semi-structured interviews afforded me the opportunity of asking follow-up questions to elicit further elaboration on initial responses comments. The questions were administered asked from the general to the specifics to kindle narratives that could be coded thematically. The following are the interview guideline questions:

1. Ask participant to provide information about him/herself.
2. The first time he or she used a digital device (where was it, what did you do with it, how did he/she get the device. Ask more question on digital access).
3. Elicit participant's response on his/her day-to-day usage of digital devices and the importance to him or her.
4. Could he/she recall one period he/she used digital tools for something he/she was greatly proud of?
5. The digital devices that are available accessible to participant at your school and what he does with them?
6. Participant will show me (on a device) his typical activities using digital devices.
7. Possibly a particular device participant could not live without. Let him/her mention, if any, and explain the reason.
8. As a person of color and from low-income family, what are his/her experiences.

9. Let participant something of interest that strikes the participant during this interview that he/she wishes to share with me?

Observations

Observations are another important and reliable method of data collection about human behavior (Bernard, 1998; Creswell, 2007; Denzin, 1971). Observations involve observing participants during ongoing activities, and make meaning of their visible reactions via body language, including movements, gestures, facial expressions, eye gaze, and relationships, among others (Bogdan & Biklen, 1992; Savage, 2000). Observations are recognized as an important method of data collection because the way people sit, stand, walk, and move their bodies are advantageous for enriching data and reporting the studied phenomena. Data, collected via observations, often serve as a check and balance against possible misrepresentation of information through other sources of data collection. Observations are also advantageous in obtaining detailed information diverse contexts around participants (i.e., their physical, social, cultural, and economic settings of participants). Participant observations entail utilization of detailed field notes to document ongoing observations for cross analysis of data or merger (Blomberg et al., 1993). There are two types of observations in research. These include non-participant or participant observations.

Non-participant observations – involves observing participants and occurrences within the study site without taking active part in ongoing activities by participants (Creswell, 2012; Jorgensen, 1989; Patton, 2002). The observation approach limits researchers' interaction with participants, as well the degree insights into participants' behavior and context of study. researchers maintain long distant contact from participants using one-way mirrors or cameras to monitor ongoing activities and behaviors from a remote location within the settings (Liu & Maitlis, 2010).

Participant observations – involve researchers' engagement in ongoing activities and recording of activities, behaviors and what they observe during studies observations (Bogdewic, 1992; de Laine, 2000; Hammersley & Atkinson, 2007). Depending on the nature and extent of their studies, researchers may be compelled to reside at research site in conducting participant observations, as common with ethnographic research (Ybema & Yanow, 2010). Maintaining active presence at research sites often deepens researchers level of involvement in ongoing actions by participants by participants and allow them to gain "insider" insights into participants' lives and practices that they may not ordinarily be disclose without the level such immersion (Spradley, 1980).

This study utilized a form of observations, described as relational observation, which was based on a thoughtful and synergetic relationship between researcher and participants. This allowed me to take up an unassuming, non-interfering position as a modest guest or observer within the three-dimensional narrative inquiry space (Abrahamsen, 2004; Piaget, 1972; Vygotsky, 1978). Stern (2004) described the type of observation as one that afforded a researcher and participant mutual reading and understanding of each other during study.

The use of the observation method allowed me to relate with participants actively and observed relevant activities they engaged in. However, I was careful to avoid acting in a manner that could cause significant changes to the observed culture, as based on researchers' suggestions (Creswell, 2007; Spradley, 1980). The model of observation allowed me to gain intuitive understanding of the research topic and participants, and it afforded me the facility to compare and intersect the data with those collected through other methods (Bernard, 2011; Schensul & LeCompte, 2013).

During the observation sessions, I observed students as they used the computers

in the library. I adopted an unassuming, non-interfering, modest guest, or observer stance within the three-dimensional narrative inquiry space (Abrahamsen, 2004; Piaget, 1972; Vygotsky, 1978). During the observation sessions, I took copious notes on participants' digital engagements and non-verbal communication. I also documented my thoughts, reflections, hunches, and reactions during the observations (Clandinin & Connelly, 2000; Creswell, 2012). Notes from the observations were subsequently written into memos to describe the critical incidents or notable situations during each session to deepen my understanding about the studied phenomena (Tripp, 1993). The observation sessions occurred on separate days from interviews, and each was an hour long.

Findings from Pilot Study

A pilot study is a miniature or simplified version of a full-scale study, which is conducted prior to a comprehensive study (van Teijlingen & Hundley, 2002). The study usually focuses on a segment of the main research topic and involves a smaller pool of participants. It is generally conducted for experimental purpose. The results may provide insights into the feasibility or fallibility of aspects of a forthcoming main research and provide useful tips that may inform its possible redesign toward curbing or minimalizing unanticipated problems (Thabane et al., 2010; van Teijlingen & Hundley, 2002; De Vaus, 1993). Pilot studies are also advantageous in testing research instruments and rehearsing research skills, such as interviewing, data analysis and interpretation, and research report (Baker, 1994). It is equally helpful in enhancing researchers' confidence level prior to the execution of comprehensive studies (Kvale, 1996; Leon et al., 2011; Sampson, 2004; Yin 2003).

Ahead of this study, I conducted a pilot study, during which I recruited four adolescent participants and asked them to share their experiences around gaming and learning. The findings showed that video games appreciably supported and shaped

participants' literacy practices and identities. Findings from the study inspired the current work and were used in fine-tuning to develop the research instruments and determine the methodology. Two participants in this study, Tamara and Aaron, were part of the pilot study. Data collected, during the pilot study around their experiences playing video games, were incorporated into this study.

Data Analysis

Data analysis in research involves a systematic assemblage of emerging themes from data collected from participants for interpretation and thick description of findings (Merriam, 2002). The process involves conscientious examination, sorting, re-organization, and reexamination of data from a variety of sources including, interviews, observations, questionnaires, photographs, and extracts from various types of documents (Henning, van Resburg, & Smit, 2004; Merriam, 1998). Basit (2003) described the process as "the most difficult and most crucial aspect of qualitative research" (p.143), owing to its "dynamic, intuitive and creative process of inductive reasoning, thinking and theorizing" (p.143). Because of its intricate nature, the data analysis process can take longer compared to the time taking to collect data (Lofland & Lofland, 1984). Malterud (2001) stressed the importance of data analysis in shaping the process of decrypting data and composing study reports.

In qualitative studies, data analysis subtly occurs, as researchers collect data and engage in personal reflexivity and self-scrutiny of their experiences in relationship with the field texts (Ashmore, 1989; Finlay, 2003; Gay et al., 2006; Shaw, 2010). Henning et al. (2004) and McCracken (1988) explained that qualitative research analysis helped researchers to determine the multiple variables in data, including beliefs, values, assumptions, and relationships that shaped researchers and participants' perception of events and issues within the context. Basit (2003) illuminated,

> Qualitative data analysis is not a discrete procedure carried out at the final stages of research. It is indeed, an all-encompassing activity that continues throughout the life of the project. Even if the researcher is not involved in a formal analysis of the data at the initial stages of research, s/he might be thinking how to make sense of them and what codes, categories or themes could be used to explain the phenomena. (p. 147)

For the study, analysis of data was an ongoing process, beginning from the moment I entered the research site, held my first meeting with prospective participants, and through participants' selection and successive stages. The approach helped me to make sense of the data I collected, concurrently organizing these data mentally, while making copious notes of my hunches for eventual data collections. My field notes, where I documented my personal reflections and ideas through the stages of data collection, were useful in the data analysis stage, along with the transcripts of interviews and others sources of data.

Data were thematically analyzed in the study to evolve inductive emergence of themes that reflected the ways participants' accessed and used digital tools and the implications on their literacy practices and identities. Thematic analysis (TA) is commonly used in analyzing qualitative research data to identify patterned themes or meanings across a dataset (Creswell, 2007; Fereday & Muir-Cochrane, 2006). Braun and Clarke (2006) defined it as, "A method for identifying, analyzing, and reporting patterns within data." (p. 79). I explored the method to identify themes around the literacy practices that participants engaged in, including reading, writing, and experiencing entertainment, communication, socialization, and creation through sharing and distributing media content online. The method probed for visible evidence around participants' self-representation and identity enactment in online spaces, as well as the

way their use of digital tool shaped their ways of thinking, insights, and opinions about issues of power, race, ethnicity, and social justice.

I sought in the data behaviors, events, activities, meanings, relationships, consequences, settings, times, emotions, and reactions, relating to participants' experiences on research topic. Audio recordings from interviews were played repetitively prior to beginning the data analysis and on several occasions after these were transcribed into typescripts to key into the voice, pauses, and other undertones by participants to enhance the process of analysis. Overall, the process of thematic analysis for the study involved coding data collected, as described in the following subsections.

Coding

Coding describes an analytical process in both quantitative and qualitative forms, in which data from interview transcripts, documents, questionnaires and other data collection sources are labeled and categorized into segments through close examination of data to provide a neat, single narrative about studied phenomena (Basit, 2003; Ryan & Bernard; 2003; Strauss & Corbin, 1998). According to Bailey (2007), coding entails a methodical process of identifying, describing, organizing and categorizing data in "explanatory or inferential codes, ones that identify an emergent theme, configuration, or explanation" (p. 69). Miles and Huberman (1994) described codes as tags or labels, which were ascribed to data and involved extracting words, sentences, phrases and paragraphs, and sentences in categorizing key concepts within data. Saldana (2009) explicated, noting that "A code in quantitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (p. 3). Coding allows qualitative researchers to generate themes and patterns from data from the particulars to the generals in conceptualizing a web of meanings and presenting comprehensive narratives on the subjects (McCracken

1988; Strauss & Corbin, 1990).

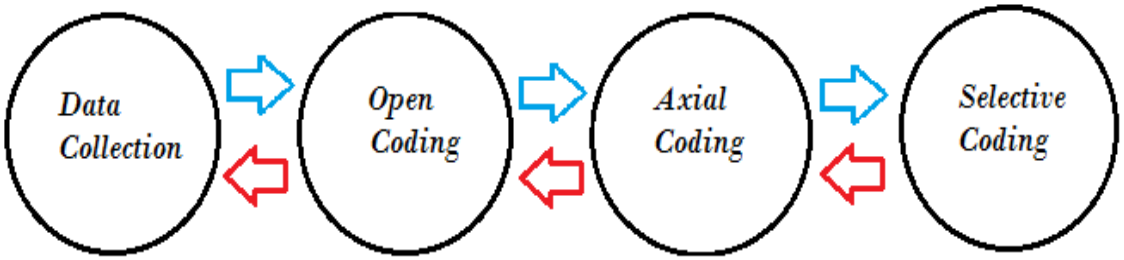

Figure 1. Data analysis process.

I used open coding, axial coding, and selective coding for this research. The open coding entailed repeated reading of the interview transcripts and deconstructing (color-coding) of data into simplest form possible, assessing these for commonalities, and then sorting them into categories (sub and main headers). Different color markers were used to highlight words, sentences, phrases, and paragraphs to appropriately assign themes and sub-themes under main headers and sub headers (Bogdan & Biklen, 1992; Ezzy, 2002; Fereday & Elimear; 2006; Miles & Huberman, 1994; Patton, 1980). In addition to participants' narratives, I drew on memos documenting my thoughts, insights, and hunches around the research subject to strengthen the process of data analysis (Bogdan & Biklen, 1992; Coffey & Atkinson, 1996; Mason, 1996; Patton, 2002; Saldana, 2013; Strauss, 1987). I consistently probed for the who, what, when, where, and why elements in the data to ensure inductive emergence of themes and findings that could respond to the research question as intended for the study (Byrne-Armstrong 2001; Trochim, 2006). The following excerpts 1 and 2 (screen shot), are examples of my open coding of interviews with Aaron and Tamara:

Open Coding

Open Coding of Interview with Aaron: Color-Coded

54: Researcher: I just was wondering how you get to do your homework and other activities you mentioned doing online if you don't have computer and Internet at home.
55: Aaron: Since, I have no computer to use at home, I come to library every day to use the library's computer, and do my homework and other things I care about on the Internet. Any time I don't arrive here on time, before the library closes, then, forget it, I can't do my own work. Normally I come here straight from school every day, but some days, I'm dead tired and I 'll just go home straight from school to catch some sleep. The problem is, any time I over sleep and it's gone pass the library hours, I'll can't do my homework. If I cared about doing the homework, sometimes, I'll go talk to my friends' in houses to see if I can use their computers. Many times my friends or their siblings are also using the computers and if they can't help, I'll have to go to school the next without my homework.

Axial Coding

Following the open coding of data, I moved to the axial coding phase, which involved searching through data for specific conditions that shaped both concepts and themes/categories during open coding. At this stage, I made conscious attempts to ascertain accuracy of the results from open coding by reviewing, revising, and reassigning the codes or data to applicable headers. The following is a screenshot of excerpts (I) and (11) from axial coding of interviews with Aaron and Tamara.

Digital access struggles

55. Since, I have no computer to use at home, I come to library every day to use the library's computer, and do my homework and other things I care about on the Internet (Aaron)
55. Sometimes, I'll go talk to my friends' in houses to see if I can use their computers (Aaron).
131. The only problem is that, I can only use it (phone) to make calls, because, I have no data on it (Tamara).
131. I usually walk to my school not too far from my house, some blocks away, and I'll and stay on the sidewalk and pick signals from the school Wi-F-i. (Tamara).
131. I usually go to Starbucks, McDonald's, Dunkin' Donuts and KFC near my house. On weekends and during holidays, I'm in my best friend's house, and I'll do the important stuff I need to do online in her place, because she has Internet (Tamara).

Consequences of Lacking Digital access

55: Anytime I don't arrive here on time, before the library closes, then, forget it, I can't do my own work (Aaron).

Data for both the open and axial coding stages were further refined and validated in the selective coding stage to ensure that these inductively evolved as findings. These data were woven into a thick description or single narrative in logical sequence, as reflected in Chapter 6 of the study.

Evidence of Quality

Establishing quality in qualitative research suggests evidence of reliability, accuracy, and rigor in research process and outcome (Denzin & Lincoln, 1994; Kvale, 1996; Lincoln, Lynham, & Guba, 2011). In achieving good quality research, it is obligatory that the process and outcome research are sustainably transparent and appropriately reflect and illuminate participants' stories; experiences, views, feelings, and emotions beyond the shadow of doubt (Bogdan & Taylor, 1975). Lincoln and Guba (1985) identified four key criteria that are considered by researchers to enhance the quality of their research. These included credibility, transferability, dependability, and confirmability.

The term credibility is interchangeably used in research to refer to internal validity of a research to reflect the acceptability of the result. The word transferability is likewise interchangeably used to refer to the external validity of a research, which portrays the degree to which the outcomes of a study can be applied or transferred to other contexts. Conversely, the word, dependability is associated with accuracy and consistency of research processes and findings. This means that the more consistent researchers are during each stage of the research processes, the more dependable the outcome of the study. In other words, the term implies that researchers remain

consistence in the execution of their studies, steadily offering explanations for changes that occur within the context and on how they may possibly affect the study or results. Confirmability, the last criteria, according to Lincoln and Guba (1985), described the extent to which the findings of a study could be confirmed or corroborated by other variables, including participants, existing literature, or findings in similar studies. In addition to the preceding criteria, Lincoln and Guba (1985) suggested the following five strategies for establishing the quality or trustworthiness of research, which I applied in the study.

Triangulation

Triangulation refers to the use of multiple and different data collection methods to strengthen the trustworthiness of a study (De Vos 1998; Onwuegbuzie & Leech, 2007; Patton 1990). Multiple data sources, including in-depth interviewing, participant observations, review of documents and artifacts, and a prior pilot study were utilized to triangulate data and strengthened the integrity of this study. In this case, aside from interviews, which were the principal data collection instrument, I utilized participant observation alongside participants' artifacts and findings from a prior study. These were used to triangulate data, representing multiple sources of data collection to produce in-depth understanding of the subject as a way of guaranteeing the validity of the study.

Member Checking

Member checking involves taking data back to participants for feedback to ascertain the credibility and accuracy of findings (Lincoln & Guba, 1985). Lincoln and Guba (1985) described member checking as the heart of credibility and that, by allowing participants' inputs during data analysis and interpretation, researchers could minimize bias, misinterpretation, and misrepresentation of participants' responses. Prior to this report, the rough draft was presented to participants for fact checking and evaluation of the interpretation made by the researcher for possible revisions or validation (Guba,

1981).

Peer Debriefing

Peer debriefing "is a process of exposing oneself to a disinterested peer in a manner paralleling an analytical sessions and for the purpose of exploring aspects of the inquiry that might otherwise remain only implicit within the inquirer's mind" (Lincoln & Guba, 1985, p. 308). The process requires that researchers present their studies to peers and experts in the field of study for commentaries or feedbacks across all areas to strengthen integrity of the findings (Bitsch, 2005; Guba, 1981; Krefting, 1991; Pitney & Parker, 2009). In this respect, I presented the preliminary drafts of this report to my colleagues and dissertation committee members for necessary feedback, as suggested by a researcher (Riessman, 1993).

Audit Trail

Audit trail describes clear description of stages in research, commencing from conception to researchers' entry into the field, participants' recruitment, and selection, data collection and reporting of findings. The process affords the scrutiny of the inquiry at different stages to authenticate both data and findings (Bowen, 2009). The use of audit trail in this study entailed description of variables, such as existing literature, data collection, analysis, evidence of trustworthiness, actions, decisions, thoughts, and education, incorporated in the report (Lincoln & Guba, 1985).

External Audits

External audits are an approach to strengthening the trustworthiness of a study by engaging a researcher who is not a stakeholder in the study to allow impartial vetting of data, including the analysis, interpretation, and representation in research reports. Miller (1997) asserted that external audits provided important feedback that enriched the quality

and credibility of studies. To facilitate integrity in the process and outcome of this study using external audits, I worked with a distinguished professor of literacy outside of my university, who provided me with significant feedback on all aspects of the study, including the research questions, methods of data collection, data interpretation, and composition of the research report.

Ethics

Clandinin and Connelly (2000) placed emphasis on the importance of ethical conduct in within the three-dimensional space of narrative inquiry. They drew particular attention to the ongoing nature of relationships between inquirers and participants within the space, which involved working in together in relational ethical ways in all aspects of the narrative inquiry process. "Relationship," they argued, "is key to what it is that narrative inquirers do" (Clandinin & Connelly, 2000, p. 189). They explained,

> Ethical need to be narrated over the entire narrative inquiry process. They are not dealt with once and for all, as might seem to happen, when ethical review forms are filled out and university approval is sought for our inquiries. Ethical matters shift and change as we move through an inquiry. They are never far from the heart of our inquiries no matter where we are in the inquiry process. (p. 170)

This study drew on those ethical principles, in addition to the three essential ethical principles, enunciated by the Department of Health, Education, and Welfare (1979), spelling out the condition for engaging human subjects in research.

Respect for Persons

Respect for persons refers to the obligation researchers have toward participants either in treating them as persons with autonomy or, in another instance, as persons with

diminished autonomy. The responsibility requires that researchers recognize participants as individuals who are capable or incapable of making personal choices and informed consent. For that reason, the researcher must stress the degree of explanation about their research not to subtly defraud, for instance, participants with mental illness.

Beneficence

Beneficence implies that participants in research are treated in an ethical manner, such that while researchers seek to maximize potential benefits for their studies, they make conscious attempts to minimize the risk of harm to participants. In other words, researchers must ensure that their studies will not expose participants to harm or danger, regardless of the benefits that are accessible through the research.

Justice

Justice requires that researchers strictly adhere to impartial and non-exploitative of distribution of benefits and burdens to participants during research. The idea of benefits, for instance, may raise question the kind of compensation to be given to participants for their time and/or information they share during research. Thus, denying participants the benefits for which they were promised or eligible are considered ethically wrong and violation of rights. (Burns & Grove, 2005; Whiting & Vickers, 2010). Other ethics revolve around issues of confidentiality, objectivity, anonymity, accountability, honesty, fairness in research (Love, 1999; Sales & Folkman, 2000; Shamoo & Resnik, 2015; Whiting & Vickers, 2010).

Summary

This chapter contained a description of the research methodology used by this study. It contained the research type and design, researcher's role, methods of data

collection, participants' recruitment process and selection, and research site. It also included the procedures for analyzing and interpreting data and ensuring quality and integrity of the study. These components formed the basis of research studies; hence, these were collectively referred to as the research design (Cozby, 2009; Creswell, 2007; Silverman, 2000).

Chapter 4

Participants' Narrative Accounts

Introduction

This study was conducted to gain insights into the lived-experiences of four adolescents from historically marginalized backgrounds regarding their use of digital technologies. The study was conducted at the Lakefield Teens Library, a non-profit organization, located in New York, offering a variety of accessible educational services, including digital resources. I identify each participant and location in this report with pseudonyms, consistent with standard ethical requirements, as articulated in the consent/assent and OIRB authorization documents to maintain the confidentiality of participants.

By assenting to participate in the study, I understood that the participants trusted me to document and relay their stories in a way that would neither embellish nor undermine their persons or values. In fulfilling that obligation, particularly to ensure that I had not privileged my voice over those of the participants, I met with each one of them, prior to this report, to review the initial draft of their narratives. I present the following narrative accounts as accurate representation of their lived experiences with the intention of honoring and validating their truths.

Aaron's Narrative Accounts

No Show, No Call

Aaron, 13 and an African American, is one of the nearly 120 teenagers who daily frequent the Lakefield Teens Library to use computers and free Internet. Following his failure to show up at two previously arranged interviews, I was surprised when days later

he approached me while I was engaged in an interview session with another participant at the library and determinedly reiterated his interest in the study. We both agreed to meet 2 days later, but, as on previous occasions, on the set date, he was nowhere in sight nearly an hour after our agreed meeting time. For the next hour, I kept a close eye on the library's entrance door anticipating his arrival. After nearly two hours of waiting, just as I began tossing my personal effects in my backpack and planning to leave, he sauntered through the library door and headed in my direction, quickening his pace the moment he noticed me.

Coping with ADHD

"I am very sorry I kept you waiting," Aaron said, promptly explaining coming late and previous failures to keep appointments, which he ascribed to his long-term struggles with Attention Deficit Hyperactivity Disorder (ADHD), a neurological condition that is characterized by hyperactivity, impulsiveness, and inattention. "It's not like that I like to disappoint. Please trust me. It's my condition." Aaron explained further, “I get easily distracted, and I also forget things easily." He disclosed his inability to complete tasks, follow simple instructions, and partake in activities that required taking turns in class. Those were in addition to his frequent out-of-seat behavior in class, persistent chatters during instruction, and conflicts with peers in and out of school.

Aaron recalled that after he was diagnosed with the disorder, a combination of medication and behavioral treatment was recommended by his doctor, but his mother opted out of ADHD medication because of the potential side effects, which have been widely documented to include sleep problems, nervousness, nightmares, stunted growth, moodiness, and irritability. Because of her mother's decision, Aaron had mainly received

behavioral treatment since his diagnosis. Although, he supported his mother's decision, Aaron admitted that the disorder was hurting his ability to function academically, socially and emotionally:

> My grades are just around average and sometimes below. Some days, I feel frustrated and unhappy, and I'll be mad at everyone in class and at home. The ADHD thing just makes me feel stupid and retarded, and I hate to have that feelings.

Due to his unruly behavior in class, Aaron received frequent detention: "My bad behavior sends me to detention all the time." However, getting bad grades for poor school performance and being “busted” into detention for incessant wrongdoings in school, Aaron understood it was not the way to pursue a successful life. Acknowledging the possible long time effect of his misconduct, he indicated his resolve to self-regulate his emotions and behaviors:

> Right now, I'm trying to turn a new leaf. I'm trying to stay focused on my studies and get better grades. I'm also working on my behavior in class. Sometimes, when I'm sent to the principal's office or the school counselor's office, I'll be there till school is nearly over and that makes me miss out on activities in class. These days I've been getting less detention, compared with when I was in elementary school. Now, I'm more in class instead of going to detention and I always try to be well-behaved once I'm in class. It's hard, but I have to be in control of my mood. Well, my life, because I really care to live good in life.

Aaron's behavioral therapist had suggested that he focus on positive thoughts and engage in his favorite hobbies and other fun activities, such as basketball and video

games to help him relax or de-stress. This should keep his anger and aggressive behavior under control. Recalling his therapists' advice, he noted the way his mother's countenance suddenly clouded into a frown the moment he mentioned video games: "She told the therapist not to even go there!" Aaron said, recalling his mother's comments. His mother, he said, never wanted him near video games. It was an outright order by her, he emphasized, "And I followed her order, because when she says this is what I want and this is what I don't want and you dare her, I'm sorry, you're in for big trouble."

Video Games Makes a Difference

Following his mother's strict position on video games, Aaron stopped playing video games: "It's been more than seven years now since third grade." However, at the start of the school year, he returned to playing the games: "Not deliberately, though." He cited an in-class video analysis assignment in English language arts (ELA) in which he had to select and play a game with mates in a small group setting to complete the assignment. "Well, I violated my mom's order, but, I had to. That was school and every kid in class was involved. Well, I couldn't be the odd one out. I played and enjoyed it. It was fun," he asserted. However, Aaron made sure he kept his lips sealed: "I never told my mom." He never did because he knew that the following morning his mother would be at school scolding the teacher. "If not attacking him," he added, ascribing his mother's concerns over gaming to the common notion that violent video games might promote aggressive behaviors among young players. Yet, describing his mother's antagonistic disposition toward gaming, he recalled an episode with her over video games, which he said made him quit. The incident occurred outside his school, the afternoon his mother arrived and met him with other mates playing the game, while waiting bus home: "She

was really mad seeing me playing video games and she almost screamed her heart out." He recollected the spontaneity of her wrath: “She held my ears and kept saying, 'Stay away from games…stay away, you have enough troubles to deal with...those toys would never pay your bills. Instead, they'll ruin your life, mister…stay away!'”

While Aaron appreciated his mother's concern and protection over him around videogames, he thought that she was unnecessarily paranoid about the capability of the games to hurt him or aggravate his condition. "I hate when she puts up that kind argument. I mean, video games are fun, intriguing, and helpful,” he observed, pointing to the way the game system increasingly helped him to learn how to maintain focus on tasks and goals. Since he began playing again:

> I think it's unfair to say video games can do any harm to me, because one thing I know is that, once I start playing, my mind is completely focused on the game. Till game over, I never get distracted. It's really fun, and it pretty much puts me in a better mood, making me feel relaxed and stress free, and eager to learn things.

My observation confirmed his claim. During a gaming session with his teammates playing *Call of Duty* (Infinity Ward, 2003), a popular first person shooter video game in the library, I noticed the rapt attention he gave to the scenarios on the monitor. His eyes remained riveted to the overhead screen, while he attended to every in-game challenge with lighting quick reflexes and snap thinking, which repeatedly helped him in hitting multiple targets and moving to higher levels of the game. Subsequently reflecting on the game, Aaron pointed to the fun and immersive nature of the game as inciting his dedicated attention: "It's all out fun and it puts me in that kind of situation that I have to give my all." Moreover, Aaron appreciated the way the game compels him to evolve and

apply a wide variety of everyday skills in tackling equally realistic challenges and situations:

> I have to carefully map out my attacks. Think ahead before making any move, take the right decisions and faster too, but being careful at the same time. Any wrong move can cause a whole lot of trouble. So, even though I have to move with speed, I'm careful at the same time, otherwise, I can lose the game as quickly as I start.

Like every ardent videogame player, Aaron indicated winning as his primary motive for playing a game, describing the feelings of great happiness and pleasure that lift up his spirit upon successive wins. Correspondingly, he recognized failing as an essential part of the experience gaming: "In a game, you win some and you lose some. You can't always win." Losing or failing during gameplay, he declared, allowed him to sharpen his present skills and gain new ones:

> When I play a game, I want to win, because it feels great. But, when I lose, I don't allow it to make me feel bad or mad. I just learn from my mistakes, start the game over, and move on, but then, I'm more careful from then on. But as I play on, I use the experience I already gained to and use different strategies to stay on the winning track.

Embracing failure, learning from it, and moving on to greater heights is an important lesson, Aaron believed he could use this skill to his advantage, facing similar circumstances in real life:

> In the game, I learned never to give up, no matter how hard the situation is. In game, it's never say I die, like my mom says about life. So, when I think of the

> challenges in video games, I feel they pretty much connect with situations in real life. Then, I'll feel, since I don't give up after losing a game, but go on playing and figuring different strategies from before, I have to use that same experience, when I'm faced with challenges in real life. That I gotta to cheer up and never ever give up hope.

Some games, including *Minecraft (*Persson Et al., 2011), *SimCity* (Wright, 1989), and *Civilization VI (Ed Beach*, 2016) Aaron acknowledged, afforded him learning at the intersections of multiple academic subjects, including science, algebra, language arts, history, and social studies. He pointed at Minecraft as allowing both the use and learning of basic mathematical concepts, such measurements, addition, subtractions, and multiplication:

> Minecraft is basically about building things and you have to measure up sizes or length of your materials, add up or subtract things here and there. If you're making really huge things, like roads, towers, skyscrapers, depending on what they are, you have to use ideas, like multiplying or dividing to make everything easy all the way.

Besides the value of the games for learning concepts in academic subject areas, Aaron recognized their capacity for teaching a wide range of valuable life skills, such as creativity, critical thinking, collaboration, multi-tasking, goal setting, and budgeting. Contrasting the traditional classroom approach to game-based learning, video games, Aaron indicated his preference for video games, which he contended, "makes learning pure fun and makes feel me relaxed, entertained… and learn at the same time." He found

games appealing for learning, given their enablement of visual, auditory, and tactile learning styles:

> I am a visual and hands-on learner. I'm very interested in learning and know that I learn better when we are engaged in hands-on and visual activities in class, and not just writing and coping notes all day in class, which I don't even care to read. Writing and copying notes get me bored anyway.

One of Aaron's favorite games is *World of Worldcraft* (WoW) (Chilton et al., 2004) a massively multiplayer online role-playing game (MMORPG), which involves millions of players across the globe playing together in real time. Relating his experience within the games' online community, he spoke of maintaining a strong social camaraderie with other gamers within the group, including a pilot in Britain, a high schooler in Paris, a waitress in Holland and a creative artist in India. His affiliation with gamers within the community, he observed, is helping to improve his social skills around following rules, taking turns, teamwork, self-expression, and social compliance:

> I'm learning a great deal about teamwork, playing and doing stuff with other gamers online. I get along with everyone pretty much, following the process for doing things, expressing my feelings and emotions the right way. I treat everyone with respect and they also show me respect.

Emotional connections with game characters are common among gamers, whereby gamers humanize games' characters and invest their goals and feelings: "I feel their success or failure is mine too and I feel very much like we are partners as in real life." Accordingly, his strong feelings and emotions toward the characters ignite his identification with certain of their attributes:

In video games, I can create my own world, choose to be what I want, have my dream job, drive my dream cars, and live my dream just the way I want it. As long as their actions and behaviors impress me, I'll connect with them. Then, I'll find myself feeling their pains and caring for their safety and taking sides with them all the way.

Figure 2. Typical characters in World of Warcraft.

Aaron connects more easily and identifies with characters who are believable and inspire positive traits: "I like characters that are good looking, brave, skillful and intelligent; characters that do adventurous things, friendly, and can get the tasks done with speed and accuracy." Noticeably, upon mentioning the words "get the tasks done," he winked and briefly stopped further remarks and then peered at me in an odd, secretive manner, but I said nothing. Yet, I understood, by his words and emotions, his longing for attributes that were exact opposite of what he presently lacked.

Envisioning a Career in Photography

Moving the conversation forward, Aaron hinted his career aspiration in medicine, specifically in pediatrics. He spoke of his love and passion to help children: "I love to be around children. I care so much for them and I pretty much wanted to help sick kids. Kids with serious diseases." Aside from the desire to help or care for sick children, He admired medicine as prestigious profession: "I thought, it'll be nice dressing up one day as a doctor and hear everyone calling me by the title, doctor." Nevertheless, Aaron backed out of his career ambition in medicine by and by, given his struggles with ADHD and resultant negative academic performance, "I had to let go of the idea. It'll be hard for me to be a doctor with ADHD and I'm not doing well in my studies." However, that is not all Aaron is ditching. He is also not seeking to further his education after high school. "After high school, I'm done with school," he said matter-of-factly, leaving me wondering why he has made such a decision. Asking why and how far he thought a high-school diploma would take him these days. With a long frown, he explained,

> It's not compulsory that I go to college, just because some people do. There are different things I can do in life and still succeed without spending my whole life in school and possibly end up poor. The fact is, I don't really like school that much, because there's so much boring stuff going on there. It's really the most boring place for me and I feel I'm not going to be great at the boring stuff going on there. Well, because of my situation, having ADHD, I think I'll better off following my heart. Going into something I love. Something that I truly love and can make me happy and succeed in life. That's photography. I want to be a photographer.

As Aaron mentioned the word photographer, a thin smile curled into the corners of his mouth. As he explained the motivation for his anticipated a career in photography, his face lit up with youthful and unbridled enthusiasm. "It's something I really want to do and I'm not going back on this one," he said self-confidently, explaining how since childhood, he had always been fascinated with photographs, which he said communicate messages, ideas, emotions, and moments to him:

> There is always something about pictures that grabs my attention. Apart from capturing moments that are present and far gone, pictures bring different messages to me - love, joy, kindness, tears, smiles, and all kinds of emotions. Then, thinking about the moments and messages that pictures create, I felt, truly, a picture is worth a thousand times more than a thousand words, and gradually I became interest going into the career.

Inspired by the aesthetics of and emotions evoked by pictures, Aaron enjoys browsing images online for pleasure, using different search engines, image websites and image sharing communities on the web. His favorite websites for image search are Google images, Flickr, Photobucket, Getty Images, and Webshot. He described the National Geographic website as his most favorite image site, because of its huge array of awesome aquatic, animal, nature, human, and geographic pictures, which he found to highly informative and inspiring. "Their pictures capture amazing moments and places around the world," he said, smiling and giving two thumbs up.

Offering a glimpse into his plan for photography, he spoke of opening his own photographic studio and traveling the world taking pictures of people and places, and handling briefs for celebrities, fashion models, and companies:

> I want to be one of the best photographers in the world with my own company. I'll start a photo studio and capture great moments for people, track down celebrities and capture their moments, lifestyles and stories through photos. I'll love to do things with the media too, like the National Geographic.

Aaron's admiration for the work of National Geographic photographers may, inspire him to start up a similar project:

> If make much money as a photographer, I'll love to start up something like the National Geographic; go around the world and capture amazing images for my website, just like they do, but, possibly something that'll focus on Black people.

As Aaron continued to share his visions around photography, I noticed that offering him my full attention was serving to empower and help him to reflect on his career plan broadly. Afterwards, he told me that, he had never intimately shared his life with anyone as he did with me. Neither had he shared his career plan with his mother, "She is not aware I play video games. She doesn't know about my dropping out of school and my plan for photography."

Digital Access

One of Aaron's worst subjects is math: "I just don't have a brain head for it." I get bored really fast learning or doing it and that makes me hate it." The teachers he has had since elementary school, he felt, equally, fueled his dislike for the subject. "They weren't really explaining things properly." Recently, after one of his cousins introduced him to Khan Academy videos on YouTube, the subject piqued his interest. He confessed that the video tutorials are helping him to learn and master concepts that he previously found difficult, "The videos are helping me to understand math better and gain a little interest in

the subject, and not just hate it totally like before." He found the videos relatively easy to learn with, because of the fun and systematic in which manner topics were presented:

> They make the topics very easy and simple to learn. Far more than any teacher I've heard. So, whenever I don't understand any topic in math or I have to practice for test, it is the first place that comes to my mind.

Unfortunately, as much as Aaron would love to spend ample time to practice his math skills with the video lessons, he has limited access to digital technology. Outside of school, he primarily relies on Lakefield Teens library to use computer and access Internet, "It's hard for me to use the computer or go on the Internet, except I come to the library." Last year when his mother brought home a desktop computer from work, after it was disposed of, Aaron was extremely delighted he would have regular access to a computer at home. Regrettably, the computer never worked, because the operating system had stopped working unknown to his mother. "We took it to the repair shop and found it was just an empty case. I guess that was why they threw it out at her job in the first place." Even if the computer had worked, Aaron was sure his mother would not have been able to raise the monthly fee to connect it to Internet: “From ads on TV, it'll cost about $70.00 monthly to get connected. That's going to be so much. She has just one job, and she's the only one supporting the family, because my dad is in jail. It's ridiculous!”

On average, Aaron spends between 2 and 3 hours a day at the Lakefield Teens Library, using the computer, going on the Internet to complete homework assignments, and engaging in other digital activities. Most days, he comes to the library straight from school. The day he fails to turn up or arrive early before the library closes, he ends up unable to complete his homework. On two separate days, the week prior to our meeting,

Aron had missed two key homework assignments that required his use of the Internet to conduct research. One of two the homework assignments were on the presidential election in the United States, specifically around Electoral College or votes: "I was tired on both days and I went straight home after school to sleep. When I woke up, the library was already closed and I couldn't do any of the assignments." Each time he misses the library hours like that, his homework piles up on him: "My teacher would expect me to still do the previous homework I missed and the new ones." He confessed that he never bothered to do them, because they become too many and that the library only open four hours each day during the week and shut all through the weekend: "So, there is no way, I can complete all the homework."

Citing his personal effort at getting his homework done apart from using the library resources, he intimated seeking help from one or two of his neighborhood friends who have computers at home. The possibility of getting help from his friends, however, depends on the availability of their computers: "Many times my friends or their siblings are also using the computers and if they can't help, I'll have to go school the next without my homework." The days he does get help, his next challenge is printing out the finished home assignment he already typed in the computer. His friend, he said, would not let him use their printers because of the cost of printer ink: "I can only work on their computers. I can't print on their printers, because the ink is expensive." Unable to print the homework, he emails it to himself, hoping to print it the following morning in school on his classroom printer. However, often his teacher launches into a litany of complaints about using her money to buy supplies for the class, his poor work habits, and unruliness in

class. After making the complaint, the teacher would eventually let him use the printer: "It's so much headache every time for me getting my homework done."

On Social Media

While navigating Aaron's Facebook page, I could sense his passion for photography through the collection of pictures he culled from different web sources, several from the National Geographic website. They were mostly photos of animals, sea creature wildlife, places, and people from around the world. Noticeably, not many personal pictures are on the site because he has no phone camera to regularly snap and upload his pictures. However, he has been saving money toward the purchase of a mobile phone: "I've been saving money in my piggybank for months now. I've saved up $70.00 and I just need to save $30.00 more and I'll get a used iPhone 4 on eBay and Amazon." He is hoping that his mother will help him pay the phone bill. As for the Internet, he said, "When I reach that bridge, I'll cross it."

On the "about" section of his Facebook page, Aaron added “photographer” as his occupation. Even though he admitted to adding the information simply for the fun of it, it was evident that, by so doing, he was creating an online identify for himself. The page also shows that he belongs to two photography-related groups, both of which, he said, offer a wealth of photography information and tips, exhibit work by novice, aspiring and professional photographers, and promote interactions and conversations among members. Aaron mentioned establishing a close relationship with a teenager in one of the groups, whose father, he said, owns a thriving photo business, and that he may be reaching out to through the son for possible training support:

> The guy and I chat regularly and discuss photography. He has just one more year to finish high school and he'll be joining his father in the family business. Like me, he's not looking to go college. He's been helping his dad with the business and says photography is a good business. He is planning to introduce me to his dad to see if I could possibly train with him when I graduate from high school.

Aaron saw Facebook as an important way to stay in touch with friends that he might never be in contact touch with regularly: "I'm on Facebook anytime I'm here in the library, chatting back and forth with my friends." The site, he said, allows him to follow events in the lives of his relatives and friends: "There are some of them I don't get to see often, but I connect with them on Facebook, send each other messages, chat, and see what everyone is up to through what we share." He has also made a couple of new friends through the site: "Some of my friends on Facebook were friends-of-friends, and I also made friends with some who were strangers." Aaron regularly uses Facebook to send his friends happy birthday messages. His other activities on the site include playing video games, watching, and sharing videos, and memes, which he found, not only funny, but also inspiring. "There is so much to learn from them," he said, while showing me two of his favorite memes around themes on education and family life on his Facebook page.

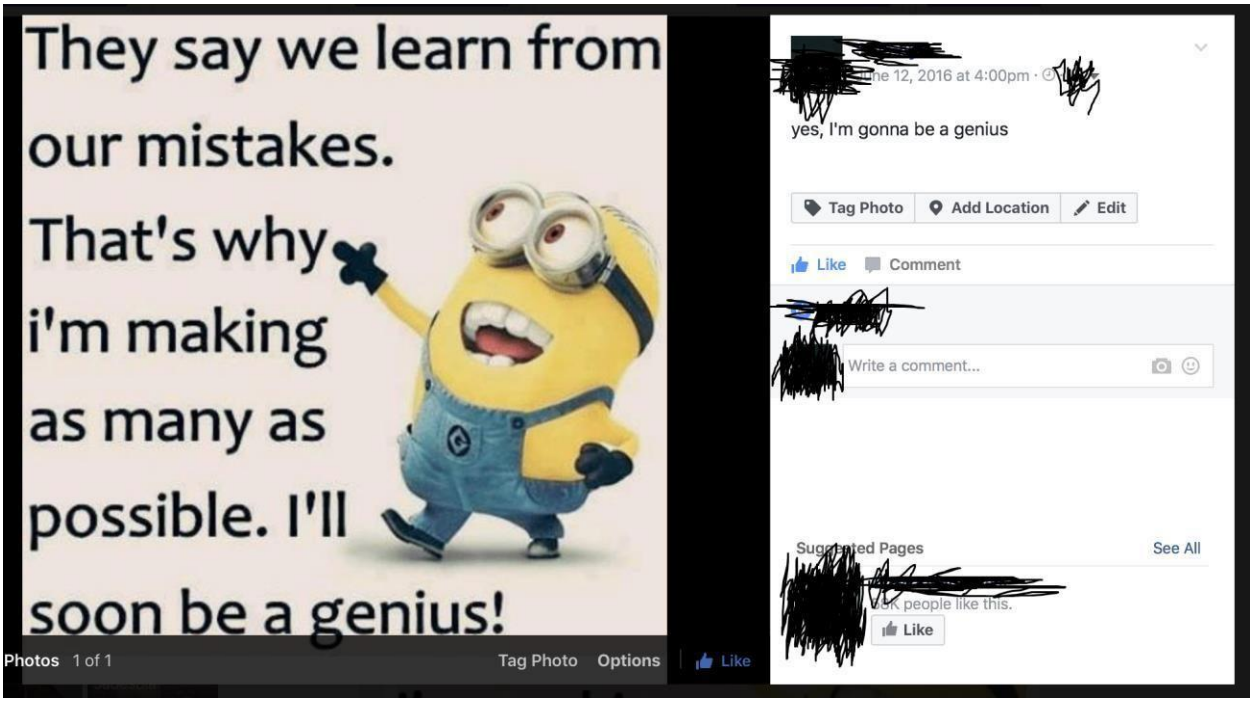

Figure 3. One of Aaron's favorite memes on his Facebook page. "Yes, I'm gonna be a genius," he wrote.

Aaron also uses Facebook to follow his favorite celebrities, mostly Black athletes, musicians, movie stars and others in different fields, including Shaq (basketball player), Sean P Diddy Combs (rapper), and Jaden Smith (American actor and rapper), Beyoncé Knowles (pop vocalist). He seems to draw inspiration from them:

> I check out their pages to catch up with what they are up to, where they travel, who they are with, and what people are saying about them. And, I try to learn things about their career. I always feel, if they are Black people and can achieve that much success in their careers, nothing can stop me from achieving my dreams.

From discussing his favorite Black celebrities, the dialogue moved to issues around racism and discrimination against African Americans, which he found extremely appalling.

Black Pride

Aaron felt unhappy with the way African Americans were treated in the United States, pointing to racial inequality in education, housing, and job opportunities. Born and raised in public housing projects, he described his life and experiences growing up and attending school around the housing projects as "totality ghettoish." Both his parents, he noted, were born and grew up in the projects and similarly attended schools within the neighborhood like him: "Nothing has really changed around us and in our lives. We actually live in ghettos. And it's because we are Blacks." He is particularly irked at police officers, as he said, for routinely and unfairly targeting African Americans, arresting and ensuring they get prison sentences that are far longer than would be given to White folks for the same crime. He expressed his lack of confidence in the police, referring to his father who had been arrested and detained since his eighth birthday on a first offense marijuana charge for a tiny amount of weed:

> I never ever feel safe around police officers, because, whenever a Black person was killed by them, I usually felt that could have been me. Then, I get worried often that I could be the next person to be killed by them, because, they hate Blacks; the racist among them. Even when I am a good citizen and I don't break the law, to them, the color of my skin means that I am a potential criminal. So, I believe they'll hurt me rather than protect me. Since they don’t want us around, they feel the best thing is to harass and throw us in jail like they did to my dad.

He saw that the media offers many examples that counter the stereotypes of Blacks. Aaron pointed out that his favorite celebrities attained success through personal talents, hard work, and good luck. He cited a documentary entitled *A History of Black*

Achievement in America and several others that he had watched mostly on YouTube, which portrayed major inventions by African Americans and other contributions they made to America's progress:

> It's because some folks don't like Black people that they say all sorts of things, just to put us down. There lots of videos to watch on YouTube about what African Americans have contributed to this country. For me, there can never be anything as being Black, because Black is beauty and I'm Black and proud.

As Aaron made a conscious emphasis on the last sentence to convey his sense of racial pride, a smile lit his face. On that note, I drew the conversation to a close, certain that, despite his ADHD condition, Aaron had both the tenacity and optimism to overcome adversity and succeed in his chosen field, particularly drawing on the promise of technologies, which he recognized as helpful. My meeting with him ended with a selfie of both of us, taken with my cellphone at his request. "I'll show this off on Facebook," he said of the picture, immediately emailing himself a copy.

Tamara's Narrative Accounts

Proudly Mixed Race

I had arrived the Lakefield Teens Library about 5 minutes late for my meeting with Tamara, a 15-year-old aspiring computer animator. My eyes roved around the library floor, as I made my way through the entrance door looking for her among the crowd of teen library users. The library floor was filled with several groups of teenagers, some of them reading, while others worked on the computers or chitchatted in a low tone while attending to their homework assignments. Far off, I noticed a group of teenagers cheerily playing video games, laughing and conversing. I spotted Tamara in the midst of

the gamers and waved my hand to signal my presence. She stood up as soon as she sighted me and sauntered toward me, her wide smile lighting up her whole face as she did. "Good afternoon," she said, still smiling, as she reached me. I offered my apology for arriving slightly late and extended my hand to initiate a handshake. She wrapped both her hands around mine and beckoned a boy about her age sitting at a computer several feet away. She introduced him as her boyfriend, "Meet Jarvis." I expressed my delight to meet him and shook hands with Jarvis. Shortly, I retreated with Tamara to our meeting point, while Jarvis returned to his seat.

My first meeting with Tamara was during the pilot study, prior to the present work, which examined participants' experiences around games and learning. As we both took our seats for the current study and settled down to begin our conversation, I noticed she had not changed a bit since that first meeting. She was still her jovial and bubbly self, cackling all the way through the conversation. She wore a T-shirt with the inscription *I'm Very Active [On the Internet]* printed on it. I must have had a quizzical look on my face, when she said, "I wore it on purpose. Aren't we discussing Internet and technology again?" "Sure, we are…" I responded, delightfully offering her a wide smile to convey my gratitude for the pronounced enthusiasm and excitement she brought to the meeting. After going through the practical details of the study with her, I turned on my voice recorder to begin the interview.

Tamara is biracial and owes her striking looks to her mix of African American and Puerto Rican ancestries. "My dad is African American and my mom is Puerto Rican," she said. She reported that years back, if one asked about her ethnic background, then one was certain to see her immediately back off from the conversation. Then, her

dual heritage was a constant talking point among her friends in school, whose off-color jokes and demeaning attitude caused her a great deal of internal conflict. When she tried to identify with either of her racial ancestries, she felt often ostracized by both her African American and Latino classmates who forthrightly told her she was of them. "They told me I wasn't full-blooded African American and I'm full-blooded Puerto Rican," she said. Torn between both boundaries of her mixed-race heritage, Tamara ceaselessly questioned herself about who she was:

> I was confused and pained. I didn't understand why I was seen as different from others, because I'm biracial. I didn't even understand what it is to be biracial.
>
> I thought I was just like everybody. And the attitude I got from my friends is like, hey gal, you don't belong anywhere, and that upset me a lot of times. Then, there was this question that kept popping up on my mind and poking me about who I am and I had no answer for it.

Unable to unpack the socially constructed reality around her racial identity, Tamara remained continually troubled. At some point, she stumbled upon a book about an uplifting true-life story of a 16-year-old high schooler, who had similar experiences, but overcame her feelings of rejection and dejection through self-approbation. The motivation she drew from the book kindled her sense of self and inner security and pride around her racial identity:

> I saw myself in the author's story and I wanted so much to be who I am, and never shy away from being who I am. Her story encouraged and lifted up my spirit and made me feel the pride of belonging to a racial group which I felt made me a unique person.

Still looking for answers to some other lingering questions. She sought other support.

Wired to Connect and Learn

She joined typology central.com, a Web-based forum where users can obtain and share information, and ask questions, and learn about different topics or subjects of personal interest. Through supportive interactions with other users in the forum, Tamara was able to elicit insightful and informative contributions around several of her racial concerns. By inciting outside voices and broader perspectives on her concerns, she was able to broaden her own perspective and gain personal positions that enabled her to find her voice and pride as a self-assured mixed race individual. "I became happy and confident in who I am and I didn't care anymore if the entire world hated me. I see myself as a person, which is the only race I know that is real," she asserted, with a bright smile and a spark of pride in her eyes. Her interactions with other users within the forum, she recognized, not only offered her informative and social support, but also boosted her mental and emotional wellbeing. Moreover, the anonymity afforded by the forum, in terms of posting threads in a way that her real life identity was shielded, she thought, made it a safe and welcoming space. "If there is any topic I want to know more about, I'll log in and start a thread on the forum, because no one cares about your bio, just your questions," she said. Moreover, she thought the text-based nature of discourse and communication within the forum, shaped her written communication skills:

> Any thread I want to post on the forum, I have to proofread and edit my drafts. Fix all the errors first before posting. Even though, my writings are great, and my teacher praises me for that, I make a bunch of silly mistakes here and there when I don't pay attention. So, when I post on the forum, I make sure I dot the i's and

> cross the t's. I make sure my spellings are correct and my sentences are clear and simple, because mistakes can one look dumb.

In my previous meeting with Tamara during the pilot study prior to this project, she told me she spent between 2 to 3 hours online daily. Barely a year ago, she had no personal phone and neither a computer nor Internet at home. Therefore, she had to frequent Lakefield Teens Library to use computer and access the Internet. Last December, she got a phone as Christmas gift from her boyfriend, Jarvis, who was replacing his fairly used Android phone with a new iPhone 5. Today, her hours online have dramatically increased to nearly 6 hours daily: "Since I got the phone, I've been spending more time on the Internet, like five to 6 hours every day."

While online, Tamara spends the majority of her time hanging out with friends on social media, including Facebook, Instagram, and Snapchat, mostly sharing posts, watching video posts, chatting via text and video calls, and discussing homework and common topics with her school-based friends. Hanging out with her friends on social media, she said, strengthens her relationship with them, and relieves her of boredom: "It's like we are meeting face-to-face, we chat, gossip, tell jokes to each other, and laugh. I never get tired." While on the site, she fervently supports posts by her friends via "likes," emoticons, positive comments, and reposts, but some content she described as "rotten, smelly garbage":

> Like those fighting videos that show ghetto fights or people going on social media cursing out others; their families and friends. I'm never feel comfortable with such posts. Rotten, smelly garbage. That’s what they are. I mean, if your post is just

> about fighting or cursing, how does that help me? I'll normally "like" any post I can find interesting or I can learn from.

With the advent of sophisticated cell phone technology, the selfie culture has become a major aspect of teens' daily lives. Tamara is not left out. On both her Facebook and Instagram pages, I noticed she had many selfies: "I add a new selfie every day or two days." She hinted, "It's fun." She said this in response to my question on why she adds so many selfies. Apart from the fun, she felt, sharing selfies promotes bonding between her and her friends: "It really makes friendships a lot more exciting and tight." The drive to make a statement equally underlies her selfies:

> When I get new dresses, I take a selfie. Or, when I tried a new lipstick or just had new hairstyle, I take a selfie. Sometimes, I take selfies when I'm in some crazy outfits…I mean just for fun. But normally, I try to look good in selfies, pose confidently and make sure my makeup is neat. Put on my best smile. Well, it depends on the mood I want to share. Sometimes, I want to look cute and sexy, or funny, serious, and smart. But, definitely, I take a selfie when I feel I look good.

However, she poses, Tamara admitted, she constantly looks forward to getting a lot of “likes” and positive comments, and that when she gets them, her mood improves significantly: “I like to count all the 'likes' and read all the comments. A lot of times people say many nice things about me and that gives me so much confidence, and makes me happy." However, she does not always get all the flattering comments she expects. When the comments are on the contrary, she admitted, they leave her feelings dampened and her instinct is to delete them:

> Well, I don’t get comments like that, maybe once or twice before, I think, and they made me feel really bad. But, I know there are some bad people there on social media, who are haters and they try to bully people, and put them down. Depending on the comments, like, if you write something to hurt my feelings, I'll have to throw your comments in the trash, because that's where they belong,

Clearly, whichever way Tamara reacts to comments she gets on her selfies or any other posts on social media, her posts provide her with an important medium of self-identification, self-expression, and means of seeking approval from peers:

When she is not on social media, Tamara may be seen engaged in learning activities online: "I do lots of school work on computer and the Internet. Like homework, reading online, and I practice subjects with them." She noted, "And then, I watch video tutorials, take interactive quizzes online, and play math and language arts games." To improve her understanding of mathematics, which she described as her weakest subject, she practiced with the free animated apps she downloaded on her phone:

> Math has never been my thing. There are topics I just don't get instantly. But then, there are tons of free math videos online that I use to practice topics that I have learned in the classroom or trying to learn. I really like the video tutorials and apps, because of the step-by-step teaching. The good thing about that, is that, I can choose different ways to learn and practice the topics I'm interested in. If I like, I could play video games, take quizzes, and watch videos.

In addition to studying, Tamara spends her time online communicating with friends; sending emails, making WhatsApp video calls, texting, and accessing entertainment; such as downloading and listening to music, watching movies, and playing

video games. Her other online habit is checking weather forecasts. Acknowledging the wealth of information on diverse topics on the Internet. She indicated her strong commitment to lifelong learning and her use of YouTube videos for self-directed learning:

> I've always enjoyed learning new things every day when I'm online. I use the Internet to search information practically on everything I'm interested in. I also use YouTube video to learn how to cook, make fruit smoothies, makeup techniques, and create fun hairstyle.

Knowing that Tamara has no Internet connection on her phone and neither at home, I was curious to know how she is able to undertake all the online activities that she mentioned daily, particularly, considering that Lakefield library is opened only for four hours each day. In response to my inquiry, she related how she walks many blocks from home to her school on both weekdays and weekends, and she stands by the pavement outside the buildings to connect her phone to Wi-Fi hot spots. Alternatively, she goes to popular fast-food restaurants that provide their customers free Wi-Fi near her house:

> I usually go to Starbucks, McDonald's, Dunkin' Donuts and KFC near my house. On weekends and during holidays, I'm in my best friend's house, and I'll do the important stuff I need to do online in her place, because she has Internet.

Navigating the World of Warcraft (WoW)

During my prior pilot study, Tamara shared her experiences playing video games both offline and online. She reported playing video games primarily for entertainment. Beyond the entertainment value, she recognized the game system as a powerful tool for learning. "There is quite a lot to learn in games," she said. During the conversation, she

spoke extensively about WoW (Chilton et al., 2004), one of the most popular massively multiplayer online role-playing games (MMORPGs), which involves seeking quests, fighting and killing monsters, and practicing a range of professions or trades, including tailoring, blacksmithing, alchemy and herbalism.

Elaborating on the game, which moves from level I to level 80, she confessed her addiction to it because of the 'never-ending' fun, and its capacity to improve her mood and relaxation, and up her happiness level. "Once I feel any stressed, I just jump on it, and I'm relaxed, and happy. It's my happy hour," she said. Moreover, she is attracted to the game because of the challenges it presents to tackle simulations of real-world problems:

> Every time I play the game, I feel challenged, because I have to think through real life challenges, brainstorm, plan, make the best moves, and in a split-second decision. It's really a lot of hard work tackling challenges in the game, working together on goals with others and but, it's also fun. That's why I like it.

My initiation to the game was during the pilot study, while I observed Tamara. To begin the game, she first had to go through the process of character creation or customization, selecting one of the two warring factions - the Alliance and the Horde - to support. As she explained, the Alliance consisted of the noble humans, the enigmatic night elves, the adventurous dwarves, the honorable draenei and the ingenious gnomes, while the Horde is constituted of the brutal orcs, the driven blood elves, the spiritual tauren, the shadowy undead, the quick-witted trolls. Each of the characters, she emphasized, possesses distinct powers, personalities, and duties that are differently skilled in their use of weapons. "If a character does not have the required skill level to

fight or use a weapon, which will affect his performance. Therefore, I try to create and equip the best characters that can help me win the quests," she explained.

Figure 4. Trades/professions in World of Warcraft.

Following her selection of characters and customization, her next move was choosing the right profession or trade for the characters, primarily to make money in the game and effectively executes the quests. Her choice of a profession or trade in the game, Tamara noted, would often depend on whether she is thinking of making a quick sale of items through the Auction House or planning to construct items, such as weapons, gems, gear, and potions, to earn a lot more gold by selling them to other players. She opted for a mixture of both as part of her strategic planning to earn gold money through two sources.

Done with the character process, Tamara kicked off the game. She hurled the characters into dangerous terrains where they fought their way through enemies' fronts, attacking and killing monsters and repelling attacks, while repossessing valuable items from enemy corpses. For the next half hour, I watched as she deployed skillful thinking and planning in the game and daringly forayed into enemy territories, killing them

entirely, retreating, and regrouping her team when the quests became too dangerous and her team began to suffering casualties. She shrieked and stamped her feet in anger when she missed targets, and celebrated her wins with self-praise or sometimes with the sign of the thumb. Through the game, she simultaneously engaged in text communication with other gamers online, exchanging ideas with them, and taking and offering directives.

Describing the game as a collaborative game, which is characterized by alliances among gamers within different guilds, Tamara identified a variety of real life skills that can be learned and practice in the game, including communication, leadership, and teamwork. She also recognized the capacity of the game to trigger creative sparks. The game, she explained, inspires her to tackle challenges in creative ways. As an aspiring computer animator, she found the character creation process at the start of the game advantageous in exploring and expressing her creative impulses, "It gets me started on learning how to create characters, think outside the box, and improve my creativity. That gives me more motivation to get into animation."

Furthermore, Tamara recognized the game as a site of self-representation and identity formation. She spoke of investing idealized aspects of herself in character creation process to evolve extraordinary characters, which she, in turn, embodies and gain their potencies try out certain of her fantasies, goals, and desires from real life:

> It's a game world and I can be become anyone or anything I want. The character I play in the world, makes me feel much more powerful than in real life. I could choose to be a superhero to save the world or travel to mystical a cave and receive potion to do miraculous or mysterious stuff that are impossible in real life. It’s a world of many possibilities.

Shifting the conversation to the social dimension of WoW, Tamara accentuated the sense of camaraderie and shared intimacy the game inspires among gamers. WoW, she said, elicits a sense of solidarity that transcends the game itself and promotes fun, friendships, celebration, participation, enthusiasm, and a sense of belonging. "To me, WoW is not just a game, but a family affair, because, everyone is a part of everyone. We see ourselves as friends and work together," she asserted. Suggesting that friends in WoW could transfer to real world context, she cited her relationship with Jarvis as a legacy of that social experience. She and Jarvis, she explained, met on WoW over a year ago and were chiefly casual friends online for many months. Her online friendship with Jarvis, however, took a different course after they discovered that they had something else in common beyond their love for WoW:

> We found out that we both live here in Lakefield. We thought that was really amazing and we got closer online, exchanging emails and text messages, and sometimes making video calls. Then we arranged to meet and we connected with each other from meeting the first time. We met several more time and we both fell in love with each other and our relationship became more intimate. We are both in love.

Remembering the body chemistry, I noticed between her and Jarvis, while she introduced him to me shortly before my interview with her, I could not agree more with her that, they were both intensely in love. Not to wanting to pry deeply into her personal affairs, I changed the topic.

Schooling and Boredom

I asked Tamara about her learning experiences in school, and she began first by expressing a love for learning. "I love learning," she said. However, her love of learning does not translate to her love of school. She told me that she hates school for one reason. Boredom. "School is very boring," she said. "Very, very boring…I get bored in school all the time, and I'll feel like taking a nap or going back home." Her boredom in school, she explained, stems from sitting through many hours of lackluster lectures and engaging in repetitive activities and decontextualized tasks that easily tune her out. "The moment I'm bored, my mind drifts in class," she noted. She believed integrating digital technology in the classroom offers the chance to combat needless boredom in school. "Technology makes learning fun" she stated.

Despite her enthusiasm for technology, Tamara reported that technology is inadequate in her school. "Technology is a scarce commodity in my school," she stated. There is only one central desktop computer for all students in her classroom, and only a handful of computers in her school computer lab. As a result, when she and her classmates go to the lab to complete assignments, they have to take turns to use computers. "We have to take turns and then be timed. Many times, we all have to rush our work before our time is over…very ridiculous!"

Acknowledging the huge disparities, in terms of digital access and use of digital technology in schools in affluent neighborhoods where students have access, she felt, schools like hers in poor neighborhood merit equal access to digital tools and resources, "our schools too deserve to have adequate technology." Tamara believed technology access could make a huge difference in her learning experiences. "Having technology

will make us have something to look forward to in school every day and we can do better in our studies, because, with technology learning can be all fun."

Envisioning a Better Life

Coming from a poor economic background, Tamara does her shopping for clothes, shoes and other items, mostly at thrift stores, which are far cheaper than retail stores. Her father has been out of work for several years, following a work-related injury, and has had to depend solely on social security disability benefits. To complement her father's disability benefits, her mother works two jobs as a home health aide, but the combined family earnings are inadequate to meet the family needs. As a result, paying rent and utilities has also been difficult for her family, in addition to buying groceries "We always have outstanding bills to pay and for food, we regularly go to pantries that give away free groceries," she said. "It's really horrible to be poor, because when you are poor, you can't have what your mates have. Not even a common phone."

In order to avoid the significant hardships, she is currently going through with her parents and younger brother, Tamara plans to go to college. "Going to college would mean the world to me and my family," she said, intimating her long term yearning to study computer animation. Her desire for a career in animation is strengthened by her innate flair for drawing, as well as gaming: “I've been drawing since I was five and I've never stopped for once, and when I started playing games, I knew I would love to do something exactly like that in future, because I love animated characters.”

Figure 5. Video games characters drawn by Tamara.

Tamara's desire is to work in the gaming industry after graduating from college. "I'll like to work for gaming companies as an animator or games designer," she stated. She anticipated earning a considerably decent income in the industry. She has researched the average salary ranges for jobs in the entry-level category online and felt satisfied with the result. "The pay is good," she stated. She was certain of a better future and supporting her parents and brother to improve her family's living conditions: "I'll be there for everyone. My parents, my brother, and I'll be able to live comfortably as I have always thought to live when my dream comes true."

As I concluded my meeting with Tamara, she expressed her gratitude for the time we spent together, which she acknowledged helped her to reflect upon many aspects of her life and broaden her understanding on the promises of digital technology in achieving a better quality of life. "I've never done an interview with anyone before. This is actually my first and it made me think about so many things I never thought of before and how

technology is important in life," she said. In response, I expressed my indebtedness to her for participating in the study, and for the dedicated T-shirt she wore for the interview. As we both walked away from the spot, Tamara's statement regarding her self-reflection on the study reverberated in my mind, and became a subject for my own personal reflection concerning the empowering nature of self-reflection in promoting student voice and self-efficacy in and out of the classroom.

Maria's Narrative Accounts

Abandonment, Betrayal, and Hope

I met Maria, 14, for the first time during my initial briefing with prospective participants for the study. She sat quietly, listening attentively to my every word, while the other kids mostly engaged in side talks and playful banters. During the question and answer session, she alone asked a question to know if she could opt out of the study at any time if she was no longer interested. As I offered her my response in the affirmative, I could sense her shyness. The following day she met me at the library and handed me her signed copies of the letters of consent and assent. She was the first person among other prospective participants to return the letters. At her request, we scheduled our meeting for the following day.

As arranged, I headed to the library the following day, ambling along placidly. Checking my wristwatch, I realized I had much time on my hands, and I decided to pick up a snack at a nearby eatery, barely three blocks away from the library. As I walked into the eatery, I noticed Maria, where she sat in a corner. She was wearing the same White T-shirt over the faded jeans she wore the previous day. A gentle smile played upon her lips as our eyes met across the crowded room. After placing my order, I walked over to her

table. She was munching a piece of cheesecake. She smiled and offered a polite greeting as I took my seat by her. While I waited for my order and chatted with her, I did most of the talking, while her eyes gazed at me through a veil of shyness and a faint smile she could hardly hide.

After nearly an hour, we both departed the eatery and strolled past a row of retail stores toward the library, chatting about general matters, the cold air that was hurting our faces, latest snow forecasts and the distance from Maria's house to library. Once we reached the library and took our seats, I reviewed the ethic papers and the purpose of the research, and other related details with her and commenced the interview. I could sense her shyness still as she began telling her stories, but once the conversation progressed, her shyness diminished, and she freely chatted, smiling now and then. Her smiles radiated a greater sense of confidence.

Maria is a natural-born citizen of the United States, but her parents are natives of Guatemala. They moved to the United States as undocumented immigrants and as an unmarried couple, following 2 years of courtship back home. Shortly after her parents arrived in the United States, her mother became pregnant and gave birth to her. About six months after her birth, her father left home, slightly over 13 years ago and has never been back home or spoken to Maria or her mother since then. The last time anyone heard of him was nine years ago. At the time, it was rumored he was living in Florida and married to another woman who had helped him to get temporary work visa.

While Maria is uncertain of the cause of her father's desertion, she reechoed her mother's description of him as "never once responsible for anything, even while he and my mother lived in Guatemala." Maria felt her father's alleged irresponsibility made him

leave home: "My mom said that he was never a caring person. He never contributed nothing to the family and always shifted the responsibility on my mom." Maria hinted of her father's indifference to his aged parents, whom he purportedly rarely visited when they were both sick and needed his support, while he was still in Guatemala:

> I think he used my mom to come the U.S. It was her idea to travel down here, not his. She told me she saved money for the trip for many years and that he contributed nothing, but just kept promising to take care of her when they reached the U.S. But he never did eventually. He deceived her and lied to her all the time. Then he disappeared after coming here.

As Maria recounted the story about her family, her eyes remained cast down with a fluttering quiver upon her lip, then, with a tinge of anger and deep-rooted bitterness in her voice, she said, "It's just too bad what he did to her. I hate him and I don't ever want see him." Noticing her emotional breakdown, I attempted to steer the conversation away to another topic, but, she was not done yet. She continued, "He's never…never going to be my father." As she spoke, her face expressed her deep anguish, bitterness, and anger. I made yet another attempt to calm her down and eventually persuaded her to let go of her painful feelings, at least for that moment. She acquiesced to my persuasion and wiped off the tears that were streaming down her face. Afterwards, letting out a weak smile, she told stories around her family, digital life, schooling, and career plan.

Web Presence

Like many young people her age, the Internet is a major part of Maria's daily life. Even though she has no computer and Internet access at home, she is online every day, courtesy of Lakefield Teens Library, which provides free Internet and computers to kids

from low-income and minority households like her. She spent at least three hours of her day after school at the library, engaging in a variety of online activities. "I don't have computer and Internet at home," she said, explaining the reason for her daily visits to the library. "My mom can't afford to buy a computer," she added, also intimating that her mother's immigration status as undocumented immigrant had limited her to working "off the books," "washing dishes in a Spanish restaurant with small paycheck and the pay is no good. We spend everything she gets on food and rent. Nothing is left after that," she lamented.

However, Maria is delighted she could use computer and access the Internet free of charge at Lakefield Teens Library. "I'm so happy and grateful that I can come here to do my homework and go on the Internet totally for free," she said. While at the library, Maria spends a greater part of her time on the Internet doing homework. "My schoolwork takes the most priority, while I'm here. For me, it's work before play," she said.

The night before our meeting, she received two separate assignments in the mails from her teachers. One of assignments was a human body project, which required her to conduct an online research to find information about the human digestive system, and then choose one or two 3-D models of the system online to create her own working model. She had one week to complete and submit the assignment along with a one-page paper, and a glossary of key terminologies. As she discussed the assignment with me, I noticed the sparks of excitement that shot through her. "I love science and I enjoy doing research about science," she said.

A fortnight before, she had completed a botany science project, using the Internet to generate basic information prior to carrying out an experiment to explore the correlation between water and seed germination (see Figure 6):

> I've always had two favorite subjects since elementary school. They are math and science. I love math, because I love to work on numbers and solve problems, and it's fun, and I enjoy science, because I love doing experiments. I'm planning to be a doctor.

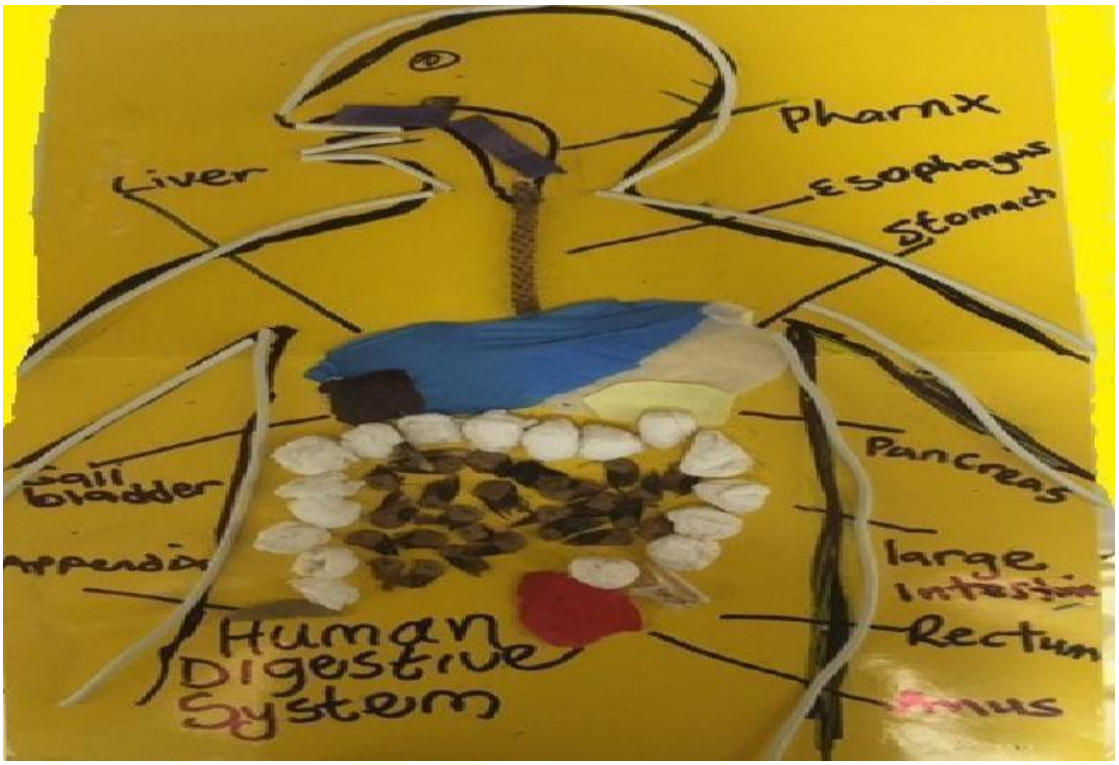

Figure 6. Working model of human digestive system created by Maria.

When asked about her motivation for a career in medicine, Maria mentioned her sense of altruism. "I want to help people. To treat people who are in pain, and are sick and suffering," she said. As she provided further details on the career, I recognized that she seemed to have a strong knowledge of her intended future career. Apart from school and other contexts, the Internet, she said, provides her a wealth of information on the

career, "That kind of information is everywhere online. It's just so easy to do a Google search and get what you want."

Other schoolwork she completed using the Internet are English language arts (ELA) and social studies fair projects. "I used the Internet for reading and writing projects, and projects like the Black History Month, and ancient civilizations, for example, the Aztecs and the Incas, Vikings, Roman Empire, Egyptian mummies pyramid, Aboriginals," she said. She also recently completed a project on the Seven Continents, researching facts and other information for the assignment online, after which she created a PowerPoint presentation and a paper-mâché globe (see Figure 7):

> To do the project, I first had to watch a video on YouTube and then read about the continents using Google, and took notes of the facts and other information, after which, I made my presentation and a globe that shows all continents.

Figure 7. Front page of PowerPoint presentation created by Maria.

To conduct research online, Maria is likely to use several digital tools and resources including Google, YouTube, Wikipedia, and educational websites:

> Any site I choose will always the depend on the kind of information I'm looking for. If I'm to watch videos, I usually go on YouTube, but if it's to find information on the Internet, I do Google search, and if I need pictures, I use Google Image. I also use Wikipedia and educational sites.

Maria understood that her online research activities are equipping her with foundational research skills. She has learned using search engines to access a wide variety of information and to obtain relevant results, how to locate appropriate websites for given topics, and how to evaluate the trustworthiness of different websites and information on them. She believed that she is also developing skills around reading and interpreting texts, journaling, and outlining information to write her essays or create slides.

Beside schoolwork, Maria uses the Internet as a source of entertainment:

> I like and listen to music a lot. It's my favorite hobby and I like to search song lyrics on the Internet, learn, and memorize them. Sometimes, I watch movies on YouTube, but I spend more time watching videos of people and pets doing funny, weird, and extraordinary things.

Unlike other youngsters her age, Maria did not play video games growing up. Apart from not having a gaming device, she had little interest in gaming, "I never liked it, and I won't say I hated it. I don't know if it's because I had no device to play with." Even though, she still has no device of her own, she currently enjoys playing video games, mostly, at the Lakefield Teens Library. While she enjoys playing games, she is most unlikely to play fighting games. "I don't have the heart for those kinds of games," she said, citing the rampant violence and killings in the games. Instead of fighting games, she

plays educational games, particularly those around middle school math and science. She also enjoys playing epistemic games, which are interactive simulations that allow players to role-play professions, including medicine, architecture, engineering, and media, and develop knowledge and skills that are applicable to the professions (McLuhan, 1994; Pink, 2006; Shaffer, 2006; Trilling & Fadel, 2009).

*To the Moon (*Kan, 2011), an indie Adventure, role-playing game (RPG) is one the several science-oriented games she plays. She spoke warm-heartedly of the story-driven game, which depicts the stories of two doctors, exploring a dying man's reminiscences to artificially execute his last wish of traveling to the moon. "It's a story that touches the hearts. I enjoyed it and learned a bunch of stuff from it," she remarked. Maria identified the central themes of the game as empathy, proactivity, and regret. "I also learned about how technology can be used to give a malfunctioning brain artificial memories. It's a fun game!"

As the conversation progressed, Maria opened up and admitted to being naturally shy and scarcely initiating conversations, while in the company of others. Even when the conversations are initiated by others, her response, she said, is usually terse, because of her fear of social interactions. "I feel tense anytime I'm around people, especially people I'm not really close to or I've just met," she said. Because of her shyness, Maria explained, "I have fewer friends." Reflecting on her constant experiences with shyness, she sensed that she might have inherited her nature from her shy mother, "I'm not like the usual American girl. I've lived all my life entire only with my mom and possibly it's something I picked from her culture, because I'm an exact replica of her. She is also shy and quiet." However, keeping herself socially isolated and irrelevant, Maria admitted makes her feel dejected and lonely in the crowd:

> It makes me sad and many times, I'll tell myself I need to stop being shy and

> come out of my shell. With my plan to be a doctor, I'll know I'll be dealing with people, patients, and I need to be free with them.

Ironically, in contrast to her social interactions offline, Maria seems stress-free and more interactive on social media:

> I'm more relaxed on Facebook. I chat more freely with my friends, make voice and video calls to them. I feel I'm more of myself on Facebook, because, people are not around me physically. So, I'm not nervous, and I feel comfortable and confident to freely express myself. That's what I want when I'm relating with people face-to-face.

From discussing her social experiences on Facebook, the conversation with Maria drifted to her use of digital technology in school. Learning activities in her classroom, she said, are routinely old-fashioned, involving working with pen and notebooks, reading from textbooks, and copy notes as her teachers write on the chalkboard. There are two desktop computers in her class, one of which takes almost forever to boot, sits in a corner of the class unused, and daily gathers dust. The other computer is monopolized by her teacher. "She only allows us to use it occasionally because that's where she does all her stuff." Maria disclosed. When Maria and her classmates have to use computers all at the same time, her teacher has to confirm the availability of the school computer lab for the specific day or days they plan to use it and make a prior booking with the school computer lab coordinator, who is also the school technology teacher. Sometimes, other classes would have booked the lab ahead of Maria's class, in which case, her class has to choose a different day or time to use the lab.

There are few smartboards in her school, which is usually assigned to any teacher upon request period of the day in the classroom. Occasionally, when her class is assigned one, following her teacher's request, the use, Maria felt, is often cosmetic, because, her

teacher merely writes on it or uses it to show video clips. She and her classmates may also read on it, but never for any interactive classroom activity. Further portraying the inadequate access to and use of technology in her class, she stated, "We don't have laptops, tablets, and other devices to learn with in my school like other schools." She nevertheless, wished for increased daily technology use in her school building, noting that, "Technology can bring more fun to the class and will help us learn better," she observed.

Trump's Election Hurts

Weeks after the presidential election, which saw the emergence of Donald Trump as the president elect, the outcome of the election is still overwhelming to Tamara. She was an avid supporter of Hillary Clinton throughout the electioneering campaign and had keenly followed both candidates' comments and promises, as well as people's reactions to their remarks via the television and social media. Watching and reading the feisty and disparaging campaign remarks by Mr. Trump, about undocumented immigrants and his promises to deport millions of them in the country, greatly upset her, and she wanted Mrs. Clinton to win the election. She felt, his comments were not only offensive, but also racist.

> He attacked everyone. If you say something about him that he didn’t like, he'll immediately attack you through twitter. He called immigrants all sorts of names. He called them drug addicts, rapists and criminals, and I think that's sad. I felt he was never going to be the president. He was going to lose. Many people on television and social media said they would not vote for him and I was really hoping he'll lose and Hillary will win.

Unfortunately, contrary to Maria's expectation, Mrs. Clinton lost the election, and on the night of the election, after Mr. Trump was declared the winner, Maria said she

wept uncontrollably, "I cried all through the night. And I never had a good sleep for over one week, because, I felt really bad about the result." As the February 2017 inauguration day approaches, Maria said, she and her mother have found themselves overwhelmed with fear and anxiety not knowing, precisely, if Mr. Trump will execute his plan to deport undocumented immigrants. "I am scared every day." she said, "My mom too. And, I keep having these nightmares about her being picked up at her job or while walking on the street, and then sent back to her country. Then, what would happen to me? I don't have anyone, except mother."

Maria felt ahead of Mr. Trump's inauguration and even after, people should take to the streets to protest his planned deportation of undocumented immigrants. "That way, he can know that many people are unhappy with his election and plans to deport immigrants," she said sternly. Maria did not underestimate the power of the media in facilitating effective crusade against Mr. Trump deportation proposition, "He likes to tweet, and I think people should use social media, Facebook and twitter against him," she suggested.

As I wrapped up the interview, I thought, despite being shy, Maria was not without some self-confidence, does clearly have her own voice, and expressed it where it matters. I felt, she is such a brilliant young woman, hardworking and focused, with passionate drive to succeed and be at top of the pile.

Bolo's Narrative Accounts

Crisis in Darfur

Bolo, 13, was one of the three participants in my pilot study. He was born in a non-Arab village in Western Darfur, Sudan in Africa. Bolo was seven years old when the Darfur War began. The conflict was rumored to have been triggered by a major minority uprising, stemming from alleged willful mistreatment by the majority ethnic group,

which was backed by the ruling government, largely constituted by the dominant ethic group. However, the conflict was said to have escalated after the governments enlisted nomadic Arab tribes, the *Janjaweed* militias, in a campaign of ethnic cleansing began exterminating minorities in the country. The war was a major armed conflict described by the United Nations as one of the world's worst humanitarian calamities, with deaths estimated around 500,000 and over 2.3 million people. Bolo had moved with his parents to the United States through the State Department's refugee program. Before moving to the country, he and his family had had a two-year sojourn at a refugee camp in Chad after fleeing their home.

Bolo recalled that when the war reached his village, the *Janjaweed* randomly arrested and beat up men, including the aged, opening fire on their victims and killing them, in addition to burning homes, and pillaging livestock and food stocks:

> It was very scary. Every time I peeped out from where my family and I hid, I saw dead bodies all over the streets. The fighters were shooting in the air, breaking into houses, and forcing people out. They arrested and killed so many people, shooting at them one by one.

As for women, whether they were homemakers or maidens, Bolo said, they were not spared the brutal torture by the ruthless *Janjaweed* militias. The women were brutalized and those amongst them that risked arguing with the militias, Bolo recalled, were murdered. "And, if they like a girl, they'll leave the village with her, and no one would ever see her again," he said, "because, she'll become a girl friend or wife to the soldier who took her."

Before the conflict, Bolo recollected that his father sold raw milk in the village's main market for a living, while his mother sold spices and traditional beverages in a makeshift store outside their home. "We were poor and only managed to survive," he

recalled, but the conflict he reckoned, worsened the severity of poverty for his family and other villagers, "No one was working and people died every day, because they had no food and became weak and sick."

On the day Bolo and his parents fled the village, the *Janjaweed*, the government-sponsored militia, had launched rockets that ripped through the roof of several houses next to his own and set the houses on fire reducing them to ashes. Following the incident, Bolo recalled that he, his parents, and other families fled the village, "Many people died, some people lost their children, wives and husbands." He and his parents managed to reach the refugee camp, physically unhurt, but emotionally traumatized.

One would expect that, the refugee camp would provide some respite, but their travails, Bolo said, persisted. The living conditions were harsh, "There were mosquitoes all over the place. The fed on us like they've been hungry for a thousand years," he said with a tinge of humor. He remembered life in the camp: the sweltering heat, the hot ground they had to sleep on, the lack of potable water, and the pangs of hunger they had to endure because of the limited supplies of food, "We were told that the *Janjaweed* were attacking the trucks that were bring food and water." Despite the living conditions in the camp, Bolo was grateful it offered him and his parents the protection from the *Janjaweed*. Then, his coming to America, he saw as a miracle:

> I felt happy and I shed tears, tears of joy when the plane landed. For months, I felt like I was already in heaven. Everywhere looked beautiful, and each day there was always something beautiful to see. I felt, I had never seen a place like this my entire life.

As Bolo recounted his transition from his war-torn country to his host country his grin summoned dimples on both his cheeks, as he acknowledged the kindness of the people

that attended to and accommodated his family upon arriving the country. "They took care of us, brought us food, clothes and other things. They were all very nice people."

Learning and Self-Representation Online

Shortly after his arrival in the United States, during his first week of school, Bolo recalled the humiliation he suffered at the hands of his intolerant teacher because he could not use computer to complete a task. The setting was the school computer lab, where he sat watching his classmates, while they all worked on tasks with computers, "I had no inkling of what they were doing. I just saw they were staring at the screen and moving the mouse on the computer desk. I didn't know what to do. I had never used a computer before." He remembered that each time he moved the mouse, the pointer on the screen moved in a direction other than he had intended. While he continued to struggle with the mouse, his teacher walked pass. She noticed that he was sitting idly and doing nothing. When she asked him why he was not working, he responded that he did not know what to do. He remembered that his response to the teacher that he knew not what to do drew a sarcastic response, "She was mad and said to me, 'Don't you people have computers in Africa?" He also the uproar of laughter from his classmates.

The teacher, he remembered immediately became cold and unkind to him, making him sit through so many lessons without a task or assigning him to groups while others students worked on assignments:

> I sat all day by myself. She didn’t give me any work to do, but just kept complaining that she wasn't hired to teach computer. That if my parents cared about my education, they should go and hire a computer teacher for me. She talked a lot about Africa and I think the comments were racist.

That her comments were racist was only a fact that Aron realized much later. At the time, he took the blame when the teacher chided and spoke to him in derogatory manner. He thought, it was his fault and not the teacher is that he could not use the system like other students. At the same time his teacher was hounding him, he recalled that he was also being repeatedly bullied by his classmates in and outside of school, "They called me names and kept sayings things about me coming from Africa, and told me to go back to my country." However, not all the kids were hostile to him. The kind ones, he said, often offered to help him with his work and stood up for him when others try to assault him outside the school building. "There were three of them that always helped me out in class, and when the others kids tried to put me down after school, they fight them." One of the three students, he said, eventually introduced him to the Lakefield Teens library, where he learned to use Microsoft Word to type and edit his assignments, as well as learn how to browse the Internet.

Bolo admitted that his competency in using computer and the Internet eventually helped him to explore learning resources online, researching topics for class and homework assignments, and engaging in other learning activities. "After I learned to use the computer, I was able to use the Internet for my school work and others things," Bolo stated. "I felt happy, because it's important to be able to use computer. It's a great asset for one's future." Since His introduction to Lakefield Teens Library, Bolo reported that he had hardly ever missed a day in the library and has actively continued to participate in all sponsored events and programs, "I'm here every day, except weekends, doing my homework and using the Internet to do other stuff," he noted. His house and school are

many bus stops away from the library, but he is never discouraged by the long trips back and forth each day:

> I have to travel like thirty minutes to be here every day after school and travel about forty minutes to reach home from here. It's not easy. But where else can I go to do my assignments, if I'm not here? I must definitely come here every day. I mean my parents don't have the means to buy a computer.

Before coming to the United States, Bolo had only had about a year of schooling before the armed conflict reached his village and forced him and other kids out of school. He was certain that he did not start formal education until, after his seventh birthday or thereabouts, and that before then, he daily attended Arabic classes, which were held under a tree and on dusty ground with a *mullah* (an Islamic scholar) to learn how to read and write in Arabic and memorize and recite verses of the Holy Qur'an. "We didn't have chairs or desks. We all sat on the bare floor under a tree where the teacher, an old man taught to us to read and write Arabic letters and learn the Qur'an," Bolo disclosed. He stated that by the time he came to the U.S., he could only speak Shuwa Arabic and a smattering of English.

In the U.S., Bolo was placed in English as a Second Language (ESL) classes for two years. Reflecting on his experience in ESL classrooms, he mentioned the use of the Computer-Assisted Language Learning (CALL) program in all the classes, which he acknowledged made his learning of English language fun and experiential:

> I learned English very quickly, because we were having fun activities on the computer every day. We played word games, video games, word puzzles and took quizzes with the computer, and read short stories on the Internet. We also watched

> movies every day in the classroom and wrote short poems and letters. The fun of it built my interest in learning the language and also gave me the confidence to try out learning stuff using the computer and going on the Internet on my own.

Through self-directed learning, Bolo explored the Internet to access online tutorials to further learn and practice the language, playing vocabulary, spelling, and grammar games. His biggest headache with the language was, his pronunciation:

> From day one, when I speak in class, all the kids poked fun at me. Sometimes, they mimicked the exact way I talked and words I pronounced just to put me down, or to prove that I'm an alien and that I have to get out of here!

Nevertheless, instead of feeling discouraged and downhearted by the incessant mockery of his classmates, he challenged himself to improve his pronunciation of English, "I wanted to be proud of myself that I can speak English without Sudanese accent and challenged myself to learn to pronounce words the correct way." In pursuing his goal, he explored YouTube videos, spending copious hours each day after school at the Lakefield library with his headset on head repeating words after the instructors:

> It was really helpful. I watched so many videos that people made to help with learning words in English. It was really hard for me at first, trying to learn the words, because, when I meant to say something one way, I'll end up saying it another way. But, I never gave up. I kept trying and trying, and learning to shape my lips as the presenters instructed. Plus, speaking with people every day, my pronunciation got better and better, and later people started saying, 'your English is cool now'. WoW…your English is excellent…and that made me proud of myself.

With heightened self-confidence from learning to use the computer and the Internet, coupled with the strides he was making with his spoken and written English, Bolo signed up for Facebook home and abroad. "I created my account and I have been on Facebook since a year now," he said. Checking his Facebook page, I noticed he identified with the name 'Bolo Sudan,' and I questioned him on it. I thought his response was enlightening, regarding the specific identity he was attempting to enact by identifying with the name 'Sudan' along with his first name:

> It's nothing new. You can use any name you're comfortable with on Facebook. People do that. You can put whatever name you want on Facebook. But, I just put that, because I felt there is no place like home. That's my country, I mean, I'll be going back there someday. Sudan is a nice place. We have beautiful people, kind and loving. It was just the war that messed up things.

Bolo primarily uses Facebook to interact with his friends both in the U.S. and Sudan. He described the site as "my main hangout." Since he has no personal phone, the site has significantly helped him to fulfill his communication needs, "I use Facebook to send emails, chat, and leave messages on my friends' walls. That's the quickest way I can get in touch with them since I don't have a phone."

Bolo is an active movie watcher. He watches at least two full-length movies online per week via movie streaming websites, mostly at the Lakefield Teens Library. One of his favorite movies is *Coming to America,* with Edie Murphy as the lead actor. "It's an amazing movie," he exclaimed. "I've watched it so many times. It's comedy, but it has so much lessons that one can to learn from." He is also a diehard fan of *Trading Places* (2003), a 1983 American comedy film starred by Dan Aykroyd and Eddie

Murphy, which relates the story of an arrogant upper-class commodities broker and a destitute street hustler whose lives cross paths, when their positions were reversed as part of a bet by two coldhearted magnates. Also on Bolo's list of favorite movies is *The* Pursuit *of Happiness* (2006), starring Will Smith as Chris Gardner, a San Francisco commissioned sales clerk and Smith's son Jaden Smith, the co-star, playing 5-year-old Christopher Jr. The movie, which is based on a true story narrates how the experiences of both father and son, who are forced to sleep on the streets and in homeless shelters as a result of adversities, and how through self-confidence and perseverance, Chris Gardner overcomes his obstacles and becomes a Wall Street legend.

Contemplating Movie Making Career

Given his anticipated career ambition in filmmaking, Bolo may be heeding the now popular mantra in the professional world to "follow your passion," which implies transforming one's fun hobby into a career. Elaborating on how much he enjoys watching movies, he intimated his interest in becoming a movie producer, "I want to produce movies. Specifically, make my own movies." But, he is not simply thinking of producing or making movies for the sake of it or the money, his kind of movies, he said, are meant to inspire social change around poverty, wars and love in the world. He felt that much of the turmoil in the world stemmed from humanity's insatiable thirst for power, and that through films, he could propagate messages of peace and love to the world.

> I feel everybody watches movies, and we all enjoy them because they are entertaining. And I felt, through movies people can learn lots of things that can change the world for good, like in Sudan that I came from. After the country split, now that we have southern and northern Sudan, there are still problems

> everywhere. I feel it'll be good to see positive happenings in many countries, especially in Sudan.

In pursuit of his movie career plan, Bolo plans to go to film school after high school, hoping to produce a maiden movie, "that'll entirely be about Sudan," that will relate his and other victims' stories and experiences during the Darfur War:

> I was originally thinking of a documentary about my life during the war. I thought documentaries are good to tell stories about one's experiences, maybe, because I love to watch documentaries as well. Then, I suddenly had the idea about movies as a better choice. A lot of people cry when they watch good movies. I thought, that'll be great, and with movies, I'll be able to tell a lot more stories and capture all the actions during the war.

Bolo's vision of his first movie is similar to scenarios in *Blood Diamond,* a 2006 thriller/drama movie around the civil war that engulfed Sierra Leone in the 1990s, featuring Hollywood star actors Leonardo DiCaprio as a White South African mercenary and Djimon Hounsou as a Black Mende fisherman whose family life and business came to a standstill in the conflict. He also likened his proposed film to *Hotel Rwanda,* which was produced in 2004 and starred Don Cheadle, another Hollywood star actor, "Those are my kinds of film. They tell good stories and that's what I want to do. Tell the stories about my life during the war in Sudan." Bolo remarked. As part of making films, he has a lofty ambition of walking the red carpet at the Oscars one day as a celebrated filmmaker.

Meanwhile, while waiting for fate to lead him to his expected future, Bolo has continued to avail himself of every opportunity that comes his way to learn the basics of filmmaking. "I usually read stuff about filmmaking and watch countless videos on

YouTube about the making of movies," he disclosed. At the time of this study, Bolo was learning to use ProTools software to edit audio materials under the auspices of Lakefield Teens Library. I observed him during one of the training sessions and was impressed with the vigor and keenness with which he edited a couple of audio materials. His trainer intermediately commended him as he edited the clips and made a beat using other software. The 12-week training, which had other teenagers in attendance for the fourth week at the time of my interview with Bolo.

Aside from learning to edit audio clips with ProTools, Bolo had previously learned, through one of the library trainings, to create PowerPoint presentations and to use Microsoft Publisher, an entry-level desktop publishing application, to make simple posters, fliers, greeting or invitation cards. He showed a copy of the birthday card he made for one of his class teachers (see Figure 8).

Figure 8. A personalized birthday card created by Bolo for his teacher.

Darfur is Dying

Occasionally, Bolo plays video games. "I love to play video games when I'm free. They are fun and exciting," he said. Beyond the fun, he saw gaming as opportunity to learn. "I believe I've learned so many things from playing games." He cited *Darfur is Dying* (Ruiz et al., 2006), a narrative-based simulation that recreates the challenges and adversities faced by displaced refugees in Darfur war an example of games he finds edifying.

> It's a story I'm familiar with, because, I personally experienced it. It actually brought back the memories of the war to me, though, in a good way, learning from it about love, kindness and helping people who are in danger. It teaches you to be your brother's keeper, and that's the kind of life I appreciate.

Smart, humble, and enthusiastic are only a few words to describe Bolo, who had faced grave situations in his young life, but continued to thrive and walk his path determinably to his finest moments in life.

Chapter 5

Common Narrative Threads

Introduction

The previous chapter detailed each participant's individual story. This chapter presents the common threads and discussion across participants' narrative accounts. Locating the threads involved traveling through times - the past, present, and future - which constantly surfaced in participants' stories and pointed to influences, such as family backgrounds, upbringings, educational experiences, inner struggles, emotions, challenges, feats, and aspirations that collaboratively shaped their evolving lives in unison with their use of digital tools. The threads portrayed the ways participants circumvented the challenges they faced in accessing digital tools and resources, their mixed literacy practices, and ways in which they were constructing for themselves as more empowered identities using the tools. I identified and discussed the four main themes that constitute the common threads in participants' narratives as follows:

1. Digital Access
2. Literacy Practices
3. Crafting Identities
4. Career Paths

Digital Access

Digital Access at Home

Digital access refers to "full electronic participation in society" (Ribble, 2011, p. 16). Such participation requires access to digital devices and the requisite skills necessary to operate the devices. Frequent use is necessary to develop expertise. Socioeconomic

differences result in extreme differences in access, often referred to as the digital divide, a term characterizing the gulf between those who have access to computers and the Internet, and those who do not (Selwyn, 2004; Servon & Nelson, 2001). A digital divide, therefore, implies that some people are disenfranchised from full participation in an increasingly digital society. Lack of access to digital technology is a major barrier for people that are economically challenged (Barseghian, 2013; Leu, 2014). Luhby (2015) explained that Blacks and Hispanics have far less income compared to Whites and that the income gap between Whites and people of color had been steady for the past four decades. According to his study, whites have approximately 10 times the wealth of Blacks and Hispanics because they dominate higher-paying careers in the country. As a result, the Black and Hispanic participants in this study are less likely than White families to have home computers and limitless access to the Internet because the latter trail them economically (O' Connor et al., 2001; Campbell & Kaufman, 2006).

Analysis of narratives in this study revealed that participants do face significant challenges in accessing digital technology. All of their families were grappling with financial stress, and none of the participants had any digital access at home. Aaron reported that since his father's incarceration on a marijuana offence, the only source of household income has been his mother's salary, which barely pays for rent and utilities, let alone a home computer and Internet service. Tamara is similarly on the wrong side of the digital divide because of searing poverty. Following a work-related injury, her father’s income has been limited to a meagre disability benefit. Her mother works two jobs to supplement her husband’s benefit, but her family continues to struggle to make ends meet. They consistently frequent local pantries free foodstuffs and shop at thrift

stores to manage the household income. Tamara did receive a functional used phone from her boyfriend, but since she is unable to pay for mobile data, she is dependent on free public Wi-Fi networks to access the Internet. Maria is one of the over five million US-born children whose parents are undocumented immigrants (Warren, 2013; Passel & Cohn, 2011). Following her father's desertion of the family, she has grown up with only her mother as family sole breadwinner. Her mother works "off the books" for a pittance washing dishes in a Spanish restaurant. She and her mother have lived from hand to mouth without no money left over after rent and food. Bolo, a refugee from Sudan, also has no way of accessing the Internet at home because his family similarly lives in crushing poverty.

Digital Access at School

Not only do participants lack access to digital resources at home, but also at school. Pandolfo, (2012) observed that there are huge disparities in spending on digital technology in school districts across the country varies. For low-income schools, inadequate access to digital technology remains a major challenge because of poor funding (Hohlfeld, Ritzhaupt, & Barron, 2007). Thus, while students in affluent school neighborhoods literarily live online learning with digital books, watching videos, using the Internet to find information and playing educational games, those in poor schools spend their time in more traditional school activities. All participants related frustration with the lack of or underutilization of computers and other devices at their schools and shared a wish for more access. They understood that to function fully in contemporary society, they need to be able to access and use a wide range of digital tools and exist digital spaces (Banaji & Buckingham, 2013; Lenhart, 2011; van Dijk, 2013).

Maria reported that learning activities in her classroom mostly involved reading from textbooks and copying down notes from the chalkboard as her teacher writes. The Smartboard in her classroom was also used in this fashion, rather than as a tool for interactive activity. Neither of the two desktop computers was available for student use. When Tamara and her classmates needed to use computers to complete a task, their time was limited. She and her classmates often had to rush through the assignments. Even though she loves school and does well in her studies, she feels sleepy and bored in school. She felt that regular access to digital technology at school could bring excitement and fun to learning at school. Aaron similarly complained of boredom at school and believed that increased and regular use of technology would make learning a fun experience in school. Bolo had slightly more access that the other participants due to the use of the Computer-Assisted Language Learning (CALL) program in his ESL classrooms. He acknowledged that CALL made his learning of English language fun and experiential. The program allowed him to learn the language through a range of activities, including gaming, and watching movies.

Nevertheless, increased access was not without its difficulties. Bolo had never used a computer. Due to his lack of basic computer knowledge, his teacher openly berated him countless times, instead of helping him to learn to use the device. His inability to use a computer at the time can be explained by van Dijk's (2012) assertion, "Having physical and material access does not automatically lead to appropriation of the technology as one first has to develop several skills to use the medium concerned" (p.61). Eventually, Bolo did get help with learning how to type a document, set up an email address, use the Internet, and go on social media, but not at school. He daily visited

Lakefield Teens Library where he took classes. The library provided free training on different digital software, including Microsoft PowerPoint, Microsoft Access, and Microsoft Publisher and Pro tools audio editing audio recording and music creation software.

The Lakefield Teens Library is a digital haven for these economically disadvantaged adolescents. Without the library, participants admitted that they would face more severe challenges in accessing digital technologies outside of school. Their experiences provide stories to support the fact that public libraries are the principal venues for historically underserved adolescents to use computers and gain access to the Internet (Lopez et al., 2016; Spielberger et al., 2004). A Pew report showed that 77% of young library users that frequent public libraries do so to use free computers and Internet primarily, rather than to read or borrow books (Zickuhr et al., 2013).

Research on new literacies indicate that constant access to digital technology is a cornerstone of creating strong literacies practices among young people in the 21st century world (Black, 2007; New London Group, 1996). Barseghian (2013) contended that, for historically underserved adolescents, access to digital technology devices could be a great equalizer. Conversely, without equal access, adolescents from historically marginalized backgrounds will continue to fall behind those from more privileged backgrounds in their abilities to locate and analyze information, receive an education, and develop a positive sense of self and hope for a better future (NAEYC & the Fred Rogers Center, 2012).

Literacy Practices

Literacy is located and situated within interactions among people. Literacy is mastery of a set of practices and ways of being indicative of a particular social group

(Gee, 1989). These practices include but are not limited to reading and writing. Literacy is akin to the acquisition of an identity kit (i.e., a special combination of ways of thinking, being, speaking, reading, writing, valuing, etc.) that enables one to identify oneself and be identified as a member of the group. Literacy practices transcend observable behaviors and include "values, attitudes, feelings and social relationships" (Street, 1993, p. 12), and, "The notion of *literacy practices* offers a powerful way of conceptualizing the link between the activities of reading and writing and the social structures in which they are embedded and which they help to shape" (Street, 1993, p. 43). Literacy practices are mediated by social institutions, power relations, and cultural history (Barton & Hamilton, 1998).

Literacies are multi-modal, involving reading and writing, sounds, music, text, images, color, and music, among others. In addition, literacy practices are interactive, participatory, and collaborative. Literacy practices are agentic and generative, implying that it involves making sense of text in constructing and distributing knowledge (Barton & Hamilton, 1998; Kress, 2003; Lankshear & Knobel, 2011). The Internet and other forms of digital technology are transforming the nature of reading, writing, and other literacy practices (Alvermann, 2008; Beach & O'Brien, 2008; Bruce, 2004). They have proven to be powerful new tools for human lives and fostering new possibilities for all persons (Coiro et al., 2008; Lankshear & Knobel, 2003). In these environments, students' roles shift from that of consumers to co-producers of knowledge (Alvermann, 2008; Leu et al., 2014; Merchant, 2008). In spite of their difficulties in achieving access, all participants acquired literacy practices that they perceived as worthwhile. Through

analysis of their interviews, I characterize these practices as learning by doing, playful learning, and affinity groups.

Learning by Doing

The term computer literacy refers to the ability to use computers and technology competently (Easton & Easton, 2003; Haigh, 1985). It is an essential skill in almost every facet of life and crucial for success in school, workplaces, and life. All participants increased their digital literacy through self-sponsored exploration and practice, sometimes accompanied by explicit instruction through in-person tutorials sponsored by the library and through video recordings available on the Internet. However, this sense of control and agency seems also to permeate other aspects of their learning. Through available digital tools, participants are learning to be self-productive and multi-literate. They are independently navigating the Internet and conducting online research to complete assignments and fulfil personal digital obligations.

For homework assignments and other projects requiring research, Maria uses search engines, online databases, and news sites to find information. She understood that to get results that are relevant to her search or inquiries she needed to use keywords and phrases. Over the years, she has used the Internet to find information for a variety of assignments across multiple subject areas. Aside from schoolwork, she routinely uses the Internet to find information on subjects of personal interest. These include song lyrics, recipes, and checking out prices of items among others. She recognized that her use of the Internet for research is positively enhancing her foundational research skills.

Tamara also spends a substantial number of on-line hours studying and researching complex topics across subject areas. Math is her weakest subject, so she

watches video tutorials, takes interactive quizzes, and plays math and language arts games. She is frequently on YouTube to explore videos around topics of personal interest. She has also joined a web forum, which allows her to submit text-based inquiries to elicit users' perspectives on issues of bi-racial identity. Acknowledging the wealth of information online, she expressed her passion for lifelong learning and the motivation to learn new things every day. She was certain that her interactions and communication with others users within the forum were advancing both her social and writing skills. Similar to Maria and Tamara, Aaron uses the Internet to complete research for assignments. He also consults on-line tutorials in order to learn, practice, and remediate math and English skills. He finds learning in this digital environment fun.

Over several years, Bolo had emerged from not being able to use the computer to a highly skilled computer user, proficiently navigating the Internet. His use of CALL, prepared him to explore online tutorials to practice the English language and play vocabulary, spelling and grammar games in his spare time. He has used YouTube videos to learn and improve his pronunciation of English words, which he acknowledged as helpful.

On-line tutorials are beneficial to K-12 students, helping them to take charge of their learning, enrich their learning, and deepen their understanding and retention of content (Kanna et al., 2009; Lips, 2016). The participants in this study sought out digital mentors when they needed them, allowing them to control and lead their own education.

Playful Learning

Participants are not only spending tons of time online doing schoolwork, but also playing video games engaging in other forms of media entertainment, including watching

movies online, documentaries and skits, which are helping them to play and learn. Researchers have documented the intersection between play and learning, and conveyed the benefit for promotive cognitive development in young learners (Loftus & Loftus, 1983; Piaget, 1962; Vygotsky, 1978). They suggested playful learning as leading to deeper engagement with lessons, student-directed learning, and development of critical and problem-solving skills (Ito et al., 2008; Plass, Perlin, & Nordlinger, 2014).

One clear leader among the forms of entertainment that participants access online is video games. They all primarily play video games for fun, but they also acknowledged the value for developing skills and learning valuable life lessons. Not only do video games afford gamers an important means of entertainment, but also captivate their attention in ways that make them feel that the activities they are engaged in real and momentous, and encourage them to invest their whole being in the learning process (Green et al., 2012; Gee, 2003; Prensky 2001b). Aaron recognized video games as increasingly beneficial to him in overcoming his struggles with maintaining focus stemming from his ADHD condition and learning relevant social skills. Playing video games, he acknowledged put him in a better mood and motivated his learning engagement and completion of tasks, which are ordinarily difficult in a traditional learning context.

Participants find that video games are relevant to academic subjects, including history, social studies, math, and English. Aaron cited games, such as *Minecraft Minecraft (*Persson Et al., 2011), *SimCity* (Wright, 1989) and *Civilization VI* (Ed Beach, 2016) *as* examples of games that allow learning at the intersections of multiple academic subjects. Tamara reported playing video to learn math and practice topics in English language arts. Maria, conversely, enjoys playing educational around

middle school science and math. She also plays many epistemic games, specifically around science. Bolo found *Darfur is Dying* (Ruiz et al., 2006), *a* narrative-based stimulation recreating the challenges and adversities faced by displaced refugees in Darfur war highly instructive about empathy, love, and social justice advocacy.

Participants generally understood that video games provide the kind of events that simulate a real-life experience. They recognized video games as effective learning tools for engaging in experiential learning and honing their creative impulses. They also acknowledged video games as providing for learning teamwork, collaboration, communication, goal-setting, strategic thinking, and multitasking (Chiappe, et al., 2013; Plass et al., 2010; Prensky, 2005; Shaffer, 2006).

Video games also play an important role in the socialization of participants, particularly Aaron and Tamara who are heavy game players. They are both passionate about WoW, one of the popular massively multiplayer online role-playing games (MMORPGs), through which they have successfully explore new relationships within the game's online community. Tamara cited her relationship with Jarvis, her boyfriend as a legacy of her interaction playing the game online. Aaron mentioned establishing the social camaraderie that exists between her gamers from different parts of the world, including a pilot in Britain, a high schooler in Paris, a server in Holland and a creative artist in India. He acknowledged interactions with the gamers as helping to develop a collection of practice a range of social skills, including following rules, taking turns and self-expression, in addition to developing a sense of belonging.

Gaming scholars suggest that playing video may boost children’s learning, social skills, relaxation, ward off anxiety, sharp and quick decision making, leadership, and

logical, imaginative and executive skills (Eichenbaum et al., 2014; Granic et al., 2014; Honey, Culp, & Spielvogel, 2005). All participants in this study indicated that they concurred.

Affinity Groups

Social media is an integral part of participants' daily lives. Participants use the space primarily for social interaction with their families and friends (Ellison et al., 2007; Trusov, 2010). All are on Facebook, and Tamara has additional Instagram and Snapchat accounts, the other participants are only on Facebook. Participants' narratives showed that social media helps them to form new friends, strengthen old friendships, and increase their feelings of intimacy and support with friends. Their participation on sites also strengthens their sense of community and belonging. Aaron spoke of meeting and making friends with a fellow photographer and considering mentorship with the friend's father who is also a photographer. For Tamara, text messages and video calls provide important avenues for social interactions with friends and for discussing schoolwork with her classmates via text messages and video calls. Facebook helps Bolo to maintain regular contact with families and friends in his home country of Sudan.

Communication is an essential component of participants' interactions on social media. While on the site, participants enjoy sharing personal moments via picture posts and other self-generated content. They mostly use Facebook Messenger to communicate with their families and friends, in addition to chatting, emailing, video calls, and making comments about posts. They acknowledged the value of social media for news, information, entertainment, and in gaining new social experiences through third party posts, including memes, videos, skits, and other contents.

Participants' online activities align with the concept of affinity spaces (Gee, 2004, 2007) and communities of practice (Wenger, 1998), which describes the physical, virtual, and amalgamated spaces where people assemble in pursuit of common interests and shared endeavors. Consistent with participants' stories, studies suggest that social media provides teenagers the platform for friendships and a sense of belonging, entertainment, following social events and seeing, as well as a place to turn to for advice, creative self-expression express feelings, gain emotional support (Common Sense Media, 2009; Ito et al., 2009; Lenhart et al., 2007a; O'Keeffe et al., 2011).

Crafting Identities

Participants fell within the 13 to 19-age bracket that Erikson (1968) described as a critical period of identity formation, in which adolescents began to define and redefine themselves in relation to others and their sociocultural environments. Around the period, adolescents evolve a sense of self-identity as they struggle for autonomy from their parents and other adults and rely on approval from their peers (Buhrmester & Prager, 1995; Coje, 2009; Steinberg, 2011). Construction of a firm and lucid identity is therefore, a crucial developmental task during adolescence (Subrahmanyam & Šmahel, 2011) that enables young people to gain awareness of who they are and where they belong (Walrave Ponnet, Vanderhoven, Haers, & Segaert, 2016.).

Participants' stories revealed that digital technologies intersect with participants' self-presentation and identity enactment. The stories indicated that participants’ sense of identity is heavily influenced by their online interactions, communication, entertainment, learning, and other digital habits (Prui, 2012; Valkenburg & Peter, 2008). On social media, participants constantly engage in presentation of self and seek identity validation

from friends in an ongoing process of self-negotiation, renegotiation, creation, and recreation. They spend a lot of time constructing the kind of identities or idealized selves they anticipate will elicit favorable feedback from their friends (Walrave, et al., 2016). The representation of selves and identity enactment on the sites is largely characterized by self-content creation, involving posting of personal profile, picture posts, sharing personal moments and making comments among others.

On Facebook, Aaron uses his profile page to create an online identity that portrays him as a photographer, an ambition, which he discreetly nurses. Even though, he owns no camera to upload self-created images, he culls and uploads pictures from different photo sharing websites on his Facebook page, which considerably reflect his passion for photography and related identity. Tamara regularly takes and posts her selfies on social media for fun and to share her moments with friends and strengthens her intimacy with them. The desire to obtain approval around her physical appearance and personality to gain self-worth also underpins her posting of selfie. Joining typology central.com, a web forum, allowed her to elicit contributions from other users around her racial concerns and meaningfully helped her in developing personal perspective on her biracial identity and gaining inner peace and self of pride in her racial heritage.

On Facebook, Bolo identifies as "Bolo Sudan," which is a mix of his first name and country's name – Sudan. His adoption of his country's name on the site, he explained, allows him shared connection to his roots and sense of racial pride. Coming to the United States as a refugee from his war-torn country and unable to use a computer, he was verbally abused by his classroom teacher and classmates. His eventual learning of basic computer skills, not only allowed operating a computer, but also competently using the

Internet. As his stories indicated, his computer literacy achievement empowered his sense of self and agency around his learning, talents, values, beliefs, and anticipated future. To learn to speak English without an accent, he relentlessly explored free English pronunciation tutorials online. His attainment of the goal afterwards enhanced his sense of pride and inward esteem.

Maria is innately shy and reserved, and rarely initiates conversations and when initiated by others, her contribution to it is usually sparing. Social anxiety, which is the fear of being judged by others in an uncomplimentary way, she admitted, makes her feel uncomfortable amidst people she is not too familiar. She, however, feels relaxed and more confident interacting and communicating online; chatting with people and posting status updates on Facebook, contrary to face-to-face communications, because of the possibility of maintaining anonymity and taking her time to respond to conversations. She acknowledged that living with social anxiety makes her feel dejected and believed that her interactions on Facebook has increasingly helped gain comfort and confidence in social interactions, suggesting the capacity of the social media site to help shape her social identity. Her view is consistent with research findings, which present social networking sites as a learning for social interactions and communication, where social practices identities intermingle and encourages building of social skills and identity (Buckingham, 2008; Garrison & Anderson, 2005; Palloff & Pratt, 2007).

The narratives suggest that in playing video games, some of the participants create simulated alternate selves who exemplify aspects of their ideal selves. Tamara spoke of investing certain of her traits during character creation process, while playing WoW. By assigning skills, powers and attributes to characters, she is able explore her

fantasies and experiment with idealized versions of herself, and consequently adopt applicable attributes of the characters in real life. Aaron connects more easily and identifies with characters who are believable and inspire positive traits. He is attracted to characters that are good looking, brave, skillful, intelligent, and can get the tasks done. He recognized his deficiency around these attributes and seeks to cultivate adopts them playing video games.

One of the most powerful ways in which participants have gainfully used digital technology is in developing awareness of race-related matters and building healthy racial self-esteem. While Tamara explored typologycentral.com a discussion forum to gain insights into the issues of race and racial identity, specifically around her biracial heritage and ultimately attained inner peace and racial pride and self-esteem, Aaron navigates YouTube to achieve insights into the accomplishments of African Americans and their contributions to the country. He understood institutional racism as a major factor that has constantly kept Blacks socially and economically marginalized, keeping them locked in dilapidated housing projects and with substandard education. Drawing inspiration from his favorite and successful Black celebrities, some of whom he follows on social media, he is certain of achieving success with hard work, drive, and personal responsibility.

As depicted by their narratives, digital technology provides multiple opportunities for participants. It serves as important source of information and means of communication, facilitates their participation in social learning communities, and enables them to construct fluid identities in ways that are congruent with their digital experiences, preferences, fantasies, struggles, hopes and anticipations in real life. Gee and Lee (2016)

observed that in the contemporary world, “digital technologies have become ways of expressing our identities… and new identities” (p. 167). In line with the concept of new literacies (Anstey & Bull, 2006) identified a range of resources that shape adolescents' literacy to include "social and cultural resources, technological experience, and all previous life experiences, as well as specific literacy knowledge and experience" (p. 35). Digital resources enable them to make sense of their world and attain self-empowerment (Barton & Hamilton, 2000; Pahl & Roswell 2005; Street, 1998).

Career Paths

Career threads were evident in participants' narrative accounts. Participants were composing their future careers drawing on their digital experiences and aspirations for a better life. Aaron is pained to live in the same housing project in which his parents were born and raised. He saw his life beyond the environment that he described as ghettoish. Inspired by his love for photos and his pastime of surfing the Internet for images, he plans to pursue a career in photography. His career ambition is to own a photo company and travel the world, taking pictures of people and places, as well as handling briefs for celebrities, fashion models, and companies. He hopes to make enough money in his chosen career to enjoy higher living standards compared to his parents. He contemplates founding a media company similar to the National Geographic, but with focus on Black people.

Tamara plans to study in computer animation in college and work in the video game industry as an animator or game designer upon graduation. Apart from her innate flair for drawing and passion for gaming, which provide the primary motivation the career choice, she is propelled by her research finding through the Internet, which

indicated animators as one of the highest workers in the entertainment industry. She expects to earn enough to stay out of poverty and take care of her parents. Maria's dream is to become a medical doctor. She similarly wants to live a better life for her herself and mother. She enjoys playing science and math educational games around middle school elementary to gain basic knowledge in the medical sciences toward her intended career in medicine.

Inspired by his spare-time habit of watching movies, mostly on free movie streaming sites, Bolo plans to pursue a career in filmmaking. He plans to go to film production college and produce his own feature films after completion. First, he wants to produce a movie to capture his psychological trauma of his wartime experiences and other victims during the Darfur war in his country Sudan. He has the ambition of walking the red carpet at the Oscar ceremonies as a celebrated movie filmmaker. Toward his career ambition, Bolo takes advantage of training and workshops organized by Lakefield Teens Library to learn different aspects of filmmaking. Aside pro tools, music and audio software, he has learned to create publicity fliers and presentation slides using Microsoft Publisher and PowerPoint application through free computer classes offered by library.

Chapter 6

Discussion

The findings of this study have important implications for educational policy related to digital access and schooling and contribute to knowledge of the role of new literacies in adolescent identity development. It also furthers understanding of the use of identity as a lens for narrative research.

Digital Access

The challenges that participants faced in accessing and using digital technology are visible throughout their narratives and show that, despite the increased accessibility of low-cost devices, the digital divide is far from closed in our society. A Kaiser Family Foundation Report (Roberts, et al, 1999) describes the homes of adolescents between ages eight and eighteen as "media rich;" but the study did not target poor, minority urban populations. Instead, historically marginalized youths disproportionally lack access to a broad range of digital devices and broadband Internet, both at home and in school throughout the day (Celano, et al., 2013; Lenhart, et., 2005b; Leu, 2014; U.S. Department of Housing and Urban Development, 2016). A Pew Report (Zickuhr & Smith, 2012) found that in school the difference in access between higher and lower income schools is extreme. The disparities in digital access increasingly contribute to achievement gaps between affluent and poor school districts (Warschauer & Matuchniak, 2010). These disparities limit the college readiness of low income students (Conley, 2007; Goldin & Katz, 2008; Leu et al., 2014; Shelow, 2016). Consistent with the review of literature, the participants' narratives in this study showed that adolescents who are on the losing side of the divide are chiefly from low income and minority households. As the narratives indicated, these participants have no access to digital technology at home and also lack consistent access in school.

For all participants in this study, negotiating digital access involves incessant struggles. To use computers and access the Internet outside of school, they primarily rely on Lakefield

Teens library. Without the library, access to digital tools appeared impossible for them to complete homework assignments, go on social media, play videogames, and pursue their other digital interests. Their sole reliance on the library digital facilities often come with attendant challenges for participants. They are typically restricted to library operating hours, from 2:30 to 6:00 pm, which is less than four hours a day. On weekends and public holidays, they have no access to the library. Celano, et al. (2013) observed that access to public libraries "resources can be unreliable—restrictive timeframes, high demand, and funding problems all add up to erratic availability of technology in these settings" (para. 1).

Even for teens like Tamara, the study participant who has a mobile phone, she has no data plan. To use the Internet, she must locate cafes, restaurants and other free Wi-Fi facilities. Her habit of wandering around neighborhoods to connect to free Wi-Fi networks eats up her time and puts her at risk for danger. Hence, it is imperative that adolescents like her have full digital access to maximize their potential. The inequality in access to and use of digital technologies between low and high income adolescents require urgent amends, because without access, they face an indeterminate future in the current digital economy.

Drawing on the capability of digital media technologies for learning and youth empowerment, scholars propose digital access as a basic right for all kids (Alvermann, et al., 2012; Barseghian, 2013; Leu, 2014; Warschauer & Matuchniak 2010). Digital access, they contend, connotes digital inclusion (Rhinesmith, 2016; GSMA, 2014). Seifer (2016) stated:

> Digital Inclusion refers to the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies (ICTs). This includes 5 elements: (1) affordable, robust broadband Internet service; (2) Internet-enabled devices that meet the needs of the user; (3) access to digital literacy training; (4) quality technical support; and (5) applications and online content designed to enable and encourage self-sufficiency,

participation, and collaboration (para. 4).

Digital inclusion not only guarantees equitable access to digital resources by young people, but also encourages their self- empowerment and emergence as active contributors to the progress of their communities (Hilbert, 2011; Prensky, 2012; Street, 2001). Barseghian (2013) and Leu (2014) argued that, given the opportunities they afford for personal and public goods, digital access can no longer be an exclusive preserve of the haves.

It is important to understand, however, that digital access goes beyond owning or having physical access to new media tools. It also implies having the ability to use the tools regularly and to complete high interest, engaging, stimulating, thoughtful, and important tasks (Hargittai, 2002; Katz & Rice, 2002; van Dijk, 2012; Rhinesmith, 2016). As digital technology increasingly becomes the central tool for learning and gaining skills for employment in this digital age, there is no question that the consequences of keeping underserved youths offline are huge. Adolescents without digital access will consistently find it hard to climb out of poverty and become productive citizens. In this sense, enabling equitable digital access for this group of adolescents means engaged learning opportunities and ability to assume greater agency over their learning and future. To pull these teens from the losing side of the digital divide, there must be a marked shift in education policy from digital divide to digital inclusion. Digital inclusion policies would afford them new social realities and create opportunities for them to participate, inquire, create, decide, change, and evolve as an essential part of social dynamics (Bonilla, 2005). According to Bonilla, digital inclusion allows,

> the appropriation of technology and development of people in the most different aspects, stimulate job creation and income, and promote quality of life for families, provide greater social freedom, encourage the construction and maintenance of an active society, educated and entrepreneurial" (Bonilla 2005, p.12).

In addressing the digital divide, stakeholders in education need to, foremost, admit its existence. This needs to be followed up with a policy shift in school funding. Research shows that that schools in low income districts are inadequately funded (Celano, et al., 2013; Ferguson, 1991; Litvinov, 2015). To guarantee that these schools are digitally self-sufficient and students have access to a wide array of digital media technologies, policy makers need to increase funding and spending on technologies (Leu, et al., 2004; Warschauer & Matuchniak, 2010). This will ensure that, like their peers from affluent backgrounds, low income and minority students can "fully participate and take full advantage of the many benefits of our digital society *(*Haight, et al., 2014; Leu et. al. 2014). Barseghian (2013) alleged that many low-income schools receive funds for digital devices, but often do not procure the items. Instead of starving the schools of funds, stringent measures should be taken to ensure judicious, suitable and accountable use of monies for earmarked purchases within budget parameters.

To ensure adequate funding for technology in school, it is incumbent on all principal stakeholders in the education of these young learners, including parents, educators and policy makers to join forces. In addition, the onus falls on school administrators to woo and enlist entities, such as local businesses, donor agencies, youth centers, charities, and faith-based for needed funds. Such initiative offers a direct attempt to bridge the digital divide and make the learning experience of adolescents from historically marginalized backgrounds more productive. To ensure consistent digital access for the group of adolescents, schools may consider allowing access to school computer labs both after school hours and for certain number of hours on weekends. In conjunction with sponsoring partners, including public libraries, schools may institute WI-FI hotspots within their communities, where economically advantaged students can connect their mobile devices to the Internet to complete homework assignments and engage in other self-learning activities.

Schooling

Access to technology is not enough, however. As I repeatedly went through participants' narrative accounts, I was dismayed by the paucity of opportunities they have to engage digital tools in their classrooms for reflective learning practices. In school, participants reported that they use digital tools mostly for drill and practice or test review exercises, verifying earlier studies findings that students in low-income neighborhoods use technology differently than their counterparts in rich school neighborhoods (Bouffard, 2008; Leu, 2014). The studies suggest that students in poor schools are less likely to use technology to create digital storybooks, multimedia presentations, artwork, classroom bulletins, watch movies, engage in inquiry-based or discovery learning, and use the whiteboard system for interactive learning activities (Cuban, 2001; Moeller, 2011). The teacher driven pedagogy, to which the students are exposed, is not just boring but typically ineffective in preparing students to function in today's digital society (Groff, et al., 2004; Rideout, et al., 2010).

Blair (2012) suggests that technology must be put into the hands of students in schools to reduce teacher direct instruction and create student-led learning. Providing these new 21st century learners technology tools, she contends, will not only allow students to master the core curriculum, but to also be intellectually challenged and creative, as well as evolve as critical thinkers, adept decision makers, and change agents in their communities. Moeller, et al. (2011) asserts that, in a digitally rich classroom, learning goals are deeply aligned with student profiles, preferences, and career aspirations. She adds that, within the environment, students take charge of their own learning, while teachers primarily act as facilitators, coaches and co-constructors of knowledge. "They work to develop and explore their own unique academic and career interests, and produce authentic, professional quality work to demonstrate their learning" (p.17). For example, Moeller and his colleagues recommend *Being Me Social Network* as a suitable way to integrate technology into curriculum in school. *Being Me Social Network* is a

technology infused literacy program was designed by the Institute of Play to support students' academic and socio-emotional development through online partnership, sharing of work, and community building. The core objective of the program is to help students "discover and develop their own intellectual and career interests" (p. 73).

The manifest benefits of technology integration in classrooms underscores the need for professional development opportunities to train teachers in the effective use of the tools. Research suggest that a major challenge for school is the lack of requisite knowledge by many teachers to integrate digital tools into instruction (Beglau, et al. 2011; Lawless, & Pellegrino, 2007). Providing professional development will, therefore, help educators to gain pertinent skills and leverage digital technologies for the kind of teaching and learning that can make their students lifelong learners and adequately prepare them for the 21st Century work places and life (Cummins, et el., 2007; Gulsecen & Kubat, 2006).

New Literacies

The nature of literacy has fundamentally changed. Literacy has evolved as a situated social practice in relationship to technological developments (Gee, 2005; New London Group, 1996; November, 2010; O'Keeffe, et al., 2011; Schaffer, 2006; Wonica, 2013). This implies that being literate in the 21st century means more than just reading a book or writing on a piece of paper. It is about active construction of meaning through multimodal texts (Leu, et al. 2004; New London Group, 1996; Odgers, et al., 2015). A multimodal text can be digital is a combination of modes such as words, sound, image, movement. Based on this understanding, new literacies can be inferred to mean using multiple semiotic channels to make meaning across geo-political, linguistic and cultural margins. It's undeniable that, whatever endeavor an individual engages in today, be it communication, entertainment and trading, he or she is certain to use numerous kinds of multimodal texts.

In this study, despite the significant challenges participants faced in accessing digital

tools, they were motivated to use digital tools to learn and engage in a wide range of activities. They go online on a daily basis to use the Internet to gather information for schoolwork, play video games for entertainment and learning (Gee, 2005; New London Group, 1996; November, 2010; Odgers, et al., 2015; O'Keeffe, et al., 2011; Schaffer, 2006; Wonica, 2013). They navigate social media as an important platform to socialize and communicate with families and friends, for news, information, entertainment, and to participate in social learning communities.

Participants' digital activities help to develop critical 21st-century skills that every adolescent needs to live and succeed in contemporary world. Essential skills participants developed through their digital activities include problem-solving, teamwork, creative and critical thinking, multitasking and goalsetting (Bouffard, 2008; Hoffman & Novak, 1998; Hohlfeld, et al., 2007; Zhao & Frank, 2003). Digital tools also offer them the means of expressing their views on issues that affect them and events around them. For these adolescents, technology not only makes creating content possible, but also the sharing of their work. I learned from my participants that technology can, given consistent exposure to the tools in and outside of school, support academic and future success. I believe that the school system should draw participants' digital literacy practices outside of school and make such practices part of school culture to creating effective teaching and learning environments.

Adolescent Identity in Digital Environments

Digital environments are important to the development of identity in an increasingly digital world. Gee (2005) recognizes video games as a site of identity development, whereby young players interrogate and investigate their hypothetical worlds and meaningfully define and construct their identities. Gee asserts that “video games recruit identities and encourage identity work and reflection on identities in clear and powerful ways” (Gee, 2003, p.51). According to him, playing video games results in three distinct forms of identity: real-world identity, which is the players' identifiable identity in real world; virtual identity, depicting his

identity as a virtual character in the game; and projective, which results from the intersection between his real-world identity and virtual identity.

Through their narratives, I discerned that participants used video games characters to gain power, experiment and fulfil certain of their fantasies in real life. The game system also afforded them the avenue for self-representation by assigning their personal attributes to characters as a way of honing the specific attributes which includes skill set and behaviors. Squire (2006) suggests that, "educators (especially curriculum designers) ought to pay closer attention to videogames because they offer designed experiences, in which participants learn through a grammar of doing and being" (p.19). Consistent with Squire's assertion, participants' video game-playing allowed to emerge as creative and critical thinkers, problem solvers, and team players as manifest in their stories around massively multiplayer online role-playing games (MMORPGs) and other genre of games.

Similarly, I recognized that social media offered participants site to constantly represent and define themselves. Their self-content creating and sharing practices, including picture posts, comments, status updates and profile page information prompts their capability as co-constructors and co-producers of intellectual property and knowledge (Lenhart, et al., 2005; Livingstone, 2008). Observably, their ability to share self-authored content are enabling and making their voices which have been historically muzzled, heard.

A Common Sense Research (2012) study which investigated the digital lives of 13 to 17-year-olds, suggested that social networking and other digital media platforms make most teens feel confident about themselves and positively shape their ways of thinking. These findings correspond with the lived experiences of participants in this study. Their narratives suggested they are building self-confidence and belief in their abilities using digital tools, and adopting new ways of thinking which are giving them control over their destinies and life events. I observed that, despite living in circumstances of poverty and struggling to survive on

mean household incomes, they are not letting go of hope. They are confident the future holds much promise to them and are assiduously working towards attaining that promise.

To transform learning for K-12 students and promote their healthy self-esteem and a strong sense of identity, the International Society for Technology in Education proposed seven education technology standards (ISTE, 2016). The standards promote technology infusion learning that is student-driven and encourages exploration, creativity and discovery, and capable of enabling student voice and identity development. The standards are:

- **Empowered Learner -** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
- **Digital Citizen -** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.
- **Knowledge Constructor -** Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
- **Innovative Designer -** Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.
- **Computational Thinker-** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

- **Creative Communicator-** Students communicate clearly and express themselves creatively for a variety of purposes
- **Global Collaborator-** Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams.

The standards are instructive, giving their emphasis on real-world problem-solving, academic autonomy, collaborative learning, communication, creative tasks, and student agency. My participants typically characterized school as a disempowering experience. This is understandable because schools primarily thrive on rote memorization of facts and treat students as passive learners (Prince, 2004; Metzger, 2015; Robinson, 2006). As passive learners, students are deskbound and voiceless. Metzger (2015) argued that, "The hierarchical structure of the educational system places adult educators in the dominant, expert, one-up position while students are groomed to be in submissive, passive, one-down position, leading to a culture of oppression" (p. 32). Metzer further observes, "School attempts to keep students in these prescribed roles by using excessive control, threat of punishment, and coercive tactics" (p.32).

There was frustration and anger in at least two of the participants' faces as they discussed their school experiences. Rather than being passive learners, participants yearned to be active participators in their own learning. Participants desired school to be a natural extension of their experiences outside school, using digital tools to assume roles not only to engage in multiple literacies, but to explore careers. I noticed across their narratives, that as they interact with digital tools, they were composing their future careers as doctors, filmmakers, animators and photographers (Collins, et al., 1989; Gardner, 1991; Groff & Osterweil, 2009). On their own, my participants are moving toward the seven technology standards cited above (ISTE, 2016) proposed by the International Society for Technology in Education.

Blair (2012) acknowledges the most appealing learning activities to students are "discovery and creation" (p.10), which allow them to act "as explorer (e.g., mathematician, scientist, sociologist) and designer (e.g., author, artist, composer)" (p.10). She described such learning experience as "a liberating shift" (p.10) from the mind-numbing factory style education which is characteristic the traditional classrooms and disempowers student agency (Freire, 2002; Johnson, 2006). New literacies ethos, including communities of practice, affinity groups, and the cognitive apprenticeship model of education (Gee, 2006; Rogoff; 1990; Lave & Wenger, 1991; Brown, 1998) have increasingly advocated learning by doing, mentoring and personal reflection.

Identity and Research

I framed this study with Gee's (2000) notion of identity as a way of understanding my participants' experiences. Identity is dialogic and fluid, and as such, relies on an individual's sense of self as well as the ability to be recognized as a certain kind of person within or outside of a group. Gee (2000) posits four ways of looking at identity: nature, institutional, discursive and affinity group. Nature identity frames identity research as an exploration of biological conditions beyond people's control. Institutional identity research is an exploration of how the power of institutions to shape and individual's identity and the power of the individual to influence the institutions in which a person is involved. Discursive identities frame research as an explorations of interactions among groups and individuals on a continuum of passive ascription by a group or active accomplishment as indicators of belonging to a group. The fourth stance toward identity is that identities arise from participation in affinity groups or spaces, where people share common goals, interests, understandings, and activities. They share discursive characteristics yet also bring their individuality to the group. This taxonomy of different ways of looking at identity allow for rich data interpretation.

When I analyzed my participants' narratives from an institutional perspective or I-

identity, it provides a thoughtful way to examine practices in school that perpetuate the marginalization of low income and minority students and inherently imposes on them identities that prepare them as subordinates and subservient to the whims of the capitalist classes. Within its broader institutional context, school marginalizes poor students through misguided policies, less rigorous curriculum and low-quality, and inadequate instructional materials and facilities. Playing the ostrich, the system touts a deficit view of these students and ascribed their low academic performance to lack of motivation, poor behavior and cultural shortfall. These equity ruses, in turn, diminish students' learning, self-esteem *and* development of clear and positive identity that are fundamental to realizing their aspirations to lead full lives.

From a discursive identity perspective, I could see that my low income and minority adolescent participants are discursively situated in ways that undervalue their contributions, abilities, preferences and chiefly aimed at proliferating hegemonic ideals that rob them of voice and power. The discourses which are mediated through school texts, instruction and stringent rules expose students to a clash of values and cultures. However, to engage in negotiation and construction of identities that could see them evolve as critical thinkers and creative minds, students needs to be exposed to divergent discourses. They are consistently marginalized in schools and virtually excluded from on-line discourse or relegated to the position of one who does not know.

However, it is when I viewed these adolescent narratives from the perspective of affinity identity that I could see the incredible power of wanting to belong. My participants want to be part of the digital age. To do so, they voluntarily sought out and obtained digital access, overcoming enormous economic and cultural constraints. And this access afforded them the opportunities to follow their interests, be more successful in completing school work, and envision a future in which they may achieve economic success. They tried on virtual identities, not only in gaming situations, but also in trying on and imagining themselves in new

roles. And these possibilities gave them hope and inspiration to keep learning.

The first notion relates to the concept of digital natives, a term coined by Prensky (2001a) to describe young people who are raised in a digital, media-saturated world, and acknowledged as being tech-savvy because of their extensive knowledge and use of digital of technologies. Prensky's assumption about the concept is that students who grew up with digital technologies innately pick up digital skills and have empowering learning experiences. He asserts, "Digital Natives are used to receiving information really fast. They like to parallel process and multitask. They prefer their graphics before text" (p.1). Prensky sees digital nativeness as a defining feature of contemporary literacy and later life success.

My participants are not typical digital natives (Prensky, 2001a), created by a media rich environment. These kids exert great effort to cross the Digital Divide (Chakraborty et al., 2005; Hargittai & Walejko; 2008; Molinari, 2012**)** daily, even though their access is limited to a few hours a day and never on weekends. They do not live in a digitally inclusive world, but through this study, I bear witness to their resilience and courage. They are digital natives by virtue of their struggle.

Chapter 7

Conclusion

Research addressing the experiences of historically marginalized children and youths around their use of digital technologies is insignificant. Given that previous researchers tended to explore the subject from the experiences of the general adolescent population, this study focused on the lived-experiences of four adolescents from historically marginalized backgrounds to explore the ways in which their use of digital tools shapes their literacy practices and identities. The participants ranged from 13 to 15 years old and were residents at Lakefield community in New York. The methods for the study comprised interviews, observations, and findings from a prior pilot study, in which two of the participants shared their experiences around video gaming and learning.

The study was explored through narrative inquiry, which is an approach to investigating and understanding lived experiences via "collaboration between researcher and participants, over time, in a place or series of places, and in social interaction with milieus" (Clandinin & Connelly, 2000, p. 20). Analysis of participants' narratives revealed that participants' digital technologies appropriation is related with diverse literacy practices, self-identity, and personal empowerment. The wide range of digital habits participants engage in incorporated socialization, education, communication, and entertainment, thereby providing evidence of their purposive learning. The varied activities showed that participants were not only confident in their use of digital technologies, but were also developing unorthodox and meditative literacies and social practices, which allowed them to interrogate traditional mode of literacy. Participants use of digital tools allowed them to develop them to developed assorted valuable life skills and lessons, which are feasibly transferable to real world contexts.

The study showed that, despite the increased accessibility of low-cost mobile

devices, participants had tremendous challenges in accessing digital technology, both at home and in school. The challenges are major outside of school because their families cannot afford the cost of both computer and Internet access at home. To use computer and Internet outside of school to conduct online research for homework assignments and pursue other digital interests, participants relied on Lakefield Teens Library. This library is a non-profit library within their community that offers computer and Internet access, books, and other informational materials to teens, the majority of whom are from poor and minority households. Nevertheless, the library can be unreliable due to its short hours of operation and closure on weekends and public holidays.

Through the stories told by participants, it was evident that learning either in school or outside of school, while using digital technologies, was an integral part of their daily lives. Their narratives revealed that their use of digital tools, not only allow them access to fresh knowledge and experiences, but also to assume ownership of their learning, gain personal voice, self-esteem, and personal empowerment. The stories they told strongly spoke to my understandings about how well they could use and benefit from the promise of digital technologies. As I listened to each of their stories, the significance of digital technologies as sites of multifarious literacies in the form of situated social practice, incorporating historical, social, and cultural dimensions of human endeavors, became more and more visible to me.

Participants' stories evoked thoughts and questions around how both their school and out-of-school earning experiences could be enriched with improved digital access. If their stories as narrated in this study provoked the attention needed, I pondered how this might resort to intervention by the authorities, and consequently shape instructional approach and educational polices. I thought of the possibility of the stories leading to such outcome, whereby the prevailing *digestive* or *banking* notion of literacy in school was

modified to accommodate the living experiences of historically marginalized young people outside of school. Therefore, this could allow them to compose their lives in ways that were meaningful to them. Another thought on my mind was the possible collaboration among their parents, teachers, school administrators, policy makers, local organizations, and so on to support the visions pertaining to who they desired to become.

Summary

Further qualitative research is suggested to increase insights and perspectives on the phenomenon of digital technologies access and usage by historically undeserved young people and the impact on their lives. In summary, this study suggests the following directions for educational policy:

- Educators Educators and policy makers should recognize that the digital divide exists and that without equitable digital access, adolescents from historically marginalized backgrounds potentially face face increasingly complex challenges that can undermine their opportunities for achieving their fullest potential in life.
- Help children from low income and minority households gain equitable access to the kind of education that can bring social change. Schools need to offer these students more access to digital technology in both classrooms and computer labs and promote their use of technology to its fullest capacity via incorporation across subject areas.
- The school system should collaborate closely with local entities, including libraries, non-profits and after-school programs to increase computer and Internet access.

Appendices

Appendix A

IRB Approval

UNM | Office of the Institutional Review Board

DATE:	April 7, 2016
REFERENCE #:	04315
PROJECT TITLE:	[731057-3] Technologies, Learning and Identities: An Inquiry Into The Ways New Media and Digital Technologies Develop The Literacy Practices of Marginalized Adolescent Learners and Shape their Identities.
PI OF RECORD:	Lucretia Pence, PhD
SUBMISSION TYPE:	Continuing Review/Progress Report
BOARD DECISION:	APPROVED
EFFECTIVE DATE:	April 7, 2016
EXPIRATION DATE:	April 8, 2016
RISK LEVEL:	Minimal Risk
REVIEW TYPE:	Expedited Review
REVIEW CATEGORY:	Expedited review category 6,7
SUBPART DECISION:	D 404
PROJECT STATUS:	Active
DOCUMENTS:	• Continuing Review/Progress Report - IRB Continuing Review Application.pdf (UPDATED: 04/6/2016) • Other - IRB Protocol Deviation Report.pdf (UPDATED: 04/6/2016)

Thank you for your submission of Continuing Review/Progress Report materials for this project. The University of New Mexico (UNM) IRB Main Campus has APPROVED your submission. This approval is based on an acceptable risk/benefit ratio and a project design wherein the risks to human participants have been minimized.

This determination applies only to the activities described in the submission and does not apply should any changes be made to this research. If changes are being considered, it is the responsibility of the Principal Investigator to submit an amendment to this project for IRB review and receive IRB approval prior to implementing the changes. A change in the research may disqualify this research from the current review category.

The IRB has determined the following:

Informed consent must be obtained and documentation of informed consent is required for this project. To obtain and document consent, use only approved and stamped consent document(s).

Children may be involved as participants in this project under Subpart D 404 and permission from one parent/guardian is required and signature is required.

Child assent must be obtained and documentation of assent is required for this project. To obtain and document assent, use only the approved and stamped assent document(s).

Dr. Pence's CITI will expire and will need to be retaken in September 2016, at that time Dr. Pence must affiliate with UNM Main Campus and complete the UNM Main Campus Researchers training.

All reportable events must be promptly reported to the UNM IRB, including: UNANTICIPATED PROBLEMS involving risks to participants or others, SERIOUS adverse events, UNEXPECTED adverse events, NON-COMPLIANCE issues, and COMPLAINTS. All sponsor reporting requirements should also be followed.

The UNM IRB approved the project from April 9, 2015 to April 8, 2016. A continuing review or closure submission is due no later than March 9, 2016. **It is the responsibility of the Principal Investigator to apply for continuing review and receive continuing approval for the duration of this project. If the IRB approval for this project expires, all research related activities must stop and further action will be required by the IRB.**

Please use the appropriate reporting forms and procedures to request amendments, continuing review, closure, and reporting of events for this project. Refer to the OIRB website for forms and guidance on submissions.

Please note that all IRB records must be retained for a minimum of five years after the closure of this project.

The Office of the IRB can be contacted through: mail at MSC02 1665, 1 University of New Mexico, Albuquerque, NM 87131-0001; phone at 505.277.2644; email at irbmaincampus@unm.edu; or in-person at 1805 Sigma Chi Rd. NE, Albuquerque, NM 87106. You can also visit the OIRB website at irb.unm.edu.

Sincerely,

J. Scott Tonigan, PhD
IRB Chair

Appendix B

Assent Form

ASSENT FORM

ASSENT TO PARTICIPATE IN RESEARCH

Research on Learning, Digital Technologies and Identities

1. My name is Daniel Olufemi. I am a doctoral student at the University of New Mexico in Albuquerque, New Mexico.
2. I am asking you to take part in a research study because I am trying to learn more about how you use digital devices and how the kind of device(s) you use help your learning, the way you perceive yourself and your environment.
3. Participants in the research will be adolescents, boys and girls, from racial-ethnic minority backgrounds and from low income families.
4. The locations of the research are Albuquerque in New Mexico and Far Rockaway, New York City, New York.
5. The research is scheduled to begin from this year 2015 and end in the year 2017.
6. If you agree to be in this study, I will conduct interviews with you at your home or preferred location. The interviews will take place in the presence of your parent or legal guardian.
7. I will have one interview session with you with possibility of a second one in order to ask follow-up questions. I will ask you question about yourself, family, education, the activities you engage in with digital technologies and the ways you think benefit from the use of the devices.
8. Each interview session with you will hold for two hours or less. The interviews will be recorded using digital voice recorder.
9. I will also observe and take notes of your online activities or use of digital devices. You will decide which of your online activities or those on digital devices you would want me to observe.
10. In addition, I will look through the work or material you have produced from your online activities or through your use of digital devices, only upon your approval. This may include homework from school, video productions, drawings and writings.
11. I will take pictures or make copies of the work or material for this research.
12. I will not use your real name on anything that I write down in my notes or the report that is produced from your participation in the research. I will instead use a pseudonym to connect you with the information I note down during my interaction with you. Only the pseudonym assigned to you will be used in all documents and final report of this study.
13. The information that you provide, either tape-recorded, on field notes and in documents/artifacts will be kept strictly confidential and carefully stored in a locked cabinet and kept in the principal investigator's office, Dr. Penny Pence, at the University of New Mexico. All information obtained from you will be used for research purposes and will be destroyed after the research is completed and published.
14. If you decide to participate in this research, you will be using the opportunity to share your experience with scholars through my dissertation on ways your use of digital technologies has been of benefit to you. Potential benefits of the study to your child may include giving him/her the opportunity to share his /her experiences with scholars through my dissertation on ways his/her use of digital technologies has been beneficial to his/her learning. Also, it may reinforce his/her interests in the use of new media and digital technologies for developing him/her literacy practices and themselves.
15. You will not receive any monetary reward for participating in the study. You will however, be issued a certificate of participation at the end of the research sessions with you. This will be given to you by this researcher as a special recognition of your contribution to the research.

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Institutional Review Board

16. You may experience a low degree of fatigue during the interview session because of the time frame of two hours. In anticipation of this, you will be offered break time during the interview. You may tell me if you are tired and we can stop for a rest.
17. There is also the possibility that you may experience distress during the interview as a result of talking about your coming from racial-ethnic minority backgrounds and low income families. When this happens, the researcher will stop the discussion on that or end the interview for the day and reschedule another interview date with you. Or, you may tell me that you do not want to continue today. You may choose to not answer specific questions while answering others. The choice of whether or not to answer a question is up to you.
18. If you don't want to be in the research, you don't have to participate, because being in the research is voluntary and there is no penalty for your decision to not be in the study. Not being in the study does not affect your relationship with me, your teacher, your school, or the University of New Mexico.
19. Your will need the permission of your parent/legal guardian before you can participate in the study. Please note that even if your parent says 'yes' to your participation in the study, you have the option to decide not to participate.
20. If you agree to participate and change your mind not to participate any longer, the information you initially provide will be used up till the point of your withdrawal from the research only. Or you may tell me to not use any of your responses or your work.
21. You can ask any questions that you have about the research at any time prior to the beginning and during the research.
22. The principal investigator, Dr. Penny Pence, can be reached through the following telephone number for any questions you may have on the research and this form: (505)238-0647.
23. This researcher (student researcher) can be reached through the following telephone number for any questions you may have on the research and this form: (347)447-9147.
24. You may also wish to contact the office of the Institutional Review Board (IRB) through this telephone contact: (505) 277-2644
25. Signing your name at the bottom of this form means that you agree to be in this research. You and your parents/legal guardians will be given a copy of this form if you have signed it.

_____

Name of Student (Please print)

_____ _____

Signature of Student Date

_____

Name of Researcher

_____ _____

Signature of Researcher Date

Number: 04315
Version: 04/18/2015
Approved: 04/07/2016
Expires: 04/06/2017

Institutional Review Board

Appendix C

Parent/Guardian Consent Form

PARENT/GUARDIAN CONSENT

CONSENT FORM for PARENTS/LEGAL GUARDIANS
Research on Learning, Digital Technologies and Identity

- **INTRODUCTION**
  1. My name is Daniel Olufemi; I am a doctoral student studying under the guidance of Dr. Penny Pence in the Department of Language, Literacy and Sociocultural Studies Department in College of Education at University of New Mexico, Albuquerque, New Mexico. I have invited your child to participate in a research study that I am conducting towards contributing to the body of knowledge in the field of study. The results of this research will be used for the dissertation I am writing for my Ph.D. degree and may be published at a later date. Participants in the research will be adolescents, boys and girls, from racial-ethnic minority backgrounds and from low income families. I will be interviewing and observing participants for the research at two sites in Albuquerque, New Mexico and Far Rockaway, New York City in New York. The research is scheduled to begin during 2015 and end in the year 2017. Your child indicated that s/he would like to volunteer in the research.

- **PURPOSE OF THE STUDY:** The purpose of this research is to learn about how young learners gain access to and use digital technologies. Through the research I hope to learn the ways digital devices support adolescents, especially those from low socio-economic backgrounds and racial-ethnic minority backgrounds, in their learning.
  2. If you agree for your child to be in the research, I will conduct interviews with him/her at your home or preferred location in your presence or that of any person designated by you.
  3. I will have at least one interview session with your child with the possibility of another interview session to ask follow-up questions. Each interview session with your child will take two hours or less.
  4. I will ask your child to tell me about him/herself, family, education and to explain his/her experiences on the kinds of digital devices he or she uses, how he/she obtained the devices and the activities he/she engages in on the devices. I will also ask about what your child thinks about the effects of his/her use of digital devices on his/her learning, person and environment or society.
  5. The interviews will be recorded using digital voice recorder.
  6. I have attached sample questions to this form in order to provide you an idea of the kind of questions I will ask your child during the interview.
  7. You and your child will have the opportunity to review his/her responses to the interview questions and make necessary changes or corrections after I have transcribed the interview and before any parts of it are published in my dissertation or other publications. You may be given a copy of the dissertation at the conclusion and approval of the study by my university, if you request for it from me.
  8. Apart from the interview, I will observe and take notes of your child's online activities or use of digital devices. Your child will decide which of his/her online activities or his/her activities digital devices I am allowed to observe.
  9. In addition, I will look through the work or material your child has produced from online activities or through his/her use of digital devices, only upon your approval. This may include homework from school, video productions, drawings and writings.
  10. If you and your child agree, I will take pictures or make copies of the work or material produced from his/her use of digital devices, for this research.

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Approved: 04/07/2016
Expires: 04/06/2017
Institutional Review Board

11. All information obtained from your child will be used for research purposes and will be destroyed after the research is completed and published.
12. I will not ask your child to participate in any kind of activities that may physically harm him/her.
13. Your child will not receive any monetary reward for his/her time and participation in the research. However, your child will be issued a certificate of participation at the end of the research sessions with him/her. The certificate will be issued to your child by this researcher as a special recognition of his/her contribution to the research.

POTENTIAL RISKS AND DISCOMFORTS

14. Your child may experience a low degree of fatigue during the interview session possibly due to its long duration of two hours. In anticipation of this, your child will be offered break time during the interview. Your child may tell me if he/she is tired and I can stop the interview for him to take a rest.
15. There is also the possibility that your child may experience distress during the interview as a result of talking about his/her coming from racial-ethnic minority backgrounds and low income families. If this happens, the researcher will stop the discussion on that or end the interview for the day and reschedule another interview date with your child. Your child may also tell me that he or she does not want to continue the interview that specific day. He or she may also choose to not answer specific questions while answering others. The choice of whether or not to answer a question is up to your child.

- **POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY**

16. Your child's participation in this study will give him/her the opportunity to share his /her experiences with scholars through my dissertation on ways his/her use of digital technologies has been beneficial to his/her learning. This may probably encourage other young learners to try out things your child have successfully done with the use of digital technologies.

- **CONFIDENTIALITY**

17. Your child's real name will not be used on anything that I write down in my notes or the report that is produced from his/her participation in the research. I will instead use a pseudonym to connect your with the information I note down during my interaction with him/her. Only the pseudonym assigned to your child will be used in all documents and final report of this study.
18. The information that your child provides, either on recorded tapes, field notes and documents/artifacts will be kept strictly confidential and carefully stored in a locked cabinet and kept in the principal investigator's office, Dr. Penny Pence, at the University of New Mexico. All information obtained from your child will be used for research purposes and will be destroyed after the research is completed and published.

- **PARTICIPATION AND WITHDRAWAL**

19. Your child will need your permission before he/she can participate in the study.
20. If you give your consent for your child to participate, your child may choose to participate in this study or not. Even after your child has agreed to participate, he may still withdraw at any time without penalty, because being in the research is voluntary. Not being in the study does not affect your child's relationship with me, his teacher, his school, or the University of New Mexico. You may also withdraw your child from the study at any time.

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21. If your child agrees to participate and change his/her mind not to participate any longer, the information he/she initially provide will be used up till the point of his/her withdrawal from the research only. Or your child may tell me to not use any of his/her responses or work.

- **IDENTIFICATION OF INVESTIGATORS AND REVIEW BOARD**

22. If you have any questions or concerns about the research, please, feel free to contact the principal investigator of the research, Dr. Penny Pence, at (505)238-0647 or you may contact me, Daniel Olufemi, at (347)447-9147. You may also wish to contact the Office of the Institution Research Board Office (IRB) through this phone number: (505) 277-2644

- **SIGNATURE**

1. Signing your name at the bottom of this form means that you agree to your child's participation in the research.

SIGNATURE OF PARENT/LEGAL GUARDIAN

(I understand the procedures described above. The expectations from my child have been clearly stated and understood. I give permission for my child to participate in the research. I request a signed copy of this form).

_____
Name of child (please print)

_____
Name of Parent/Legal Guardian (please print)

_____ _____
Signature of Parent/Legal Guardian Date

SIGNATURE OF INVESTIGATOR

(In my judgment the participant is voluntarily and knowingly providing informed consent and posses the legal capacity to give informed consent to participate in this research study).

_____
Name of child (please print)

_____
Name of Researcher

_____ _____
Signature of Researcher Date

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