

Abstract

Title of Dissertation: ACTIVATING TECHNOCAPITAL: A CASE
STUDY OF MARGINALIZED MIDDLE
SCHOOL YOUTHS' EXPERIENCES WITH
INFORMATION COMMUNICATION
TECHNOLOGY.

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This case study explores ways that socio-cultural and environmental factors influence the technological experiences of marginalized, underrepresented youth at an urban summer learning program, which supports Science, Technology, Engineering, and Mathematics (STEM) and environmental sustainability education. The study specifically explores the socio-cultural and environmental aspects of students' experience with digital literacy/ information communication technology (computer based and mobile technologies), and the pedagogical practices applied by educators (teachers, family members, and peers) that influence the students' experiences with digital learning over the period of eight weeks. The principal focus is on eight middle school students

ranging from nine to twelve years of age who reside in an urban environment with their parents/caregivers. In efforts to better understand the experiences of the students, the focus is shared (but not centered) on the parents/caregivers, educators, and volunteer community members who contribute to the students' perception and use of technology.

A major finding of the study is that community-embedded resources, what have been referred to in the literature as funds of knowledge or community cultural wealth, can play a positive role in shaping students' experiences with technology, especially when students, parents, and educators use those resources to create culturally relevant learning experiences that contribute to building technocapital. In general, the findings address beliefs and contextual ecological factors that contribute to the appearance and activation of social and cultural capital in the technological practices of marginalized youth. The accounts of youth and parent perspectives uniquely display the ways the funds of knowledge and community cultural wealth act as social and cultural capital. The participant stories present how the networks of the participants' parents and community contribute to social connectivity and the awareness of civic participation in both the exosystem and mesosystem of their lives.

Overall, the findings present an evidence-based contribution to further support the need to understand and advocate for funding and the development of policy to address: 1) racial/ethnic and socioeconomic differences in education; 2) the positive processes by which cultural resources in the communities of marginalized youth are converted into social and educational advantages; and 3)

increasing knowledge and utility of the various forms of capital embedded in moderate-to-low income, non-majority communities that play a positive role in youths' motivation to utilize ICT and develop digital literacy skills that increase productivity and achievement.

Keywords: underrepresented youth, supplemental learning program, information communication technology, digital learning, social capital, cultural capital, funds of knowledge, community cultural wealth.

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COMMUNICATION TECHNOLOGY.

By

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Dedication

Jasper, Nasirah, and Aharon thank you for being my Rock, my Wisdom, my Love, Laughter, and Strength. You three have been with Mommy through every course of this journey and with the Most High and in his timing, there is nothing good that we cannot do, especially together. We are One and I will always love you. Thank you for your patience with me, support for me, and support for one another. Mom, my first teacher, coach, love, and best friend ~ thank you for your many sacrifices and teaching me to persevere, be courageous, responsible, and the importance of aiming to make a difference. Grandma, my source of inspiration, laughter, and always my sense of comfort, stability, and home. Thank you all for being with me this part of the journey, this dissertation is dedicated to you.

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Chapter 1

Introduction

Because technology provides an enhanced ability to be in an active mode of learning anywhere and anytime, information technology can provide youth with new and valuable opportunities to learn. Learning with technology can emphasize modes of access for students to pursue their own interests and goals in which they can find information on practically any topic, at any time, and communicate with others anywhere. Often, for various reasons, youth may not have the ability to be physically exposed to new environments, ways of thinking, learning, living, and being alive at a higher level of consciousness. However, using technology to access information such as ideas about places, events, people, and culture enables youth to have exposure that is more likely to lead to interests in life-enhancing opportunities.

In my own experience, technological access to information has expanded my learning opportunities empowering me to find a place and space to grow, achieve, and have significance. So, what (then) does this mean to marginalized youth who may also be trying to learn; learn what matters, learn how and what to apply, learn what fits – and where they fit so that they can achieve and feel significant as well? In what ways do the aspects of identity, habitus, and class ethos affect how marginalized students learn and achieve with digital technology? Do certain attitudes about learning affect a student's achievement regardless of whether technology supports their learning or not?

Out of concern for the answers to these questions, I desired to learn and understand the technological experiences of underrepresented youth to identify the best possible means for integrating technology effectively into their learning environments, in efforts to apply and increase capital building opportunities. Both learning and technology use involve values, beliefs, meanings, embodiment, modes of communications, and interpretations that vary significantly across cultures. As technology can enhance lessons, reinforce what students are learning, and inspire creativity, it is pertinent to consider students' cultural ways of learning and the intersections of culture and technology that can enhance learning. In the roles of learning and technology use, there appears to be a potential partnership that should not be neglected. Especially considering that we live in a timeframe that seems to be in a continual process of becoming increasingly technological. The access, exposure, and flows of information increases opportunities for border-crossing experiences that are likely to contribute to increased modes of capital potentially yielding success and achievement.

In both the roles of teaching and technology, the aim and design are to support, facilitate, and guide the learner. The facilitation of learning seems to require an awareness and knowledge of the facilitator and student's identity, motivations, abilities, background, and experiences. Understanding the participants' "habits of heart, mind and associations" (Finkelstein, 1991; Finkelstein, Pickert, Mahoney & Barry, 1998) or in other words, the relativity of their "habitus" (Bourdieu, 1986; Bourdieu, 2000), or technodisposition

(Rojas, Straubhaar, Roychowdhury, & Okur, 2004) towards the application of learning technology could possibly: 1) provide insight into a place/places of identity in technology use; 2) deepen our understanding of how to awaken a desire to learn and achieve by students; and 3) increase our knowledge about how to facilitate empowerment in the student learning space. Having a deeper understanding of cultural factors that relate to how educators and students use technology is significant for the effective integration and use of technology in learning environments.

This case study explored how socio-cultural and environmental factors inform the way underrepresented students make meaning of technology and digital literacy at a summer learning program hosted at an urban community center, where the summer learning focus is related to topics and careers associated with Science, Technology, Engineering, and Mathematics (STEM) and environmental sustainability. More specifically, this study investigated the ways “funds of knowledge” or “community cultural wealth” – i.e., social and cultural resources embedded in the social networks and cultural understandings of a community – contribute to how low-to-moderate income, mostly African American youth make sense of information communication technology (ICT) and develop digital literacy skills to learn about and relate to their changing environment. In addition, this study investigated the influence of pedagogical practices of educators/staff in a supplemental learning environment and explored the perceptions and roles of parents to form a

better understanding of socio-cultural and environmental factors influencing the beliefs and behaviors of youth involved in the study.

The frameworks of social reproduction theory (SRT), critical race theory (CrRT), and cultural reproduction theory (CuRT) are used to elucidate the ways values, beliefs, and practices impact social identity and the role of community embedded resources in the youths' motivation to use technology and vice versa, how the productive use of technology impacts their social identity and access to different forms of community embedded resources, especially social and cultural capital. The eclectic approach of using various theoretical frameworks aids in the redefining of key concepts such as person, agency, power, social capital, and cultural capital and for understanding how discourses of race operate within social structures. The study takes into consideration the significance of whether, how, and why, certain aspects of social identity and cultural practices related to learning emerge for students in a technologically enhanced environment and the ways in which students engage and experience a connection to the summer learning program.

Purpose of the Study

Access to technology has changed over the years. Schools and afterschool programs offer computer access across most sectors of society. However, wider access to technology has not led to a wider range of participation in computing nor improved the educational outcomes for marginalized groups (DiSalvo, 2012; Hargittai & Hsieh, 2013; Scott & White,

2013). Whereas much of technology and digital literacy research speaks to the concepts of the digital divide or digital/social inequity, such as, the existence of differences in access and use between mainstream and marginalized groups (Hargittai, 2008; Warschauer, 2002; Warschauer, 2003; Warschauer, Knobel & Stone, 2004) the literature rarely speaks to ways in which socio-cultural and environmental matters shape differences in how low-income and/or urban underrepresented youth use technology for production, creativity/design, and learning in comparison to their more affluent and/or advantaged counterparts (Barron, Walter, Kennedy-Martin, & Schatz, 2009b; Eglash, Gilbert, Taylor, & Geier, 2013; Hargittai, 2008; Hargittai & Hinnant, 2008; Scott & White, 2013; Warschauer, 2003).

Past research has disregarded the critical social processes that affect how the introduction of a computer and/or internet access in the home or school can influence academic outcomes. Moreover, studies rarely focus on how underrepresented youth use ICT, particularly the social processes that might influence use, such as their peers', their parents', or teachers' Internet skills, or any training or support available (via community) prior to or after a school experience (Hargittai & Hsieh, 2013; Tondeur, Sinnaeve, van Houtte, & van Braak, 2010). This study considers these aforementioned socio-cultural and environmental matters associated with underrepresented youths' use of technology and how the culturally relevant introduction of computer and internet access into sites of community (i.e., home, faith affiliated space, school, community, etc.) can influence learning and development.

Beyond Deficit Discourse

Studies have been limited in exploring how socio-cultural and environmental factors – specifically, local funds of knowledge or community cultural wealth – influence youth social identity regarding ICT and how ICT can be used to promote educational achievement (Dixon-Roman, 2012; Goldenberg, 2014; Roscigno & Ainsworth-Darnell, 1999; Yosso, 2005). Even more so, few studies have attempted to identify and understand how various forms of capital, embedded in moderate-to-low income, non-majority communities, can play a *positive* role in youths' motivation to utilize ICTs and develop digital literacy skills that increase productivity and achievement (Livingstone, 2012; Warschauer, 2002; Warschauer, 2003). While many studies have shown that cultural and social factors contribute to educational inequality, few studies have examined the positive processes by which social and cultural resources in the communities of underrepresented youth are converted into educational advantages (Harry & Klingner, 2007; Lareau & McNamara, 1999). Rather, a deficit discourse has dominated the literature on underrepresented youth and educational achievement and underrepresented youth and ICT; typically referencing “the lack of” resources, lack of participation and the lack of interest or motivation found in the homes and communities of underrepresented youth (Hohlfeld, Ritzhaupt, Barron, & Kemker, 2008; Mayfield, 2014; Noble, 1990; Ogbu, 1978; Ogbu, 1995b; Roscigno & Ainsworth-Darnell, 1999; Scott & Clark, 2013; Scott, Husman, & Lee, 2011; Stinson, 2006).

While studies show that economic forces and cultural factors can negatively impact the academic performance, particularly in STEM education, and the ICT engagement of youth from underrepresented ethnic groups (Ahn et al., 2012; Bondima, 2004; DiSalvo, 2012; DiSalvo & Bruckman, 2010; Eglash et al., 2013; Foster, 2004; Goldenberg, 2014; Hatley, 2011; Mangino, 2013; Santo, Ferguson, & Trippel, 2010; Sheridan, Clark, & Williams, 2013; Simon, Kinnunen, Porter, & Zazkis, 2010), there is reason to believe that local funds of knowledge or the cultural wealth of communities can be leveraged to promote more effective ICT engagement and technocapital (i.e., the competencies and resources of an individual or group that empowers technology use) of underrepresented youth.

Culturally Responsive or Relevant Pedagogy

The results of this exploration are intended to support capital building efforts to encourage underrepresented youth to be innovative users, designers, and producers of ICT. Building on Bronfenbrenner's ecological theory, consideration is given to the environmental associations of the youths' ecology and the interdependency between the youth and environment that can produce positive developmental change (Barron et al., 2009b; Eglash et al., 2013; Lerner, 1991; Rogoff, 2003). Moreover, this study is designed to contribute to a body of knowledge related to technology use by underrepresented youth, specifically how the environmental associations and the resources embedded in their communities influence the use of technology, including how using digital technology can shape the social

identity of underrepresented youth. While specific groups of low-income, minority, and/or underrepresented students often fall on the margins of representation in terms of digital literacy and ICT utility and productivity, some scholars believe that culturally relevant or responsive education can contribute to the successful adoption and use of ICT (Aikenhead & Jegede, 1999; Eglash, Bennet, O'Donnell, Jennings, & Cintorino, 2006; Hatley, 2011; Rojas et al., 2004; Scott, Aist, & Hood, 2009; Scott, Husman, & Lee, 2011; Scott & White, 2013; Sheridan et al., 2013).

The terms culturally relevant and culturally responsive are often used interchangeably when describing pedagogy that incorporates lived lives or experiences of students into instructional opportunities. Ladson-Billings (1994) described culturally relevant teaching as “a pedagogy that empowers students intellectually, socially, emotionally, and politically by using cultural references to impart knowledge, skills, and attitudes” (pp.17-18). Educators that participate in culturally relevant education essentially aim to connect the students’ home and school experiences, while meeting the goals and expectations of local, district, and state curricular requirements. This method of learning intertwines the backgrounds, knowledge, and experiences of students – what can be referred to as local funds of knowledge or community cultural wealth – to inform the educator’s lessons and methodology.

As shared by Eglash et al. (2013), the failure to incorporate cultural and social dimensions in educating youth, particularly in areas such as Science and Technology, can have detrimental consequences throughout

society, not just for underrepresented youth. For example, consider the outcome of the 2008 economic collapse, if Math and computing professionals who were responsible for the complex investment schemes had been trained to think about socially sustainable economics as opposed to boosting profits, the collapse would have been less likely to occur (Eglash et al., 2013).

Incorporating cultural and social considerations into lessons can help students make broader connections to society in general and their communities; these forms of learning opportunities can challenge dominant societal narratives that promote social and economic inequalities, as well as promote greater consideration of the collective good and social well-being.

Pedagogy that critically considers dominant societal narratives, such as myths about cultural determinism and myths about genetic determinism, may also promote better educational opportunities for underrepresented youth and more desirable social outcomes (Selden, 1999; Selden, 2007). Challenging these myths requires culturally relevant and responsive educational practices and opportunities, especially for underrepresented youth from low-to-moderate income and minority communities. Education that leverages culture-based resources derived from a student's heritage (conveyance through ancestry) or vernacular culture (conveyance through one's local and social networks) has been shown to heighten students' ability to successfully navigate and problem solve in academic environments (Chavous et al., 2003; Oyserman, Gant, & Ager, 1995) and aids in dispelling myths of genetic and cultural determinism.

Building on Bronfenbrenner's ecological theory and Ladson-Billings' (1995) culturally relevant teaching theory, this research also considers the contextual associations of the youths' ecology and provides information about the interdependency between the youth and environment that can produce developmental change (Barron et al., 2009b; Eglash et al., 2013; Lerner, 1991; Rogoff, 2003). Without research-centered examples showing the effectiveness of culturally relevant and responsive computing exercises, opportunities to impact the inclusion of more urban youth in the technological pipeline will remain limited (Scott & Clark, 2013). To better understand technology use by underrepresented students, the application of race and gender theoretical frameworks in research can provide indicators for how technology impacts learning and the types of interaction likely to impact computation production (DiSalvo, 2012). As well, past studies have indicated that design processes benefit when developers are from a wide range of backgrounds, concerns, and life experiences leading to greater empathy with users' needs (Barron, Martin, & Roberts, 2007; Pinkard, 2000).

Social vs. Technological Determinism

As an exploratory study, the research conducted in this study considers the complexities of social vs. technological determinism, i.e., the intricacies of social forces influencing how one uses technology in comparison to how technology may and can be a force driving the culture, and explores the relationship of cultural factors and media technologies that

could be beneficial to youths' academic achievement (Barron et al., 2009b; DiMaggio, Hargittai, Celeste, & Schafer, 2004; Scott et al., 2009). Education technology experts, such as Warschauer (2003) and Livingstone (2012), have discussed whether or not digital literacy and/or ICT should be considered as simply tools for learning in which the task is to train children in their use and evaluate the benefits of a range of outcomes and/or whether digital literacy and ICT are more relative to a fundamental transformation in the 'learning infrastructure' in which the relations between pedagogy and society, educator and student, knowledge and participation, should be reimaged and revised. Realigning relevant pedagogical practices can be a cultural shift that may require educators, parents, and administrators to rethink and be more creative in approaches to learning and teaching, especially with the increasing use of technology.

The term 'digital native', coined by Marc Prensky (2001), is not fully inclusive or representative of all youth born during or after the introduction of digital technologies. Prensky (2001), a game designer in education and learning who dedicates himself to eliminating the digital divide in learning worldwide, described "today's student" as youth from kindergarten through college who are considered as the first generation to grow up with a new technology of which they have spent "their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age" (p.1).

Prensky's (2001) homogenous generalization of "today's student" seems limited and not truly inclusive of all students currently within our American school systems, public and private. This perception of "today's student" growing up with and around technology can lead one to ponder whether the quality of each student's exposure is similar, relevant, and relatable across cultures. It can also bring one to comparable questions relating to whether all students' recreational regard for technology can easily transfer to instructional use in the classroom, especially for those who may not be representative of 'digital native' status as defined by Prensky (DiSalvo, 2012; Mayfield, 2014; Scott & Clark, 2013).

From a generational context, if youth are framed as digital natives, all youth may not seem to have the same quality of exposure or recreational regard for technology. Issues of access, utility, equity, and participation that are related to the "digital divide" still seem to exist in some segments of society (DiMaggio et al., 2004; Hargittai, 2010; Hargittai & Hsieh, 2013; Hargittai & Walejko, 2008; Haythornthwaite & Rice, 2006; Norris, 2001; Scott & White, 2013; van Dijk, 2005; Vigdor & Ladd, 2010). For 'today's students', who do meet the criteria of a 'digital native', a culture shift in education has occurred which is more likely to include students who are used to receiving information quickly, often parallel processing and multi-tasking (Davidson, 2011; Prensky, 2001). These 'digital natives' are reported to prefer graphics before text, random access (e.g., hypertext), being in a networked

environment, instant gratification/frequent rewards, and games over “serious” work (Prensky, 2001).

The increasing use of digital technology is deemed as a cultural shift in which there is a divide between “today’s student” and today’s adults.” Adults who are not technologically astute are considered as digital immigrants, speaking a language related to a pre-digital age. Due to this shift, educators that are deemed as digital immigrants may find it necessary to consider utilizing pedagogical practices that can be somatically and experientially relevant to their students (Prensky, 2001). Although this study highlights the narratives of the youth, the adults in their lives are also relevant because of the various styles of mentoring, parenting, and teaching which reflects the values, beliefs, and skillset impacting the youths’ experience with technology. The incorporation of the adult, deemed a “digital immigrant” or not, is meaningful to identifying critical roles parents, educators, and peers can play in brokering and encouraging new opportunities, particularly by providing students with access to community embedded resources (Barron, 2014; Barron, Martin, Takeuchi, & Fithian, 2009a; Barron et al., 2009b; boyd, Hargittai, Schultz, & Paslrey, 2011; Desena, 2006; Hohlfield, Ritzhaupt, & Barron, 2010; Kong & Li, 2009; Prensky, 2001; Stinson, 2006).

The sample of youth in this study are not widely represented in a society that predominantly uses information communication technology in everyday life to work, play, learn, teach, and construct relationships. These youths are a sample of “today’s students” who, on the margins of society, do

not fully represent the generational concept of a digital native for socio-cultural and economic reasons. Yet, the background and experiences of these participants can provide insight into how to facilitate impactful use of technology for education achievement. While on the margins, underrepresented students are traversing socio-cultural boundaries of time and space and represent possibilities for a wealth of diversity in youth engagement with digital media and the distribution of youth media practices (Ahn et al., 2012; Hargittai & Walejko, 2008; Hassani, 2006; Jenkins, Purushotma, Clinton, Weigel & Robison, 2006; Warschauer et al., 2004). The exploration of social and technological interactions within the marginalized youth's ecology allows for educators and students to understand relationships and occurrences that transform social interaction, peer-based learning/achievement, and new media literacy.

The study is an examination of how underrepresented youth use new media; its' provision of on-demand access to content, interactive user feedback, and creative participation (Barron et al., 2009b; Hidi & Renninger, 2006; Ruiz, 2013). Studies show that regardless of the inequities and whether or not a youth acquires a computer and/or Internet access at home, youth are still on some level participants in a shared "networked public culture" where social media, online media distribution, and digital media production are deemed as commonplace amongst peers and in everyday school contexts, increasing the potential of technology to be a powerful counter weight to social determinism (Debell & Chapman, 2006; DiMaggio et

al., 2004; Hargittai, 2008; Jackson et al., 2006). Concerns related to new media ecology and how it can influence learning and literacy shapes parents' and educators' apprehension about youth maturing in a digital American society (Barron et al., 2009a; Hohlfield et al., 2010; Ito et al., 2009a; Ito et al., 2009b; Zhao & Frank, 2003,). While such concerns are reasonable, new media technologies also create new opportunities for learning due to on-demand access, interactive user feedback, and creative participation. This study explored how new media technologies, when situated in culturally relevant and responsive contexts, can become a *positive* force for underrepresented youth development and achievement.

Guiding Constructs for Study

“Funds of knowledge” and “community cultural wealth” are guiding constructs for the study. As I will explain, social and educational theorists developed these constructs in response to the predominant deficit discourse, which often identified the cause of low or under achievement as part of the socio-cultural environments in which underrepresented youth lived and learned. Unlike deficit perspectives, funds of knowledge and community cultural wealth identify the strength and potential utility of socio-cultural resources that can be found in the home and communities of underrepresented youth. Building on these constructs, I identify, and in some cases, reinterpret other socio-cultural constructs, specifically social and

cultural capital, which help in exploring how the underrepresented youth in this study use and make meaning of their experiences with ICT.

Funds of Knowledge

The term ‘funds of knowledge’ stems from the literature documenting the positive socio-cultural resources of working-class Latina/Latino families and is a direct challenge to deficit perspectives common in depictions of Latina/Latino and other low-income families (Rios-Aguilar, Kiyama, Gravitt, & Moll, 2011). Rios-Aguilar et al. (2011) share that much knowledge is frequently exchanged through social networks with other households within families and communities, but the power dynamics within educational settings usually diminishes the usefulness or value of this knowledge for student learning. In other words, the power structure and social hierarchies within schools affect the conversion or transformation process of knowledge into capital (Rios-Aguilar et al., 2011); what could be a valuable resource for students and teachers too often becomes irrelevant or even a deficit for students.

Writers who have contributed to this literature argue that the broad corpus of knowledge – funds of knowledge – available to underrepresented children can be a powerful resource for promoting development and achievement – if, that is, schools acknowledge the legitimacy and usefulness of these forms of community knowledge through culturally responsive pedagogy. In this way, funds of knowledge identify important socio-cultural resources, which, from the perspective of capital, can be thought of as

various forms of capital available to students, parents, and their teachers to promote development and achievement. Local funds of knowledge, created through the dynamic commonalities of culture experienced in students' daily life, can be converted into different forms of capital, such as human capital (knowledge and skills), social capital (social networks), cultural capital (socio-cultural norms), linguistic capital (communication skills), and symbolic capital (honor or prestige). Schools can facilitate the transformation of funds of knowledge, created through the dynamic commonalities of culture experienced in students' daily lives, to forms of capital that can be used to promote development and achievement. Drawing from this literature, I identified socio-cultural resources that can be derived from funds of knowledge to help underrepresented youth use ICT more productively. Doing so can help educators and community members understand better how to draw on various forms of socio-cultural resources embedded within communities to create better educational opportunities and outcomes for underrepresented youth.

Community Cultural Wealth

Yosso (2005) conceptualized the term 'community cultural wealth' as part of critical race theory's challenge to the traditional interpretation of cultural capital (a socio-cultural resource limited to advantaged communities). Like 'funds of knowledge', this concept reframes the deficit view of communities of color as places filled with cultural poverty and disadvantages to a non-deficit view of communities of color as places possessing an array of

cultural knowledge, skills, abilities, and social networks. Writers who utilize the term community cultural wealth break down cultural capital into unique forms of communal resources, resources often overlooked by writers who examine cultural capital from the perspective of the dominant class.

Yosso (2005) shares that community cultural wealth is nurtured by multiple forms of capital, some of which are unique or especially important in the communities of underrepresented youth. These forms of capital include aspirational, navigational, social, linguistic, familial, and resistant capital (Yosso, 2005).

- 1) Aspirational capital relates to one's ability to maintain future hopes and dreams in the face of oppositional barriers whether perceived or real. This entails imagining possibilities and opportunities beyond one's present circumstances, even when lacking the objective means to acquire and meet goals. Citing Gandara (1995), Yosso argues that these imaginings cultivate a culture of opportunity that can represent the creation of history that would break the links between parents' current occupational status and their children's future academic attainment.
- 2) Linguistic capital refers to intellectual and social skills acquired through communication experiences in more than one language and/or style. It also refers to one's ability to communicate via visual art, music, or poetry. Students develop and utilize varying language registers or styles to communicate with

different audiences. Often these youths gain multiple social tools of vocabulary, audience awareness, cross-cultural awareness, literacy and Math skills, metalinguistic awareness, teaching and tutoring skills, civic and familial responsibility, and social maturity.

- 3) Familial capital is a form of cultural wealth that refers to the cultural knowledge nurtured amongst families that carries a sense of community history, memory, and cultural intuition. It expands the traditional western construct of family to the extended family in the engagement of a commitment to community well-being. Familial capital is a form of community consciousness that is fostered within and between families and through mechanisms such as sports, school, religious gatherings, and other social community settings. Familial capital is often referred to as 'communal bonds' in the African American communities and 'funds of knowledge' within Mexican American communities.
- 4) Social capital refers to networks of people and community resources that aid in the provision of influential and emotional support to navigate through society's institutions. Social capital has been used to attain education, legal justice, employment, and health care. African Americans, even while enslaved,

created and maintained social networks that could be used to exchange resources and accomplish tasks.

- 5) Navigational capital refers to the ability to traverse successfully social institutions not created with communities of color in mind. Despite institutional constraints, navigational capital promotes individual agency and often extended social networks, which facilitate how members of communities of color navigate through places and spaces such as schools, the job market, and the health care and judicial systems.
- 6) Resistant capital refers to knowledge and skills developed as a result of oppositional behavior that challenges inequality (Freire, 1970, 1973; Giroux, 1983; Ogbu, 1978). The preservation and transmission of the multiple dimensions of community cultural wealth is a principle of resistant capital. When youth are helped to recognize the structural nature of oppression and are motivated to work towards social and racial justice, the resistance or varying forms of oppositional behavior takes on a transformative character, creating transformative resistant capital that can be employed to change oppressive structures (Solorzano & Yosso, 2002; Villena & Deyhle, 1999).

Per Yosso (2002), these forms of socio-cultural resources can be found, to varying degrees, in the communities in which underrepresented youth live and learn.

Both terms – funds of knowledge and community cultural wealth – portray underprivileged communities as rich with a range of socio-cultural resources, only these resources are often neglected by social policies and educational practices that advantage privileged communities. I focus on two types of socio-cultural resources – social capital (social networks within communities) and cultural capital (cultural norms and expectations). For each of these forms of capital, and in contrast to the prevailing deficit literature, I emphasize their potential to positively influence how underrepresented youth use and understand ICT. Particularly, in the case of cultural capital, I am interested in Yosso's (2005) more nuanced distinctions of aspirational capital, linguistic capital, familial capital, navigational capital, and resistant capital, and whether these more nuanced forms of cultural capital play a role in how underrepresented youth use and understand ICT.

Overview of Study

This qualitative ethnographic case study explores the educational and developmental utility of socio-cultural resources, particularly in the form of social and cultural capital, from a 'funds of knowledge' and 'community cultural wealth' conceptual framework. More specifically, this study examines how underrepresented youth, parents, and adults activate (or fail to activate) socio-cultural resources in their use and understanding of ICT as part of a summer educational program in an urban setting. My primary interest is in the ways that the participants' cultural views, understandings, and norms, i.e.,

“the habits of heart, mind, and association” (Finkelstein et al., 1998) or, in other words, how their “habitus,” i.e., skills, dispositions, desires (Bourdieu, 1986; Bourdieu, 2000), related to social and cultural capital intersect with how underrepresented youth use and learn with technology.

The study explores issues related to hierarchies of power and the processes by which underrepresented youth, parents and adults may 1) recognize various forms of socio-cultural resources in their communities; 2) activate socio-cultural resources of capital to perform educational and technological tasks; and 3) use their educational and technological experiences to strengthen or expand their access to social and cultural capital in ways that might promote the productive use of technology and achievement. To support the emphasis placed on the underrepresented youths’ agency and voice, I examine notions of social and cultural capital from the standpoint of the participants.

The three complementary conceptual frameworks employed in this study: Social Reproduction Theory (SRT), Critical Race Theory (CrRT), and Cultural Reproduction Theory (CuRT) are used to explore: 1) the digital inequalities of technology use in learning spaces; 2) the cultural factors related to social and academic use of ICT; and 3) technological determinism in relation to socio-cultural factors, cognition, and the embodiment of technological practices. These complementary frameworks provide useful literature for understanding the possible ways values, beliefs, and practices impact the role of social and cultural capital in the youths’ motivation to use

technology and, vice versa, how the productive use of technology impacts social and cultural capital.

The study takes into consideration the significance of how and why certain aspects of social identity and cultural practices of learning emerge for youth and whether these practices emerge in a technologically enhanced environment. It also considered the ways in which youth engage and experience a connection to a summer learning program, the site for this study. The study seeks to counterbalance a deficit representation of low-income students and families by recognizing pertinent socio-cultural resources and practices that can promote the productive use of technology and achievement.

General Description of Methods

The principal focus is on middle school students ranging from nine to twelve years of age who reside in an urban environment with their parents or caregivers. In efforts to better understand the experiences of the students, the focus is shared (but not centered) on the parents/caregivers, educators, and volunteer community members who contribute to the students' perception and use of technology at the Lincoln Community Center (Lincoln is a pseudonym). Although a broader STEM focus existed at the summer program, the participants were given inexpensive digital tablets to use as a digital journal. The students were observed during program activities and on field trips and interviewed about their prior and current experiences using ICT.

The digital journals were given to support their ability to use technology and reflect on socio-cultural experiences related to their learning and social activities. The participants' use of the tablets varied greatly in frequency and manner of use. The adults' perspective of the youths' use of the tablets at home and at the center also varied greatly.

General Description of Site

I have selected this site for several reasons. First, there is a rich cultural history laden with traditions and beliefs within this urban Mid-Atlantic transcultural community. Due to societal flows (i.e., "black flight" and reconfigurations of immigrant populations and gentrification) within this community, there are transcultural changes taking place that make the community an interesting site to study. Gentrification within the youths' community may bring about a change in not only resources but exposure to other cultures and aspects of being, living, learning, communicating, and working, which in turn may influence how the youth understand and use technology.

Secondly, for over 20 years, the site has utilized culturally relevant practices to supplement education for youth and families (i.e., tutoring, job skill development, etc.). And, for over seven years, the staff has aimed to promote the utility of technology for advancement and to increase self-development. Many of the students who are active at the Lincoln Community Center are affiliated with approximately ten surrounding schools within the ward and come from low-to-moderate-income working-class families. Seven

out of eight of the study participants attend Shaw (pseudonym) elementary (see school demographics in Chapter 3).

The students have had experiences with mobile and computer-based technology in an educational or social context at their school, home, library, and at the site. Many student participants have taken digital media literacy courses related to Math oriented tutoring concepts at the site to help improve Math performance scores. Many parents have taken courses at the site to gain knowledge about job searches and for completion of online applications for jobs in which many have become successfully employed. The staff and educators at the Lincoln Community Center think that more can be done to increase learning and achievement using technology and would like to see the youth and families engage more productively with technology to meet academic and career needs.

Research Questions

The research questions for this study steer and establish the foundation of a work that is eclectic in that it is not completely guided by one theory but utilizes the aforementioned theoretical frameworks to explore the experiences of the students' intersections with ICT.

The research questions that guide the study are:

- 1) What aspects of social identity and funds of knowledge/community cultural wealth influence how underrepresented youth take pleasure and become motivated to use technology in their lives, in and outside of educational settings?

- 2) What funds of knowledge or community cultural wealth do parents and other adults mobilize - to shape the social identity of underrepresented youth and encourage them to take pleasure and become motivated to use technology in their lives, in and outside of educational settings, to develop technocapital?

These research questions serve as guides in the narratives of these students: an exploration of their life experiences inside and outside of their involvement with the summer learning program. The guiding questions support my efforts to explore the way the student participants' construct their environments and learning through activities in which they comprehend digital literacy and utilize technology in varying ways. As well, the guiding questions also contribute to investigating the role of the supplemental learning program at the Lincoln Community Center; particularly to gain insight on how, if at all, learning with technology at the site nurtures, facilitates, and motivates the participants' desire to use technology productively and socially.

Personal Stance as Researcher

In reflection of my own experience, the ability to have technological knowledge and access has been very helpful. I have often felt as an outlier in my interactions within the education system. As an adolescent, teen, and young adult, I became increasingly challenged and skeptical in obtaining resources and access to programs for educational attainment and the rewards. Even more so within higher education, I sometimes felt so alienated and disconnected that it was important for me to have mentors; those who

shared the same identity as me and those who didn't. My mentors acted as guides, helped provide access, and knowledge to obtain access. In opposition to some of the practices of my surroundings both in my home community and school community, I felt as an antagonist to what is systemic for a higher level of learning and a disrupter of potential groupthink.

In my own experience, my learning opportunities have been expanded through knowledge shared by family, friends, and cultural resources within my community; through access to mentors who had social and cultural capital in unfamiliar communities; and through the privilege of having technological access to information. These factors have and still contribute to empowering me to find a place and space to grow, achieve, and have significance. What (then) does technological access mean to youth who may also be trying to learn, learn what matters, learn how and what to apply, learn what fits – and where they fit so that they can achieve and feel significant as well?

While meeting with the staff at Lincoln Community Center in consideration for the site, I was informed of what and who I might represent in my interaction with participants: an African American female representing a tangible form of scholastic and social success that continues to traverse through societal, direction-finding, semantic, and systemic forms of power and social capital. The director of the site informed me, "it would really mean a lot for our youth to spend time with you; they will be excited to meet and work with someone of your background and experiences...someone who is working towards a doctorate." This was my first recognition that I embodied

academic titles, which could create and or awaken aspirational desires (e.g., aspirational capital) on the part of marginalized youth because I embody the identity of an educated black woman. The director, a middle-aged woman of Asian descent, unknowingly corroborated my premise on the importance of the youths' ability to interact, learn, and work with those who could provide insight to various paths to higher education and career attainment. I continued to wonder about what ways do the aspects of identity, associated with cultural and social networks, impact marginalized and underserved youths' motivation to learn, achieve, and produce with digital technology.

The similarities of positionality in race, gender (in some cases), and growing up in a low-to-middle income urban environment provide relational and contextual markers crucial for defining identities and knowledge of given situations that proved helpful in this exploratory case study. I had a deeper recognition that my presence and the presence of other staff serving at the community center possessed funds of knowledge and community cultural wealth that could serve as bridges between narratives of race, gender, and economically possible worlds.

Definitions of Key Terms

The following definitions are discussed throughout the proposal. These definitions are specific to the participants' identity and technological experiences at varying sites of learning (i.e., home, school, physical/virtual community spaces, etc.). The terms also aid in understanding how the technological influence of funds of knowledge and community cultural wealth

can be activated and/or mobilized into various forms of socio-cultural resources that can contribute to the productive use of technology, educational development, and success.

Activation/Mobilization: The process in which individuals engage to take advantage of an investment to achieve a certain goal. It is important for future research to address specific mechanisms in which activation/mobilization of social and cultural capital and funds of knowledge occur (Rios-Aguilar et al., 2011).

Agency: The participants' ability to accommodate, reconfigure, or resist the available socio-cultural discourses that surround their identity enabling his/her ability to effectively negotiate the discourse in their pursuit of success (Stinson, 2006).

Autonomy: For the purpose of this study, the amount of freedom to use technology whenever and wherever one wants to. Individuals with more access points to the Internet were more apt to engage in capital enhancing online activities (Hassani, 2006; Hargittai 2010).

Cultural Capital: Traditionally thought of as high-status cultural signs, such as behaviors, tastes, and attitudes used for social and cultural exclusion (Lamont & Lareau, 1988). However, in this study, the definition of cultural capital is more related to the nuanced forms of cultural capital as defined by Yosso (i.e., aspirational, linguistic, familial, navigational, and resistant) that are more relevant to funds of knowledge and community cultural wealth. Franklin (2002) defined cultural capital as "the sense of group consciousness

and collective identity that serves as a resource aimed at the advancement of an entire group” (p.177). Per Franklin various forms of cultural capital became a major historical resource for the funding of African American schools and other educational institutions and programs.

Culture: Per Noble, (1990) culture encompasses the composition and arrangement of behaviors, ideas, attitudes, values, habits, beliefs, customs, language, rituals, ceremonies, and practices unique to a particular group of people providing them a general design for living and patterns for interpreting reality. He further shares that culture can compel behavior and the capacity to reinforce ideas and beliefs about human functioning, including those related to educational achievement and motivation. Yosso (2005) shares that culture influences how society is organized, how school curriculum is developed, and how pedagogy and policy are implemented. In relation to students of color, culture is often represented symbolically by language and embodies identities around immigration status, gender, phenotype, sexuality, religion, race, and ethnicity (Yosso, 2005). “Culture is not a variable; culture is relational, it is elsewhere, it is in passage, it is where meaning is woven and renewed, often through gaps and silences, and forces beyond the conscious control of individuals, and yet the space where individual and institutional social responsibility and ethical struggle take place” (Fischer, 2004, p.7).

Social Capital: Embedded resources or assets in social networks (Lin, 1999) that can be measured by social connectivity or civic participation (Hargittai & Hsieh, 2013; Rios-Aguilar et al., 2011). Social capital includes

exosystems (i.e., extended family ties, parent's employment, respondents' immigration history, perceived social mobility, community relations, neighborhood interactions) and mesosystems (i.e., family, peers, neighbors, and school) (Bronfenbrenner, 1986; Rojas et al., 2004).

Technocapital: Origins of social and cultural capital used to decide whether or how to make use of technology. It is a product of technology disposition that provides competencies and resources for negotiation within the "technofield" (Rojas et al., 2004).

Technocompetencies: Acquired skills for and knowledge about ICTs are shaped by interplays of technocapital and other forms of capital (i.e., social, economic, cultural, symbolic) (Rojas et al., 2004).

Technodisposition: An individual or group's viewpoint towards technology. Per Rojas et al. (2004) indicators of technodisposition include: 1) social activities which involve individual and family history of tech use (i.e., Internet, smart phones, other ICT and patterns of mass media consumption); 2) perceptions and attitudes (i.e., respondents thoughts on ICTs and how ICT is perceived as a component of individual, family and community life); 3) technical education (i.e., formal/institutional as well as less formal training and vocational studies); 4) awareness of technology (i.e., understanding among community members about the potential value of ICTs for economic mobility); 5) desire for information (i.e., the relevance of various types of information and related use of ICTs to conduct searches in everyday life); 6) job requirements (i.e., workplace propensities toward ICTs); 7) social

relations/community interactions (i.e., capacity to foster an environment encouraging ICT use); and 8) geographic location (i.e., the way the location of a place supports the interplay of agency with tech with infrastructure and types of resources).

Technofield: A structured technological space where human agency is enacted in association with other social forces (e.g., political, economic, social, and cultural). An example of a technofield can be a video game space or eBay where agency is applied through social, political, and economic competition (Rojas et al., 2004).

Technological Experience: The number of years an individual has been online along with the amount of time a person spends online (Hargittai, 2010).

Underrepresented Youth: Youth possessing one or more of the following characteristics: low income, racial/ethnic minority, foreign origin (immigrant, undocumented, and second generation), foreign accent, non-English fluency, and being first generation college students (Rios-Aguilar et al., 2011).

Summary and Organization of Dissertation

In summary, this case study explored ICT use in relation to socio-cultural dispositions of underrepresented middle school youth. The study takes place over a period of eight weeks during a summer learning program at an urban community center. The participants, parents, and community

center staff were observed and interviewed regarding their experiences with technology and beliefs about technology use in efforts to recognize pertinent community-embedded resources and culturally relevant pedagogical practices that could promote learning achievement and technocapital. Social reproduction, critical race, and cultural reproduction theories are used as complementary frameworks to provide useful literature for understanding the dispositions and practices that may be associated with the role of social and cultural capital in the youths' motivation to use technology and, vice versa, how the productive use of technology impacts social and cultural capital.

The research questions are designed to address: 1) how the adults that interact with the youth (inside and outside of the community center) perceive the role of ICT in promoting education and development opportunities; 2) how youth participants use and understand ICT inside and outside the summer learning program; 3) how social identity and community embedded resources (i.e., funds of knowledge and community cultural wealth) influence how participants are motivated to use tech whether in or out of educational settings; and 4) how (if at all) culturally relevant pedagogy enhances and influences social identity and the development of technocapital. In the following chapter, I review relevant literature and provide more detail about the theoretical lens that frame the study. After the literature review, I present specific contextual information about the participants and the supplemental education setting at the Lincoln Community

Center (i.e., demographics of the site and the surrounding community),
including more detail about the methodology and the limitations of the study.

Chapter 2

A Review of the Literature

The following sections review the literature regarding inequalities in the use of digital technology and the three socio-cultural theoretical frameworks (social reproduction theory, cultural reproduction theory, and critical race theory) that are used to examine how marginalized youth interact with Information Communications Technology (ICT). I discuss the concepts of social and cultural capital as they appear in the literature and how these forms of capital can be activated in the lives of marginalized youth (i.e., through community cultural wealth and funds of knowledge). As well, I examine the literature for insights about how non-traditional/non-dominant forms of socio-cultural capital can be used to support how African American adolescent youth make sense of ICT, develop digital literacy skills and use (or fail to use) these skills to learn and relate to their environment.

I begin with a discussion of digital inequalities, including how those inequalities are associated with race and class, and the potential role of class ethos and habitus in shaping how marginalized youth approach ICT. I then examine each of the theoretical frameworks that I use in the study, noting where these frameworks may be especially useful in highlighting key aspects of marginalized youth's experiences with technology. I conclude with a discussion of how "reimagining" pedagogical practices through the lenses of funds of knowledge and community cultural wealth could provide new insights

into how educators can help marginalized youth leverage technology to gain valuable forms of human, social, and cultural capital.

Digital Inequalities

Educational achievement and attainment are highly stratified in the United States. Global comparisons indicate that White students in the United States rank second in reading out of students living in 29 developed countries around the world, whereas Black and Hispanic students rank twenty sixth (Tienken, 2010; Warschauer, 2011). While marginalized youth consistently perform less well in academic subjects compared to their more advantaged peers, such comparisons capture only part of the educational inequalities that will shape their lives. Today, access to, use of, and mastery of technology also represent fundamental inequalities in the educational opportunities afforded youth.

As demands for manual and cognitively routine work have declined in the United States and other developed countries, demands for job skill areas described as expert thinking¹ and complex communication² have increased (Levy & Murnane, 2004). Not only is computer and Internet use required by many occupations in the workforce, but, in an era of “knowledge workers,” the

¹ “Expert thinking” relates to advanced pattern recognition and problem solving that comes from deep knowledge and expertise of a specific domain of thought or activity (Levy & Murnane 2004).

² “Complex communication,” which is considered to be both verbal and written communication, involves the ability to communicate analytically and convincingly about complex problems that demand content expertise along with familiarity with scientific, legal, and/or other forms of reasoning (Levy & Murnane, 2004).

most valuable positions in the workforce require workers to be not just “users” but “sophisticated users.” Nonetheless, opportunities to acquire these more sophisticated user skills with technology are often absent from the educational experiences of marginalized youth. What was once a digital divide based primarily on access to technology has now become a digital divide based primarily on the use of technology and the way it is incorporated into the lives of youth.

Persistent Digital Divide

Regardless of the growing role of technology in the economy, how best to use technology in the classroom has been an ongoing debate since the beginning of the Internet era. Educators, administrators, technology enthusiasts, and families seemed to be at odds philosophically about how technology could and should be utilized in the classroom. On the one hand, considerable literature emphasizes the problem of access to technology in society, noting that a person needs to have access to information, mainly through the use of the Internet and Internet-enabled technologies, services and resources to fully participate in society and this has become even more transparent with the COVID-19 pandemic, where full-on technology became an even more necessary resource for education, financial sustenance, socialization, health and wellness. Yet, physical access is only one part of the challenge. Depending on the information needs and information sources, information access requires a variety of additional literacies, including informational, technological, and civic literacy. The Internet era has enlarged

the digital divide to include not just people without access to technology but also to include people lacking *meaningful access* to Internet-enabled tools, as well as people disadvantaged by the design of technology itself (e.g., the elderly and persons with disabilities, Jaeger, Subramaniam, & Bertot, 2011).

The digital divide appears to affect underrepresented populations (i.e., Black, Hispanic, and Native Americans households that are low income) the most. Both philosophical and economic constraints contribute greatly to the gap between people who have access to technology and those who don't. But even when access is available, these same constraints influence the creation of a more profound and complex gap, a gap between those who have the opportunity to learn the most effective ways to use technology and incorporate it into their lives and those who don't (Dimaggio et al., 2004; Fuchs & Woessmann, 2004; Vigdor & Ladd, 2010; Warschauer et al., 2004; Warschauer & Matuchniak, 2010). In other words, as policies have sought to address the problems of physical access to technologies, additional "divides" have been identified that broaden the scope of digital inequalities that influence educational opportunities and the economic well-being of individuals and social groups.

Research has indicated that access to technology is more than a binary division between people who have technology and those who do not. DiMaggio et al. (2004) shared five factors and outcomes related to access to technology: 1) quality of hardware, software, and network connection; 2) autonomy of use; 3) skill; 4) availability of social support; and 5) the extent

and quality of use. What makes these five factors important is that they help to shape the ways in which technology can be used to leverage additional educational and informational resources, and as DiMaggio et al. (2004) argue, certain Internet uses are more beneficial than others. Certain Internet uses can enhance the social, cultural, and human capital available to individuals, including marginalized youth who often find themselves on the lower rungs of a highly stratified society.

There are differing degrees and types of access, which relate to the type(s) and amount of equipment at home and speed of Internet access. Household and community conditions, such as the number and quality of computers and the quality of broadband Internet access, limit access for many marginalized youths. However, social, cultural, and psychological characteristics heavily influence access as well, and these “divides” are not as well studied as those associated with physical access to technology (DiMaggio et al., 2004). Computer mastery often depends heavily on social support (typically from peers and family members) and in most instances low-income and/or immigrant students rarely have many friends or relatives that are sophisticated users of digital media (Fuchs & Woessmann, 2004; Rojas et al., 2004; Vigdor & Ladd, 2010). Because low-income households and immigrant communities often have fewer people with a college education, including fewer fluent English speakers, marginalized youth often have less access to support when using digital media, which reduces the likelihood that their experiences with digital media will cultivate learning (Boyd, 2015;

Hargittai & Hsieh, 2013; Hargittai & Walejko, 2008; Kong, 2008; Rojas et al., 2004; Tondeur et al., 2010; van Dijk, 2005).

Divisions of Use

Hargittai and Hsieh (2013) indicate that initially there was a “first level digital divide” in which there were differences in *access* that existed among individuals and nations. Currently, however, these same authors argue a “second level digital divide” exists, which applies to differences in *usage* among individuals and nations and the social and economic implications of differentiated Internet use. While global issues of physical access persist throughout the world, in the United States, access to technology, especially in schools, has expanded substantially in the Internet era.

Current research has shown that the access gap, at least in terms of having physical access to a computer in schools, has been narrowing. Reports from two studies issued by the National Center for Educational Statistics in Fall 2008 and 2009 indicated that the digital divide, based on unequal access to computers in schools, largely has been erased. The ratio of students to instructional computers (desktop or laptop) with Internet access in U.S. public schools has steadily decreased over time from 12.1 students to a computer in 1998 to 4.8 students in 2002 to 3.1 students in 2008. Schools with 75% or more students eligible for free or reduced-price meals had a 3.2 student to computer ratio in comparison to schools with less than 35% of students eligible for a free or reduced-price meals where the ratio was 3.1. The schools with the highest numbers of minority students also had a 3.2

student to computer ratio, only slightly higher than the national average (Gray, Thomas, & Lewis, 2010; Warschauer & Matuchniak, 2010).

However, there are still relevant concerns present in the opportunities available for students to utilize technology in effective and generative ways in schools. Warschauer and Matuchniak (2010) argue that there are important differences in how technology is used and supported in schools (i.e., whether technology use is deemed as productive or non-productive in learning). Data from their research shows that in low-income schools, where 75% or more of students are eligible for free or reduced-price meals, 83% of teachers report that students utilize technology to "learn or practice basic skills." In high-income schools, where less than 35% of students are eligible for free or reduced-price meals, 63% of teachers report that students utilize technology to "learn or practice basic skills." Students in high-income schools also were more likely to use technology to prepare written text; conduct research; correspond with others; create and use graphic /visual displays; develop and present multimedia presentations; create art, music, movies, or webcasts; or design and produce a product. Teachers in low-income schools did not even report many of these behaviors as uses in their classrooms (Gray, Thomas, & Lewis, 2010).

Because technology use has differential effects on learning, these pedagogical differences are important. Dynarski et al. (2007), for example, found that student test scores in classrooms using selected Reading and Mathematics tutorial software were not significantly higher than test scores in

classrooms not using the software. However, research has also indicated that rich and creative uses of technology are correlated with higher test scores for students, especially when compared to the use of technology to learn or practice basic skills (Warschauer & Matuchniak, 2010).

Unfortunately, the former uses of technology are more likely to be found in classrooms attended by economically advantaged students while the latter uses of technology are more likely to be found in classrooms attended by economically disadvantaged students.

Equity in socio-technical access and utility by school staff are additional concerns regarding a changing understanding of the digital divide, in part because they influence the use of technology. Studies of school technology use in high- and low-income communities indicate that schools in low-income communities were prone to have less stable teaching staff, administrative staff, and technology support staff, which inhibited local planning for more effective uses of technology. Schools in higher-income communities had higher investments in professional development, full-time technical support staff, and stronger lines of communication amongst teachers, office staff, media specialist, technical staff and administrators, all of which encouraged and supported more extensive and effective use of technology by teachers (Livingston, 2010; Warschauer et. al., 2004). Also, the complexity of the teaching environment (i.e., large numbers of English language learners, large numbers of at-risk students, large numbers of students with limited computer experience, and increased pressure to

improve test scores and adherence to policy mandates) made it difficult to use technology more effectively and creatively in schools residing in low-income communities, particularly when these communities lacked the same supports characteristic of high-income communities (Livingston, 2010; Warschauer et al., 2004).

Understanding the changing nature of the digital divide is made more complicated when considering access to and use of technology *outside* of the traditional school day. Currently, millions of youths, nationwide, benefit from expanded learning opportunities in afterschool and summer learning programs. In 2013, it was reported that 14.3 million American schoolchildren participated in summer learning programs (Afterschool Alliance, 2013).

Parent interest indicates that 24 million more would participate in the afterschool and summer learning programs if the opportunities were available (Afterschool Alliance, 2013). When aligned with a traditional school day, afterschool and summer programs create an ideal space for project-based and hands on learning time, often facilitated by innovative uses of technology (Afterschool Alliance, 2013). Such programs can inspire subject interest and passions for learning among youth, which are key for applying principles of experimentation and exploration essential to the scientific process, providing, of course, that youth have equal opportunities to engage in these forms of technology use outside of school time.

Beyond these afterschool programs, educational opportunities to access and use technology are becoming prevalent in homes and throughout

major institutions within communities. People around the world are expanding their educational experiences outside of schools and into homes, libraries, community centers, Internet cafes, and workplaces where they can decide what, when, and how they want to learn (Warschauer, 2011). Through the resourceful use of the Internet and mobile-based technology, the integration of technology into education is changing the culture of the education system and the culture of students and their parents regarding where education occurs (Collins & Halverson, 2009; Jaeger et al, 2011). The seed of a reimagined education system is forming with the rapid growth of learning alternatives (i.e., home schooling, learning centers, community centers, workplace learning, and distance education), all of which must also be considered when gauging the nature of the digital divide facing youth in this country (Warschauer, 2011).

Despite improvements, especially in physical access to computers in schools, the digital divide remains a crucial civil rights issue. Studies show persistent gaps in Internet access but particularly usage by gender, race, age, literacy, disability, language, ethnicity, and socioeconomic status (Clark & Gorski, 2001; Jaeger et al, 2011; Livingston, 2010). Sadly, "equal access to the Internet is an issue where the disadvantaged are those who have fought for civil rights in other areas of our society" (First & Hart, 2002 p.385 as cited in Jaeger et al, 2011). If these digital inequalities continue to grow, especially outside of schools and in people's daily lives, they may well undermine the gains made thus far by civil rights activists to promote equitable educational

opportunities, economic growth, and civic engagement. Having limited access to the Internet and, more importantly, limited knowledge of Internet-enabled tools that facilitate beneficial usages, create critical disadvantages for racial and ethnic minorities that have been at the center of the civil rights movement in this country (Clark & Gorski, 2001; Norris, 2001; Vie, 2008).

Divide in Daily Life

While much of our understanding of the digital divide has focused on describing the educational, social, and economic consequences of digital inequalities, far less is known about how social and cultural factors contribute to the divide (Haddon, 2004; 2011). Hargittai and Hsieh (2013) argue that little research has focused on the social and cultural factors that shape how families and youth approach technology. Social and cultural capital, they argue, impact the likelihood of specific types of Internet use and the benefits associated with how technology is used. Even when marginalized youth have access to technology in the home, many families do not know how to use technology to leverage educational opportunities or view technology as a distraction from more traditional forms of study (Fuchs & Woessmann, 2004; Vigdor & Ladd, 2010).

In reviewing the literature on technology use in the home and academic outcomes, Hargittai and Hsieh (2013) argue that past research seldom considered whether youth had access to technological expertise, either in the home, at school or in the community; and rarely considered how differences in social context influences how people integrate digital media into

their lives. Graham (2012) further argues that our understanding of the digital divide fails to appreciate the underlying social and cultural factors that discourage historically disadvantaged populations from adopting “the latest” technology. Beyond cost considerations, Graham explains, technology is likely to be rejected when the technology does not integrate seamlessly with one’s way of life or has no perceived direct benefit to an individual or group of individuals. Among marginalized groups, such benefits are likely to seem remote, as many forms of technology are not designed or presented to fit easily with their daily routines or to address the major challenges that they face in their lives. Stated differently, marginalized populations are not the markets for which software and hardware developers design technology.

Underserved, disadvantaged, or underrepresented populations have their own information needs and cultural perspectives toward information that need to be accounted for in education systems, pedagogical practices and technology policy. Societal groups have their own attitudes toward sources of information, methods of information access, and the value of different kinds of information that frame their use of information technology. While the increasing electronic nature of information is heightening the potential for variation in these approaches to accessing and gaining information, few studies have examined how technology can be made more relevant and useful for marginalized populations (Burnett, Besant, & Chatman, 2001; Burnett, Jaeger, & Thompson, 2008; Chatman, 1999, 2000; Durrance &

Fisher-Pettigrew , 2002; Fisher et al., 2004; Fisher & Naumer, 2005; Hersberger, 2002, 2003; Jaeger & Burnett, 2010).

One potential approach to doing so is what has been referred to as research about the “domestication of technology.” The domestication of technology occurs when a new technology is appropriated by groups of individuals and eventually “domesticated” for the purpose of facilitating everyday activities. There are four phases to the domestication, according to Haddon (2004; 2011): 1) appropriation - how and why a technology was brought into a home; 2) incorporation – where a technology is located in the home; 3) objectification – how the technology is integrated into daily cultural patterns; and 4) conversion – how the technology is used to construct one’s identity. Such studies examine the digital experiences and Internet usage of specific populations, including marginalized populations, to better understand the different cultural meanings that individuals and groups attach to technology and the range of divergent cultural practices that develop along with these meanings.

Existing research suggests that differences in the domestication of technology are likely to reflect broader differences in education and income in society, though other differences, such as gender, are likely to play a role. Hargittai (2008) reported that higher levels of Internet-use skills were more likely to be found among students whose parents had prominent levels of education, and among students who were male, White or Asian American. Students of lower socioeconomic status, women, students of Hispanic origin

and African Americans exhibited lower levels of Internet knowledge than their counterparts. Similarly, Hargittai and Hsieh (2013) found a relationship between individuals' socioeconomic status and his/her Internet search sophistication along with his/her ability to evaluate content credibility; and Howard, Rainie, and Jones (2001) found people with college degrees were more apt to research and look for information, whereas people with lower levels of education were more apt to browse just for fun, play a game, or gamble online. Studies exploring differentiated Internet uses outside of the U.S. have found similar differences in the "domestication of technology" as measured by relationships between use and socioeconomic status (Bonfadelli, 2002; Livingstone & Helsper, 2007; Zillien & Hargittai, 2009).

While technology has often been introduced or promoted as a way to "level the playing field," studies of Internet use and user background suggest that digital media may actually exacerbate educational, social, and economic inequalities. These studies suggest that technology has been "domesticated" in different ways by various social groups. Youth from more highly educated and privileged families are more likely to integrate technology as a research tool in their lives while youth from less well-educated and less privileged families are more likely to integrate technology as a recreational device in their lives. As a result, youth from more privileged families are more likely than youth from less privileged families to be able to leverage technology to gain greater access to educational, social, and economic opportunities, further exacerbating the digital divide (DiMaggio et al., 2004; Hargittai, 2008).

Digital Identity, Ethos and Habitus

Domestication of technology also assumes that individuals develop an identity regarding technology. That identity might be as a non-user or casual user; as a gamer or online gambler; or as an avid researcher or investigator of online information. A person's digital identity captures a person's relationship to technology, the role that technology plays in that person's life, and, ultimately, the value that a person places on accessing technology and using technology to address everyday challenges or solve problems.

Just as individuals develop an identity regarding technology, so, too, do social groups. Such an identity might be referred to as a social group's digital ethos. Although ethos is a construct more frequently used to describe mental schema and normative beliefs associated with social class (e.g., Bourdieu, 1986; Du, 2007), a group's ethos can also help to shape individual identities of class members, and, in the context of this study, an individual's digital identity. Understanding class ethos can help to explain the digital identities that individuals adopt (or fail to adopt) when they access technology or have opportunities to use technology in their lives.

Per Du (2007), class ethos is a system of implicit and deeply internalized values that helps to define attitudes towards social and education institutions. Class ethos embodies the system of dispositions that individuals and groups hold as a product of the ways in which social systems objectify power and privilege in a class-based society. French sociologist Pierre Bourdieu (1984, 1986) created the concept of class ethos to represent the

ways in which people internalize mental and practical schemes involved with making choices based on their position in a social hierarchy. Class ethos has been described as a form of essentialism, in which life conditions, mental schemes, and practices are perceived as embodied or naturally bounded and structured deeply within an individual's sense of identity (Sheffy, 1997). A person's class ethos helps to define what is personally and socially possible, as well as what is personally and socially desirable.

Similarly, habitus, like class ethos, is perceived as the manner in which durable social structures are entrenched in individuals' minds and bodies (similar to embodiment) thereby controlling an individual's judgments and actions (Bourdieu, 1984). Habitus, also a construct created by Bourdieu (1984), explains how individuals create a sense of self and self-worth in certain social settings; they include a collection of embodied dispositions that are usually shared by individuals with similar social backgrounds (Bourdieu, 1984). In terms of a digital identity, a group's class ethos or an individual's habitus will include a set of dispositions associated with technology.

Technology might be portrayed as an important tool for expanding social connections or gaining access to informational resources, or it might be portrayed as merely recreational or largely irrelevant to a person's life.

The perspectives of class ethos and habitus can be perceived to be limiting when they are used to minimize agency and the investment by individuals in coping with often negatively branded social categories ascribed to them while moving between social spaces, particularly in demanding or

upwardly mobile careers (Sela-Sheffy, 2014). Each perspective has been criticized as overly deterministic because each appears to limit an individual's freedom and agency to exit from poverty or their social class (Bourdieu & Passeron, 1977). However, a number of theorists have argued that while constructs like *ethos* and *habitus* capture the power of social structures to reproduce the distribution of power and privilege in society, they need not be overly deterministic – that social mobility and resistance do occur and that these forms of agency provide important insights into how individuals leverage social and cultural resources to achieve unanticipated ends.

MacLeod (1995), for example, argues that the formation of an individual's *habitus* involves factors beyond simply social class. He considers *habitus* to be created at a family level and to include “ethnicity, educational history, peer associations, neighborhood social ecology, and demographic characteristics (e.g., geographical mobility, duration of tenacity in public housing, sibling order, and family size)” (p.138). While these factors were implied in Bourdieu's definition of *habitus*, MacLeod identifies them explicitly as factors that individuals use to explain their life experiences and trajectories in his longitudinal case study of marginalized youth living in urban, low-income housing. Similarly, McDonough (1998) suggests a similar broadening of an understanding of *habitus*. While McDonough agrees that an individual's *habitus* is an internalized system of thoughts, beliefs, and perceptions, she also argues that a person's *habitus* is shaped by his or her immediate

environment, including a person's access to social and cultural resources that might influence their decisions about what is possible and desirable.

Bourdieu (1984) himself acknowledges that social spaces are fields where forces and struggles take place between individuals with different means and ends to accomplish their goals. Features of the field are relative to the 'rules of the game' that aren't overt or arranged in a fully systemized manner – in other words, there are opportunities embedded within social structures by which individuals may acquire social and cultural resources that reshape or expand their personal habitus. Because fields are dynamic and, to some extent, loosely structured, individuals will confront opportunities to reshape their beliefs about what is possible and desirable, often through accessing additional forms of social and cultural capital (Dika & Singh, 2002).

Rojas et al. (2004) combine the terms class ethos and habitus to make the term "class habitus" to suggest that class ethos/habitus can be creatively used to liberate and empower families, especially through the leveraging of technology to acquire additional forms of social and cultural capital. Even when digital inequalities exist, Rojas et al. argue technology still has the potential to liberate and empower families, communities, and institutions, even when the use of technology to do so is rare.

Rojas et al. examined how African American and Hispanic youth in East Austin, Texas used technology and the influence of family and friends on technology use. Although access to technology was present in public centers, Internet-connected schools and libraries, and computer training

programs, youth still had predictable dispositions (deemed as technodispositions) to technology. In their study, Rojas et al. explored social and economic causes (class, ethnicity, geographic location, age, and gender-role constraints) for why families in disadvantaged communities do not have, do not use, or do not seek access to new technologies. A central question for the research was “whether lower class, minority youth and parents were forming a more durable and consistent class pattern (*habitus*) toward ICTs than commonly assumed” (p.108).

Rojas et al.’s goal was to understand how people make sense of what they hear and see about computers and the Internet when deciding whether or how to make use of the technology. Understanding this type of occurrence is even more significant now as aspects of technology appear to be more mobile, Internet costs have lowered, the Internet has become increasingly accessible through mobile phones, and varying applications that require small levels of digital literacy are more user-friendly. The manner in which respondents understood the Internet revealed their practical interactions with technology at school and home. However, many respondents’ use of computers in their daily lives appeared disconnected, as it was more anticipated for the distant future, especially for males. Nonetheless, in the study, technodispositions were reproduced through family, encouragement, incentives from school, and motivation from friends, sometimes in the service of fostering a positive digital identity and sometimes not.

In efforts to understand the parents' and teens' technodispositions, Rojas et al. (2004) analyzed the parents' class habitus: life trajectories and cultural capital to develop an awareness/appreciation of their family dynamics. Among the poor and working-class family subjects, Rojas et al. found considerable homogeneity in the dispositions that were associated with the subject's social position. The lack of access to quality education, poor neighborhood location, the challenges of sustaining a large family on a little income, recent immigration histories, and the inability of parents to progress beyond low paying unskilled jobs contributed to their class habitus. For the poorest families, the cultural capital related to technology (i.e., technocapital) that parents were able to transfer was minimal or nonexistent, as parents were hardly aware of new ICT. Even for youth who had been exposed to computers in middle school, the youth still had minimal knowledge of how computers and the Internet worked and an ill-formed digital identity.

Nonetheless, Rojas et al. (2004) determined that working class parents/families who had exposure to computers at work and those who were considering them for home, were more likely to have and pass on technocapital and favorable technodispositions for ICT and Internet use. The working moms in the study were concerned with how to transfer their ICT knowledge from work to children at home. Overall, the researchers found that: 1) child gender and parents, social capital from neighbors, friends, and peers (i.e., community cultural wealth) impacted technocapital and technodispositions of the subjects; 2) teens were highly impacted by adult

role models and peers; and 3) the social capital (i.e., funds of knowledge) conveyed from these sources can not only have a positive effect but also have a harmful effect on the development of technodispositions by reinforcing negative dispositions towards the use of technology.

While Rojas et al.'s study provides convincing evidence of the power of class ethos and individual habitus to shape the digital identities of historically disadvantaged youth, most often in limiting ways, it also identified "social spaces" in which marginal youth developed more expansive digital identities with positive technodispositions, identities, and social dispositions which provided important possibilities for leveraging technology to gain access to new forms of social and cultural capital that can influence positively their life trajectories. Sometimes these digital identities and dispositions resulted from the transfer of technocapital from parents and family members; other times it involved the transfer of technocapital from friends and teachers. While such transfers were rare, they were not non-existent. Although digital inequalities persist in our society, social spaces also exist where marginal youth can learn to leverage technology to achieve valuable personal and social goals, provided educators make use of such spaces, acknowledge the challenges posed by class ethos and individual habitus, and develop strategies to provide youth with access to social and cultural resources that can be used to enhance their digital identities.

Theoretical Frameworks

Eclectically, several theoretical frames – social reproduction theory (SRT), critical race theory (CrRT), and cultural reproduction theory (CuRT) – are applied to analyze the ways in which marginalized middle-school youth utilize computer-based and mobile technologies to make sense of and relate to environments around them. Each of these theoretical frameworks, consistent with socio-political approaches to examining societal inequities, emphasizes how political power shapes social and cultural relationships and how those same relationships shape access to political power. According to Gorski and Clark (2003), critiques of technology use and access should examine:

technology related inequities in the context of larger educational and social inequities, keeping at the fore of discussion the fact that those groups most disenfranchised by the digital divide are the same groups historically disenfranchised by curricular and pedagogical practices and other aspects of education (and society at large). (p. 30)

Employing these three frameworks, allowed for the examination of how marginalized youth, who have been historically disenfranchised by educational institutions, leverage (or fail to leverage) community cultural wealth and funds of knowledge to access and use technology to benefit themselves and their communities.

The study was exploratory in nature and the frameworks contributed to addressing the intersections of socio-cultural factors, pedagogical practices, and technological determinism associated with time, space, and the lived experiences of the participants. (See Figure 2.1) An analysis of the data using these frameworks supported the awareness of and learning about the emplacement of systemic and cultural factors that can affect how youth learn and engage with ICT and assist in obtaining new insights to formulate a specific problem or generate hypotheses to bridge concerns with the digital divide.

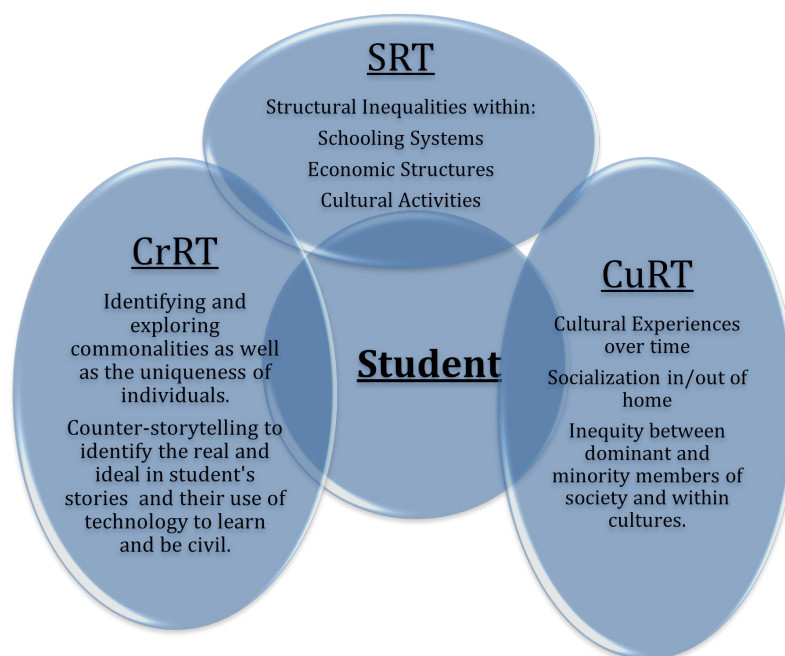


Figure 2.1 Interconnectedness of Student and Theoretical Frameworks: SRT, CrRT, and CuRT.

In the sections that follow, I examined each of the theoretical frames identified in Figure 2.1: SRT, CrRT, and CuRT. As the figure demonstrates, the three theoretical frames provided complementary perspectives about students, the educational opportunities afforded students, and the

consequences of those opportunities for students' life chances. For each theory, I discuss key constructs and propositions, and I discuss its potential relevance to understanding the digital divide and an examination of how marginalized youth engaged with and understood the use of technology during a summer educational program located in a moderate to low-income urban neighborhood.

Social Reproduction Theory

During the 1960's and 1970s, theorists in the United States, Britain, and France began to utilize social reproduction theory (SRT), rooted in Marxist traditions, to examine the structural links between economic inequality, schooling experiences, modes of consciousness, and cultural activities. Per Collins (2009), foundational writings on SRT, such as Bowles and Gintis's (1976) *Schooling in Capitalist America* (United States), Willis's (1977) *Learning to Labor* (Britain) and Bourdieu and Passeron's (1977) *Reproduction in Education, Culture, and Society* (France), contributed to a debate in the West about the origins of social inequality, privilege, elite status, and ethnic stratification. In the aforementioned countries, public education was perceived and presented "as a meritocratic institution in which talent and effort alone predicted outcomes, but by the post-World War II period considerable evidence indicated otherwise" (p.34). Social reproduction theory challenged the basic assumptions of liberal democracy and the distribution of social and economic outcomes in a capitalist society; rather than individual

merit and effort determining these outcomes, SRT argued that social class limited mobility in a highly stratified society.

Central Tenets of SRT

A central tenet of SRT is that social and economic institutions play a pivotal – if not irreversible role – in the reproduction of existing social and economic hierarchies. Central among these institutions is education and the distribution of educational opportunities. SRT scholars suggested that the history of the American education system, as well as the history of education in other capitalist societies, is a history of social reproduction, in which institutional agents, such as schools, replicate, fortify, and legitimize the hierarchies present in society and its workforce (Collins, 2009; Frederick, 2004; Solorzano, 1995). Economic inequalities influence the distribution of educational opportunities, and educational inequalities serve as a “legitimizing” instrument for reproducing social inequalities (Anyon, 1997; Collins, 2009; Frederick, 2004; Hacker, 1992).

While early macro analyses of social reproduction focused on the effects of institutional structures on economic and social inequalities in society (e.g., Bowles & Gintis, 1976), by the 1980’s there was growing interest in understanding the micro mechanisms underlying social reproduction, not just the persistence of inequality across generations. A second tenet of SRT is that the mechanisms by which social reproduction occur can be found in the daily interactions of children and families with social and economic institutions, which privilege the social and cultural resources of the

advantaged over the social and cultural resources of the marginalized.

Lareau's (2000, 2003) work, for example, like the work of most SRT scholars, critiques deficit perspectives at the heart of meritocratic explanations about why some students succeed while others do not, explanations in which low achieving students are said to be less able or competent in relation to educational enterprises (Noble, 1990). Lareau focuses on the dynamic and fluid interactions between students, their families, teachers, and classmates that create differential educational expectations and aspirations, expectations and aspirations that advantage the privileged and disadvantage marginalized youth.

Cultural and Social Capital as Key Resources

In examining the interactions of families and youth with educational institutions, SRT scholars have identified two types of resources that play a key role in determining educational outcomes – cultural and social capital. Cultural capital, as conceptualized by Bourdieu (Bourdieu, 1986; Bourdieu & Passeron, 1977), represents socio-cultural norms and expectations associated with how individuals should interact with social and economic institutions. Such norms govern a broad range of expectations about interactions between individuals, including how family members interact with each other, how parents interact with school officials, or how employees interact with their supervisors in the workplace. Cultural capital also helps to identify group membership, as it reflects a common set of beliefs or

expectations that govern interactions within the group and often interactions between the members of the group and members of other groups.

Bourdieu (1986) defines social capital as the actual or potential resources embedded within a reliable social network of interpersonal relationships of mutual acquaintance and recognition. The amount of social capital an individual has depends on the extent of his or her social network (Bourdieu, 1986), and the extent to which social ties promote trust, communications, and the common good (Coleman, 1988). The value of social capital is that it provides access to a broader range of resources than those possessed by an individual or even groups of individuals, when individuals share mutual connections across groups. Social capital can be useful in accessing a broad range of resources, such as information about job openings, emotional support during stressful periods in one's life, or financial assistance to attend college.

According to SRT theorists, like Bourdieu (Bourdieu & Passeron, 1977; Bourdieu, 1986), differences in cultural and social capital help to explain how social and economic institutions reproduce social and economic inequalities in society. Because social and economic institutions privilege forms of cultural and social capital possessed by more economically and socially advantaged families, the children of marginalized families are disadvantaged in their interactions with those institutions. Bourdieu's theories about cultural and social capital emphasize the structural constraints that prevent marginalized groups from accessing forms of capital required to interact

successfully with social and economic institutions; his theories also provide an alternative to a meritocratic narrative and human capital theory's explanation of social and economic inequalities (Dika & Singh, 2002).

Cultural capital and inequality. The strength of cultural capital as a construct lies in its ability to capture moments of social reproduction through observing how capital is positioned in different contexts – that is, by observing “the concrete and purposeful actions of individuals to activate their capital, and the institutional response to the activation of resources” (Rios-Aguilar et al., 2011, p.174). Lareau and McNamara Horvat (1999), for example, demonstrated in a case study on parental involvement with 3rd grade children attending a school, that social class acted as a mediating variable in how parents successfully and unsuccessfully interacted with schoolteachers and administrators. The study supported the notion that all individuals have cultural capital to invest or activate in various settings or fields. Yet, all cultural capital may not have the same value in each field.

Lareau and McNamara Horvat (1999) observed that parents adjusted their investments in, and use of cultural capital based on the outcomes of previous investments and usages. Past experiences with discrimination made it more difficult for African American parents than White parents to understand and comply with institutional standards, especially for low-income and working class African American parents. However, African American middle-class parents were better able to activate forms of cultural capital accepted by teachers and administrators within the school. They 1) acted as

advocates and requested information regarding students' learning and learning opportunities; 2) maintained a continuous connection with teachers; 3) monitored their children's homework; 4) made random visitations to the school; and 5) participated in volunteer work.

Although middle-class African American parents were cautious in their interactions with the school, they were aware that the way to interact with teachers and administrators was to have a positive proactive engaging stance, whereas parents who lacked this knowledge had more trouble using their cultural capital to promote better educational outcomes for their children. Their interactions with teachers and administrators were more likely to generate frustration, anger, and hostility, and to end in conflict or an exclusionary relationship with the school. Because the cultural capital of working-class African American parents was less likely to comply with the normative expectations of teachers and administrators, they were less effective in their interactions with their children's schools.

The findings of Lareau and McNamara Horvat's (1999) study were similar to an earlier study conducted on parental educational choice and cultural capital associated with social class by Ball, Bowe, and Gewirtz (1995). Ball, Bowe, and Gewirtz indicated middle-class parents possessed better knowledge and skills to negotiate the education system, while working-class parents were ambitious but lacked the relative knowledge to be practical and effective in negotiating the expectations of teachers and school officials. The results from both studies highlight class-based differences in the

possession and activation of cultural capital and the value placed on how cultural capital is displayed in particular settings. These studies also illustrate how “matches” in cultural resources can be converted into educational advantages while “mismatches” can result in educational disadvantages.

Social capital and inequality. The strength of social capital as a construct is the manner in which it can be used to capture the cohesiveness of groups and the types of social and cultural resources that individuals can access within and across groups. While Bourdieu’s (1986) emphasized how social capital can be used to examine the scope of social networks in which individuals participate, Coleman (1988) emphasized the intangible qualities of the relationships that comprise a social network, such as trust and cohesiveness. Dika and Singh (2002) examined whether these aspects of social capital are positively linked to: 1) educational achievement – grades/test scores; 2) educational attainment – graduation/college enrollment; and 3) psychosocial factors affecting educational development – engagement/ motivation/self-concept. They found aspects of social capital to be related to each.

Adolescents who showed agency in school and the community, by participating in school activities and community activities, had higher levels of achievement than adolescents who had weaker ties to the school and community. Academic achievement was also associated with having close friends attending the same school who also were similarly engaged in academic activities. While parent participation in schools and communities

was also found to be positively associated with achievement, the influence was largely indirect. Parent participation and institutional ties were more apt to influence behavioral outcomes than cognitive outcomes for students, such as completing homework. Grades and educational aspirations were more apt to be influenced by the ability of youth to develop and maintain ties to their schools and communities (McNeal, 1999; Stanton-Salazar & Dornbusch, 1995).

Dika and Singh also found the probability of dropping out to be associated with what Coleman (1988) would refer to as family cohesiveness. Dropping out of school was positively associated with nontraditional family structures (e.g., single-parent homes) and the number of siblings in a family. Dropping out was negatively associated with high parental expectations and aspirations for their children, strong parent-teen connection, frequent parent monitoring of student activities, participation in religious and other forms of organized activities, parent communication with school, and intergenerational closure (i.e., the extent to which parents of children's friends interact with one another and share support for the social and cognitive development of their children).

Other studies have reached similar conclusions about social capital and its influence on educational outcomes. Specifically, family structure, interactions within families and ties to schools and communities influence achievement, graduation, and educational aspirations (De Graaf, De Graaf, & Kraaykamp, 2000; Dika & Singh, 2002; Dyk & Wilson, 1999). Additional

significant factors that have been found to influence educational attainment include youth interactions with individuals outside of family, particularly supportive adults. Such interactions may involve frequent conversations with the parents of friends, mentoring by a significant adult within the community, or an especially supportive relationship with a teacher at school (Dyk & Wilson, 1999; Lopez, 1996). These findings indicate that access to social capital has many positive associations with educational achievement, attainment, and psychosocial factors supportive of desirable educational outcomes, though the mechanism by which social capital influences these outcomes is not always explored.

Dika and Singh (2002) found that research on social capital and education presented between the years of 1990 and 2001 did not fully acknowledge differential access to social networks and social resources, and how differential access can lead to social reproduction. Research on social capital influenced by Coleman (1988) has tended to focus on social control and cohesion within families and groups; research on social capital influenced by Bourdieu has tended to focus on the scope of social ties and the extent to which those ties include supportive connections to important institutions, like schools. Regardless, Dika and Singh's findings, along with those of other scholars (e.g., Dyk & Wilson, 1999; Lareau, 2000, 2003; Lopez, 1996; McNeal, 1999; Stanton-Salazar & Dornbusch, 1995) suggest that social capital is a valuable resource and that access to social capital can help to explain differences in educational outcomes.

Technology and SRT

With the expansion and increased use of ICT across time and space, the implications of access and use of ICT can be applied to reconsider the links between economic structures, learning experience, modes of consciousness, and cultural activity; not specifically from a top-down structural perspective, as predicated by SRT, but potentially from a bottom-up, heterarchical perspective that could possibly minimize unequal access to both cultural and social capital (Rojas et al., 2004). While the digital divide still exists, both in terms of access and use of ICT, technology also provides opportunities for marginalized youth to access forms of cultural and social capital restricted by structural inequalities. Technology, therefore, may reinforce the structural inequalities at the heart of SRT or it may provide a means for marginalized youth to transcend those inequalities.

Ecological perspectives. From an ecological perspective, ICT holds the potential to dramatically change the scope and nature of ecological influences on the social and cognitive development of marginalized youth. Developmental psychologist, Urie Bronfenbrenner (1986), for example, presented an ecological model in which he described five different ecological systems that influence children's development: macrosystems, exosystems, mesosystems, microsystems and chronosystems (see Figure 2.2). Working from the inside of the figure to the outside, microsystems and mesosystems (e.g., interactions with family, peers, neighbors, and school, actors within the

microsystem) directly impact a child's development. All other systems in Bronfenbrenner's model, indirectly impact a child's development.

An example of an exosystem effect is when a mother who has been particularly stressed at work behaves more irritably than usual with her son when she gets home. The mother's work is an exosystem for the child because he spends no time there, yet it has an indirect influence on him (Tudge, Mokrova, Hatfield, & Karnik, 2009). The macrosystem contextually encompasses any group, culture, subculture, or other extended social structure in which members share values or belief systems, resources, lifestyles, networking systems, life course options and patterns of social interchange (Tudge et al., 2009). As indicated in the figure, each system interacts with the others through various layers of the ecology, and developmental effects accumulate over time, as indicated by the chronosystem which includes major life transitions, environmental, and historical events occurring during development.

Bronfenbrenner's ecological model illuminates the development of an individual within a distinct ecological space. It focuses on the proximal and distal influences of developmental processes within a specific context over time (Tudge et al., 2009). From the perspective of SRT, the ecological space within which social and cognitive development occurs is distinct and mirrors the social and economic inequalities embedded in the structure of society. ICT, however, may help marginalized youth adapt their ecological space to broaden access to additional forms of cultural and social capital, as well as

use existing forms of cultural and social capital more effectively to accomplish tasks, such as achieving educational and career goals.

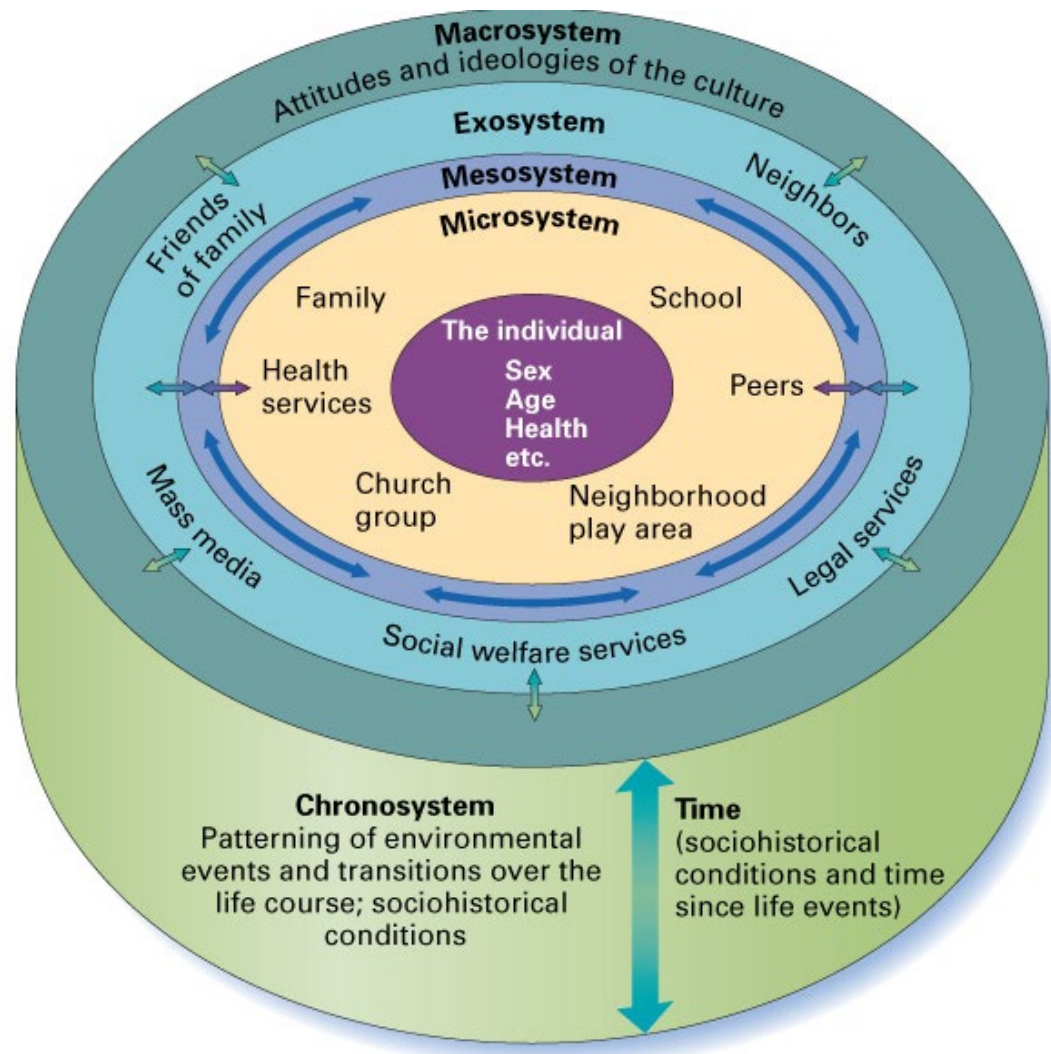


Figure 2.2: Graphic depiction of Bronfenbrenner ecological model.³

Learning ecologies and technology. The potential role of technology in reshaping the learning ecologies surrounding youth is complex (Hargittai & Hsieh, 2013), with studies reporting conflicting findings

³ <http://cicsworld.centerforics.org/wp-content/uploads/2011/11/02061.jpeg>

(Haythornthwaite & Rice, 2006). While digital media may strengthen social ties (Hampton, Sessions, Her, & Rainie, 2009; Hampton & Wellman, 2003; Rainie & Wellman 2012), act as a bridge for accessing valuable forms of capital (Ellison, Steinfeld, & Lampe, 2007; Katz & Rice, 2002, Kraut et al., 2002; Norris, 2001), and promote more diverse discussions among individuals (Hampton et al., 2009; Farman, 2012), digital media may also weaken social bonds and minimize the time that individuals spends interacting with others (Kraut et al., 1998; McPherson, Smith-Lovin, & Brashears, 2006; Nie, Hillygus, & Erbring, 2002; Putnam, 2001). Nonetheless, a number of studies have demonstrated how technology can be used to reshape positively the learning ecologies for students, including for marginalized youth.

Barron, Martin, and Roberts (2007) examined how Internet resources can be used to alter the ecological space in which learning occurs. While the study acknowledged the links between economic structures, schooling/learning experiences, consciousness, and cultural activity, they argued that Internet resources could be used to reshape the ecological space in which learning occurs. The study took place in Bermuda, where the government sought ways to better prepare secondary school students for high-paying jobs and high-level executive positions. Rather than rely on the recruitment of off-island workers for these positions, the government sought to improve educational opportunities in secondary schools, which were 81%

black, so as to promote local talent, educational attainment, and greater technological expertise.

Barron et al. (2009a) assessed two aspects of students' learning ecologies 1) the use of a variety of learning resources, particularly Internet resources, and 2) the extent to which the students shared their knowledge about technology with others. To address the government's equity concerns, Barron et al. focused on how Internet resources might be used to prepare all students for technologically advanced careers and positions of leadership (particularly underrepresented groups of local women and minorities). Their study demonstrates that there is a need for an ecological perspective to analyze participation in social networks across time and contexts, particularly when introducing technology. The introduction of ICTs can disrupt structural inequalities and create learning ecologies that promote more positive educational outcomes for marginalized youth.

Students were surveyed regarding experiences related to seven types of fluency-building activities in which they engaged using technology (creating multimedia presentations, computer programming, use of desktop publishing applications, starting a discussion or newsgroup online, creating a website design, website publishing, and creating art). Students were also questioned about their communication with others using technologies (reading emails, sending emails, use of the Internet, accessing remote databases, participating in chat rooms, communicating globally, communicating with students in other schools, pen-pal exchanges, and social awareness

exchanges). Results indicated that as students became more technologically fluent, their learning ecologies diversified, providing them with greater access to learning opportunities. Students also developed stronger ties to their communities through the sharing of new forms of technological knowledge with others.

Hohlfield et al. (2010) conducted a study using a similar ecological model – Epstein’s Spheres of Influence (2001) – to examine how the provision of ICT access could enhance communication and cooperation between schools, families, and communities. Epstein’s model, which is a simplified version of Bronfenbrenner’s model, postulates that greater coordination between families, schools, and communities (the three spheres of influence) will result in better educational outcomes for students. Like the Barron et al. study, Hohlfield et al. set out to determine whether access to technology, specifically ICT, could change the ecological space in which the social and cognitive development of children occurs by strengthening social ties and enhancing access to valuable community resources.

To investigate the theory, Hohlfield et al. used statewide data collected in Florida from the academic years 2003 to 2007. They identified significant trends in how schools in the state communicated with, involved, and provided ICT access and education for community and family members. Their findings indicated that schools serving every level of SES groups significantly increased contributions for ICT access and education of families and communities during the time period. The interactions with ICT increased

families' social capital and access to educational resources, promoting positive educational outcomes for students, including in schools that served low-income families. The study's findings support the importance of continued incorporation of ICT as a communication strategy to connect families, schools, and communities. Such strategies create dynamic relationships that can be used to increase social capital and empower citizens and families, which improves the outcomes of students within their schools.

SRT and this Study

Family socioeconomic status is one of the strongest influences on a child's educational achievement and life chances (Collins, 2009; Coleman, 1966), so there is still a need to understand better how the distribution of class-linked statuses and resources influences educational outcomes. SRT draws attention to these social and economic inequalities and provides a useful lens for understanding the digital divide and how interactions between individuals and institutions reproduce inequalities, including inequalities in the educational opportunities and outcomes for women, the poor, and specific racial/ethnic groups. While SRT has been criticized (Collins, 2009) for failing to address 1) aspects of individual agency/change, 2) the way individuals themselves reproduce social order, and 3) how people may create spaces to empower themselves (regardless of power structures working to marginalize them), SRT's focus on conflict and systemic inequality is still useful to better understand how race and class are factors that influence the transmission of educational inequality.

While SRT highlights the importance of structural inequalities, additional theories such as Cultural Reproduction Theory (CuRT), and Critical Race Theory (CrRT) can also be useful in broadening our understanding of how ecology, context and agency shape social outcomes (Collins 2009; Frederick, 2004; Giroux, 1983; Hill-Collins, 1991; Jaeger & Breen, 2013). These frames also acknowledge structural inequalities, particularly as manifested by culture and race, but place a stronger emphasis on possibilities for resistance, opposition, and agency by marginalized individuals and groups. These latter two theories are more closely associated with the major constructs that guide this study – funds of knowledge (Rios-Aguilar et al., 2011) and community cultural wealth (Yosso, 2005). In this study, SRT is used to highlight the role of structural inequalities in shaping educational outcomes for marginalized youth, while CuRT and CrRT is used to highlight how marginalized individuals and groups can leverage social and economic resources to transcend structural inequalities.

Cultural Reproduction Theory

Cultural reproduction theory (CuRT), like SRT, highlights how social and economic inequalities are passed on from generation to generation. While CuRT also challenges the meritocratic narrative about social mobility and individual economic success in capitalist societies, particularly as justified by human capital theory, CuRT does not focus on structural inequalities as the primary reason why social and economic hierarchies tend to reproduce themselves across generations. Rather, CuRT emphasizes the role of culture

in reproducing class structures. Studies that adopt a CuRT perspective examine specific aspects of culture, such as values, language, and norms, which differentiate the powerful and the privileged from those who are less advantaged. How these cultural attributes are transferred across generations and sustained over time are primary threads in CuRT's explanation of the persistence of social and economic hierarchies in society (Sullivan, 2002).

The exchange or transfer of accepted cultural norms, values, and information occurs through the process of socialization. Two methods are enculturation and diffusion. Enculturation involves an older generation encouraging a younger generation to adopt traditional ways of thinking and behaving (Aikenhead & Jegede, 1999). Parents and educators are extremely influential in enculturation as they represent standard bearers for their generation (Aikenhead & Jegede, 1999; Grace, 2009). Diffusion, a second method, occurs when cultural norms and behaviors have been spread to unrelated groups or individuals (Bourdieu, 1986; Bourdieu & Passeron, 1977; Nash, 1990; Winthrop, 1991). While enculturation facilitates cultural reproduction, diffusion creates opportunities for change through cultural assimilation and opposition.

Central Tenets of CuRT

A central tenet of CuRT is that social and cultural practices vary across society and that these practices tend to correspond to differences in social status, privilege, and power. In a highly stratified society, social and cultural practices often are used to differentiate or distinguish groups, with those at

higher levels of the social hierarchy being in a position to privilege their social and cultural practices over others (Bourdieu, 1986; Bourdieu & Passeron, 1977; Jaeger & Breen, 2013; Lamont & Lareau, 1988; Nash, 1990; Ogbu, 1978). From the perspective of cultural reproduction, the alignment of social and cultural practices with privilege and power, helps to explain why social mobility is minimal across generations: As children are socialized into the social and cultural practices of their parents and other cultural standard bearers (Aikenhead & Jegede, 1999), children are socialized also into highly stratified social and economic roles associated with those cultural traditions.

A second tenet of CuRT examines what happens when opposing cultures meet or when members of marginalized groups resist the “cultural standards” imposed on them by members of more privileged and powerful groups – individuals may assimilate or resist the imposition of cultural standards that they believe are incompatible with their own beliefs, values, and social identity (Bourdieu, 1986; Bourdieu & Passeron, 1977; Nash, 1990; Ogbu, 1978; Winthrop, 1991). Ogbu (1978) describes oppositional cultures, particularly with regard to blacks who trace their heritage to slavery, as attempts to sustain cultural identity in a society dominated by white cultural norms and standards. Other scholars (e.g., Yosso, 2005), however, describe “bridging” or “code-switching” as prominent in cultures in which individuals from disadvantaged groups resist assimilation but use white cultural norms and standards to promote greater equality and social justice. During code-switching an individual can go between differing cultural and linguistic spaces

related to parts of their own identities to connect and further associate with others.

Like SRT, CuRT identifies educational institutions as a primary setting for transferring social and economic inequalities across generations. Educational attainment serves to legitimize the distribution of social and economic goods in society. Students whose families socialize them into dominant cultural norms and standards have a considerable advantage in navigating expectations and requirements of educational institutions; students who arrive at school with a different set of cultural norms and standards must learn new norms and standards and determine how to integrate them into their social and cultural identity. Failure to adopt or integrate dominant cultural norms and standards legitimizes educational failures, including low grades, disciplinary problems, dropping out of school, and lower levels of educational attainment. While educational failures are sometimes attributed to “cultural deprivation,” CuRT understands these failures as the result of cultural conflicts and social hierarchies.

Bourdieu and Cultural Reproduction

Bourdieu has been a prominent theorist for both SRT and CuRT. Although his theories about cultural capital have been used to explain the micro mechanisms by which social reproduction occurs, they are more closely aligned with his cultural reproduction theory. Bourdieu examined social stratification and cultural practices in industrialized France, an economic structure comparable to the capitalist structure of the United States during the

1960's and 1970s (Lamont & Lareau, 1988), to understand how the reproduction of cultural practices and standards contributed to social and economic inequalities. Bourdieu (1986) defined cultural capital (i.e., socially valued culture) as the type of knowledge, skills, education, and normative expectations held by an individual to attain a higher status in society. While all individuals possess some form of cultural capital, Bourdieu was interested especially in those forms of cultural capital aligned with status, privilege, and power.

In his work, Bourdieu (1986) differentiates three subtypes of cultural capital: embodied, objectified, and institutionalized. Embodied cultural capital relates to the aspect of being or things (stuff) that make up a person that are consciously and passively acquired over time by means of family and/or community through socialization. Objectified cultural capital relates to possessed physical objects, like tablets, iPads, computers, art, etc. As cultural goods, they can be used to gain economic profit or can be used symbolically to attain a higher status. Institutionalized cultural capital involves some form of institutionalized accreditation or credential held by an individual that typically plays out in the labor market. Institutional cultural capital can be a form of economic capital by certifying the strength of one's experience and ability in comparison to others.

Per Bourdieu, (2000) success in the education system is accelerated by the possession of cultural capital and higher-class habitus (i.e., character and ways of thinking acquired through higher-class activities and experiences

of everyday life); underrepresented students are typically perceived to lack the dominant or higher-class forms of cultural capital because “valued” forms of embodied, objectified, and institutionalized cultural capital are aligned with social and economic hierarchies. While CuRT, like SRT, argues that educational outcomes can be explained by structural inequalities (social and economic), CuRT argues that cultural reproduction explains social reproduction. Students socialized into forms of social practices and cultural norms embraced by higher-status groups are more likely to succeed in school than students socialized into social practices and cultural norms associated with lower-status groups.

Although Bourdieu’s theories of cultural capital and cultural reproduction are well known and cited, controversy surrounds the validity of his theories. Critics argue the core concepts and mechanisms of Bourdieu theories are unclear, including 1) what exactly constitutes cultural capital; 2) how is it transferred from parents to children and 3) how does cultural capital mediate educational and socioeconomic success (Jaeger & Breen, 2013). While these criticisms warrant additional development and specification in Bourdieu’s theories, Bourdieu’s theoretical insights about how cultural differences reproduce social and economic inequalities have proven useful. His theories have provided guidance in how to explain differences in the educational, social, and economic fortunes of underrepresented groups compared to the outcomes of the predominantly white, dominant groups (Jaeger & Breen, 2013; Lamont & Lareau, 1988; Nash, 1990).

Ogbu and Cultural Frame of Reference

Ogbu (1995a) defines culture as a people's way of life which frames how people interpret the world and events in the world around them. An individual's or groups' cultural world determines the acceptable standards of behavior and one's reactions to their perceived reality. Per Ogbu culture has five components: 1) *customary ways*: of behaving, making a living, eating, expressing affection, getting married, raising children, responding to illness and to death, getting ahead in society, and dealing with the supernatural; 2) *codes or assumptions*: expectations, and emotions underlying those customary behaviors; 3) *artifacts*: things that members of the population make or have made that have meaning for them; 4) *institutions*: economic, political, religious, and social-the imperatives of culture that form a recognizable pattern requiring know-how, skills, and customary behaviors in a fairly predictable manner; and 5) *social structure*: the patterned ways that people relate to one another.

Per Ogbu, (1995a) cultural differences in these five components often result in oppositional cultural frames of references for subordinate groups that are in continuous contact with members of the dominant group for which situations give rise to status problems. The cultural frame of reference of the non-dominant group may include attitudes, behaviors and speech styles that are deemed as socially undesirable by the dominant group, being not only different and deficient but oppositional.

A cultural frame of reference can span outside the life of its creators, persisting to operate in relation to its purpose. Ogbu (1978) shares that the ability of people to cross cultural boundaries is based on whether cultural frames are similar, different, or oppositional, with similar being the easiest and oppositional as the most problematic. Voluntary or immigrant minority groups who do not possess oppositional cultural frames of reference cross cultural boundaries more easily, whereas nonimmigrant minorities experience the most difficulties in crossing cultural boundaries at school and in the workplace (Ogbu, 1978, 1995b). In segregated areas of life, where there is less cultural boundary crossing, the maintenance of boundaries and markers of group or collective identity are not particularly challenged by the dominant group (Ogbu, 1978, 1995b). However, more concerns may arise as cultural boundaries are being crossed in gentrified urban areas and through the use of the Internet.

Cultural Capital and Deficit Perspectives

Some interpretations of cultural capital have influenced members of the dominant culture (particularly within school systems) to often assume that members of the non-dominant culture lack the social and cultural capital required for social mobility and often attempt to structure ways to help “disadvantaged” students whose race and class background may contribute to their lack of valued forms of knowledge, social skills, and abilities. This manner of deficit thinking, a discourse of deficiency, focuses on the perceived cultural deficiency of underrepresented children, particularly African American

children; it posits that minority students and families are at fault for poor academic performance due to: 1) students entering school without the “appropriate” normative cultural knowledge and skills; and 2) parents lacking value or failing to provide “appropriate” support for their children’s education (Goldenberg, 2014; Noble, 1990; Stinson, 2006; Yosso, 2009). Practitioners who participate in this discourse believe that the lower achievement of many underrepresented students can be attributed to higher rates of poverty, high crime communities, unstable single parenting, segregation, racism, and discrimination (Ogbu, 1978; Hernstein & Murray, 1994). There is also the belief that lower levels of academic achievement are natural and genetically inscribed (Selden, 1999; Selden, 2007).

One discourse of deficiency, the cultural deprivation theory (Hyman, 1967; Sugarman, 1967), suggests that underrepresented youth perform poorly in comparison to dominant middle/upper class youth because they are culturally deprived prior to and during their school experience. Both Bourdieu (1986) and Ogbu (1978) reject the concept of cultural deprivation. While Bourdieu focused on working class cultural difference as the reason for poor academic performance, he posited that the possession of cultural capital was an explanation for underachievement of the working class in which the upper class has the *power* to establish its culture as dominant in society. In this way, the upper class ensures that the possession or non-possession of the dominant culture measures achievement.

Ogbu (1978) dismissed the cultural deprivation theory because he: 1) believed the theory failed to account for why some students who are “culturally deprived” do well in school; 2) was concerned that the measurements of school achievement is based on White, middle class, cultural values of which most of the world could be seen as culturally deprived and in need of enrichment programs; and 3) (similar to Bourdieu) believed the theory embodies the perception that children are to be blamed for their failure in the school, not society or the school. Ogbu (1995a) shares that cultural discourse has changed from whether and how cultural differences enrich or discourage school adjustment and academic achievement to concerns regarding hegemony and inadequate representation in the curriculum and certain areas of education. Over 20 years later, these concerns are still relevant on addressing educational inequalities, including the desire to increase the access of marginalized youth to technology and representation in STEM fields.

Technology and CuRT

The changes in the forms of distribution of technological resources and relationships may also increase underrepresented students’ access to cultural capital and social capital, thereby increasing access to other forms of capital, including economic capital. The fungibility or conversion and reconversion that exists amongst types of capital speak to real and symbolic resources that may be acquired by future generations of students using technology (Nash, 1990). Indeed, Hargittai and Walejko (2008) believe that recent online

developments could level the playing field by allowing fewer dominant groups to evade traditional cultural gatekeepers, such as teachers and other authorities who may restrict access to valuable forms of capital.

Ito et al. (2009a/b) report how working-class youth who embody the street smarts of how to hustle for money converted their interest of 'tinkering' and 'messing around' with ICT into technical expertise and financial endeavors, which gave them the experience of what it might be like to pursue a self-directed career. Their findings discussed experiences where these students acquired damaged technology and repaired the technology resulting in the acquisition of financial, social, and cultural capital. In "Hanging Out, Messing Around, and Geeking Out", Ito and colleagues (2009a) indicate geeking out is maintained by specialized knowledge networks and communities, which are focused on particular interests and a range of specific social practices for sharing work and opinions. These networks and communities where youth 'geek out' are sites for exchange and conversion of social and cultural capital, which in turn can provide economic and educational benefits.

Relevant to Bronfenbrenner's ecological theory, Hassani (2006) found that people with more opportunities to access technology engaged more frequently in online activities from which they benefited. More access to digital media allows for more opportunities to engage in culturally relevant activities, like content creation and sharing, which includes creative expressions of digital mash ups, collaborative problem solving, group

affiliation, and media circulation. Scholars who focus on the participatory culture created by digital media argue that these practices will progressively enrich our society, enhancing skills needed to function in the contemporary workplace, and diversifying the creative production of culture (Jenkins et al. 2006). Researchers found that people who make digital media an integral part of their lives benefit from regular opportunities to engage in discourse with others (DiMaggio et al., 2004; Hargittai, 2008; Howard & Jones, 2003; Warschauer, 2002).

While technology has the potential to level the playing field, fewer marginalized youth take advantage of the benefits of technology, even when they have access to digital media, than more advantaged youth. As a result, there are important differences in the uses of technology by youth from different social classes (Warschauer, 2002) and genders (Hargittai, 2008), including the exposure to and participation in creative networks of users. Hargittai and Walijko (2008) found that creative activities with technology were associated with family SES (which was defined by parents' education level). Students who had at least one parent with a graduate degree were more apt to create content (online or offline) than others.

Hargittai and Walejko (2008) believe that as online content becomes increasingly important to establishing political, social, and cultural agendas, the existence of participation gaps in creation of content, will increase social inequality. Narrowing those gaps may also decrease social inequality. Barron and colleagues reflect on the need to prepare all students (particularly

underrepresented groups of women and minorities) to capitalize on new technologies and increase diversity in the membership of professions contributing to innovation. Barron et al. (2007) report that minimal participation of underrepresented groups limits the amount of critical design resources potentially provided by more varied perspectives. Research shows that design processes benefit when developers are from a wide range of backgrounds, concerns, and life experiences (Pinkard, 2000) leading to greater empathy with users' needs, which in turn can reduce cultural barriers to accessing and using technology.

CuRT and this Study

Studies suggest that youth benefit from physical access to learning environments which empower the use of new media (i.e., websites, mobile apps, multimedia, computer games, etc.). However, along with physical access, the need for knowledgeable peers or mentors may also be key (Rojas et al., 2004). Barron et al. (2009a) report that more youth are becoming new media producers. However, the learning environments supporting access to these empowering uses of new media thought to be critical for the development of these skills, dispositions, and knowledge need to be better understood. In these “cultures of participation” or “affinity spaces” youth share work, receive feedback, and expand social networks that expand 21st century capacities for learning and engagement (Partnership for the 21st Century Skills, 2011). And as Hargittai and Walejko (2008) argue, such access can help to shape the cultural frames from which marginalized youth

see themselves and others see them as valuable members of their communities and society.

Bourdieu's (1986) theory of cultural reproduction and Ogbu's (1978, 1995a) cultural frame of reference is applicable to parents and staff in my study in the discussion of their concerns regarding the relationships or lack of relationships, disconnects and changes within a community, and the impact of varied racial and socioeconomic dynamics that influence aspirations and concerns about children's use of technology and their social and academic well-being. The cultural frame of reference applies to how participants identify how technology can contribute to what it means to "make it" and how difference plays out in the continuous interactions of culture within their evolving community; cultural capital attests to perceptions about the role that technology may play in creating resources considered to be valued by the community and useful to bridging with other communities.

Moreover, Bourdieu's notion of cultural reproduction and Ogbu's cultural frame of reference are useful perspectives in understanding how marginalized youth access and use technology. While all minorities encounter cultural and language differences, the ability to overcome challenges in school depends, in part, on the interpretation of challenges. Youths' cultural constructs of race and gender can influence their understanding of how they choose to interact with technology, which impacts learning and the use of technology. African Americans, particularly African American males, are thought to be consumers rather than creators in the use

of technology (DiSalvo, 2012). A focus for this study is on such marginalized youth and how they access technology and use it as part of a summer program in a changing urban community.

I used a cultural reproduction framework to analyze marginalized youth's use of technology and I was careful not to overly emphasize social structures or deterministic perspectives about cultural frames. Foster (2003, 2004) suggests that paying too much attention to structural aspects of society that hinder minority academic success – such as economic inequalities or oppositional cultures – gives only a one-sided picture of a problem. Foster urges educators to not define culture in bounded and static terms of analysis, but to account for shifting identities of individuals as his/her affiliations, genealogies, loyalties, and networks make it difficult to place someone neatly in a particular category.

I used CuRT to investigate the ways in which culture is continuously contested and negotiated through inscription and ascription, and in conscious response and involuntary reaction (Foster, 2003). Foster cites Fischer (2004) to argue, “culture is not a variable, culture is relational, it is elsewhere, it is in passage, it is where meaning is woven and renewed, often through gaps and silences, and forces beyond the conscious control of individuals, and yet the space where individual and institutional social responsibility and ethical struggle take place” (p.7). By applying a cultural reproduction framework to this study, I hope to shed light on not only how culture limits marginalized youth's understanding of technology but how the use of technology can also

reshape culture itself and leverage access to important forms of cultural capital.

Critical Race Theory

Critical race theory (CrRT) is used to apply understanding, knowledge, and interpretation to the meaning of human texts and symbolic expressions that could potentially expand the scope of autonomy and reduce the scope of domination for underrepresented youth in the study. CrRT, which has its origins in critical legal studies and radical feminism, is instrumental in ascertaining how society organizes itself along racial lines and hierarchies and in how our social situations might be transformed for the better (Delgado & Stefancic, 2012).

CrRT examines a range of phenomena – including history, economics, political interest, expressed beliefs and possible unconscious beliefs – to study and transform relationships among races, mitigate the harmful effects of racism, and rebalance inequities of power (Delgado & Stefancic, 2012). CrRT aims to shift the deficit view given to communities of color as places filled with cultural poverty to a richer view of communities of color as places comprised of an array of cultural knowledge, skills, abilities, and contacts that can be used to accomplish individual and collective goals (Yosso, 2005).

Central Tenets

The tenets of CrRT are based on the notion that while racism is “normal” in American society, it is not inevitable. The tenets of CrRT that inform characterizations of theory, research, pedagogy, curriculum, and policy

include: 1) the intercentricity of race and racism; 2) the challenge to dominant ideology – challenging notions of neutral research or objective researchers and exposing deficit informed research that silences, ignores, and distorts epistemologies of people of color; 3) the commitment to social justice; 4) the centrality of experiential knowledge; and 5) the utilization of interdisciplinary approaches (Yosso, 2005).

The term community cultural wealth is an example of a construct consistent with the tenets of CrRT. Community cultural wealth, as a construct, challenges the traditional interpretations of cultural capital (Yosso, 2005). In placing an emphasis on the importance of sources of knowledge, Yosso cites Anzaldua (1990, p.70):

Theory, then, is a set of knowledges. Some of these knowledges have been kept from us – entry into some professions and academia denied us. Because we are not allowed to enter discourse, because we are often disqualified and excluded from it, because what passes for theory these days is forbidden territory for us, it is vital that we occupy theorizing space, that we not allow white men and women solely to occupy it. By bringing in our own approaches and methodologies, we transform that theorizing space.

Anzaldua's perspective is consistent with the eclectic framework of this study and my use of the funds of knowledge and community cultural wealth concepts to examine social and cultural capital present in the participants' use

of technology. Sources of knowledge held by non-dominant groups and phenomena that generate assets and resources that have not operated in the dominant culture would not be considered as social or cultural capital by many theoretical frameworks, but they are from the perspective of CrRT.

In comparison to Bourdieu's perspective on cultural capital theory, which relies heavily on individual income as the driver for cultural differences, Yosso shares the work of Oliver and Shapiro who extend cultural capital to accumulated assets and resources. Oliver and Shapiro (1995) posit that the income/earnings gap between Blacks and Whites is a misinforming way to analyze inequality due to: 1) income only focusing on a single form of capital over the period of a year; and 2) the income gap between Blacks and Whites continues to narrow but social inequalities persist. Oliver and Shapiro (1995) examined the concept of wealth and defined it as the entire expanse of one's acquired assets and resources, much more than just income. From their perspective, community cultural wealth is defined "by an array of knowledge, skills, abilities, and contacts possessed and utilized by Communities of Color to survive and resist macro and micro-forms of oppression" (p.77).

Per Yosso (2005) CrRT supports research on the experiences of people of color being perceived in critical historical context that reveals accumulated assets and resources in the histories and lives of their communities. CrRT research reconceptualizes "wealth" to include valuable forms of resources that exist in communities of color. Scholars in this tradition have a commitment to conduct research, as well as to promote

teaching in schools that serve a larger purpose of struggling toward social and racial justice. With this being said, this research has the main goal of identifying and documenting the activation of cultural wealth to transform education and as a future means of empowering people of color to utilize assets already abundant in their communities.

Counter-Storytelling as Methodology and Pedagogy

CrRT supports the sharing of narrative views that relate to competing accounts of the same phenomenon (Barnes 2009, Hawkesworth, 1999). Counter-storytelling supports the identification of the ideal and real in the participants' stories and their use of technology, for example, to learn and actively participate in civic activities. As an analytic framework, CrRT can serve as a pertinent "intellectual and social tool for deconstruction, reconstruction, and construction: deconstruction of oppressive structures and discourses, reconstruction of human agency, and construction of equitable and socially just relations of power" (Ladson-Billings, 1998, p.9). CrRT: 1) theorizes about race while addressing the intersections of race, class, gender, and other forms of oppression; 2) challenges dominant epistemologies and ideologies such as meritocracy, objectivity, and neutrality; and 3) applies counter-storytelling as both a methodology and a pedagogical tool (Frederick, 2004; Ladson-Billings, 1998).

The stories or narratives employed in CrRT add necessary contextual contours to what appears to be objectivity in positivist perspectives. With the radical changes within the media landscape transitioning from traditional top-

down mass media to content created by citizens themselves and with the changes in the ways spaces have opened for the authentic voices of people to be heard (Farman, 2012), students need to be able to develop their own opinions and critically evaluate issues and events around them.

Individuals' unique lives are significant sources of expertise and CrRT acknowledges that members of underrepresented groups are not homogenous (Harding, 2009). A member's experiences can greatly differ from the experiences of another member. For example, in "the idea of slavery – both master and slave are in the same institution, but they [master and slave] experience slavery in radically different ways" (Barnett, 2009, p.186). My desire is to identify and explore commonalities of the subjects and the uniqueness of the individuals within the group of marginalized youth who are the focus of this study.

Counter-storytelling is a method used in CrRT to unveil the experiences of underrepresented people and give analytical standpoint or "voice" to understand, feel, and interpret their lived experience. I will employ counter-storytelling to share the stories of the students themselves and their alternative educators (i.e., parents and staff of the Lincoln Community Center) regarding influences connected to their use of ICT in learning and socialization. Empowering the students and educators to share their voice and naming their own reality allows for a deeper understanding of the impact of the students' ecology and lived experience on their use of technology.

Technology and CrRT

Scott and White (2013) discussed the motivations of 41 African American and Latino girls in an urban Southwestern school district. The subjects voluntarily attended a 2-year culturally responsive multimedia program after school and during the summer. The study used qualitative data to examine how the girls built new assets, reflected on their engagement with technology, and expanded their connections to their community. Seventy-four percent of the females were Latina and 19 percent were African American participants between the ages of 13-18. Their research examined how cultural relevant aspects of the program curriculum impacted retention of students and their perception of self as a future technologist. Per Scott and White, two primary themes emerged to explain the girls sustained motivation: 1) the challenge of learning and mastering the technology and 2) the ability to manipulate technology and learning experiences as a means of self-expression and research, particularly to inform community and peers.

Scott and White (2013) contend that girls of color are interested in technology fields but have minimal culturally relevant prospects to pursue that area of study. Per Scott and White, students' beliefs about their cultural identities greatly influence their value for academic and nonacademic activities. While economic inequalities challenged African American and Latina girls' abilities and capacities to engage technology, that story, which dominates research about marginalized youth and technology, is itself only marginally informative. Rather it is important to track students' understanding of themselves in relation to race, gender, and social class as they are

simultaneously competing activities, which ascribe characteristics to their developing identities. Scott and White's research is an example of how the presence of counter-storytelling supports access to participants' voices that is critical for exploring motivations for learning, specifically as potential technologists.

Stories attending to race, gendered female groups are dismissed and/or devalued which muddies identities and prevent a thorough understanding of how social categories work to operationalize identities and truths (Collins, 2009; Crenshaw, 1991). The analysis focused on the knowledge the girls generated about the digital world and their social location as they increased their opportunities to gain mastery of their technical experiences in a culturally relevant context. The subjects' perception prior to the study had shifted from an understanding that digital knowledge was acquired through minimal interactions with others to an understanding that digital knowledge was acquired through communal interactions heavily involving interpersonal associations. As the expectations for interactions increased and the technology became more complicated, the students became more invested in their desire to learn and participate.

Per Scott and White (2013), the students were surprised at how quickly they learned digital media and synthesized information. The students began to see each other as resources, significant sources of knowledge and took pride and ownership of their work, space, and the program. The students began to see their use of technology as a means to an end as they became

advocates for social change. Scott and White reported that some students felt an increase of control over their learning experience in more formal educational settings. One participant reported, “I didn’t know I could do that for school. My teachers didn’t even know what Scratch is.”⁴ And I told them what we could do in Scratch, and they thought that was a good idea. And we should start doing that this year.”

Scott and White (2013) shared that the subjects explored different facets of self while increasing their new media literacy. The participants entered with high perceptions of technology’s utility for their community and grew to see themselves as participatory members of a digital community. The participants obtained a greater sense of empowerment as the activities associated with technology and research became more demanding and connected them to making a difference within their community. Scott and White suggest more urban-based enrichment programs that promote asset-building, encourage reflective approaches to learning, and encourage connectedness with others could aid in the creation of a critical mass of technologists for the future.

CrRT and this Study

Society is increasingly data driven and the education system suffers from a mix of a problematic curriculum that is not culturally relevant; little to no instructional innovation that connects, engages, and motivates students to

⁴ Scratch is a free visual programming language and online community developed by MIT Media Lab where one can create interactive stories, games, and animations. It is used by students, teachers and parents. It can be used as an introduction to computer programming.

excel in their learning and as citizens; and failing assessment measures. As a result, the “meritocratic” education system struggles with knowing and understanding what students actually know (regardless of measurements) and are able to do. As related to earlier arguments concerning the “achievement gap discourse,” intelligence testing and assessments have been utilized to legitimize and scientifically rationalize underrepresented student’s deficiency, reinforcing stereotypes that serve hegemonic functions (Goldenberg, 2014).

Concerns about the digital divide are impacted and influenced by the intersections of access, digital literacy, and the possession (or absence) of various forms of capital (i.e., economic, social, and cultural). As an analytical frame, CrRT focuses on how educational experiences with technology expose racism in education, whether it be personal, systemic and/or structural, and it encourages the identification of solutions for tackling various forms of digital inequalities (Delgado & Stefancic, 2012; Frederick, 2009; Ladson-Billings, 1998; Ladson-Billings & Tate, 1995).

In this study, CrRT is applied to bring meaning to the “text” of the experience and blend meaning from what is present and occurring with what is imagined, a unity of the real and ideal. I used CrRT to explore the interpersonal and cultural relationships influencing the use of technology; to understand what is subjectively experienced (i.e. the setting, the feelings, and reactions to the content involved) as well as the sensory experience (i.e. mental activity, and/or emotional dimension); and to understand how the

subjects of this study make meaning from a set of learning opportunities designed to promote their exploration and use of technology in their lives (Merriam, 1998).

Reimagining Pedagogical Practices and Spaces

In efforts to have a deeper understanding of the participants' experiences, negotiations, and sense making, it was important to analyze pedagogical practices and the cultural context in which youth use technology. It was my assumption, based on the studies presented in this chapter (e.g., Yosso, 2009; Goldenberg, 2014), that youth can greatly benefit from the implementation of culturally responsive pedagogical practices that reconsiders and incorporates students' attitudes, community traditions, and community associations in their use of technology. Providing youth with these culturally relevant and responsive practices can empower student's learning and achievement; support and increase their analytical development; and increase equity and economic development within their communities (Rogow, 2011). By creating more culturally responsive educational opportunities for students with technology, educators and community leaders can help to break down the digital divide and achieve greater levels of equity for marginalized youth.

In this section, I discuss the damaging effects of what Carey (2014) refers to as the “achievement gap discourse.” This discourse, prevalent in much school reform, obscures the sources of achievement differences and

fails to highlight the importance of reimagining pedagogical practices to incorporate community resources and culture. Then I describe the positive role that culturally responsive pedagogy can play in learning, particularly in reducing various forms of the digital divide. I conclude the section with a discussion of reimagining pedagogical space for marginalized youth. Such spaces can provide students with new and more powerful opportunities to learn – safe yet challenging spaces where youth can develop identities as technologists and leverage technology to gain access to valuable forms of social and cultural capital.

Achievement Gap Discourse

Scholars have emphasized the need to critically rethink pedagogical approaches relating to underrepresented students, particularly their possession of cultural capital in the context of achievement, opportunity, and the use of technology for teaching and learning. The “achievement gap discourse,” as discussed by Carey (2014), identifies concerns about the ‘discourse’ surrounding the achievement gap, particularly assumptions about why primarily low-income students of color don’t perform at similar levels as their counterparts who are White and of certain Asian backgrounds. Rather than deepening our understanding of achievement differences, Carey argues, such discourse only serves to obscure the sources of achievement difference and reinforce existing stereotypes and educational inequalities, including differences in youth access and use of technology. Carey’s assessment of the achievement gap discourse is consistent with the social reproduction,

cultural reproduction, and critical race theory perspectives that I reviewed in the previous section.

The achievement gap discourse, which informs debates about how to reform education, incorrectly positions blame on teachers, students, and schools for social and cultural issues (Carey, 2014; Kumashiro, 2012). Similar to discourse about the participation gap, discourse about the achievement gap most often identifies the source of the issue as associated with the characteristics of disadvantaged individuals and communities (Barron, Martin, Takeuchi, & Fithian, 2009). Too often symbolic terms are used to distinguish between higher and lower performing groups of students, which communicate stigma without any acknowledgement of social and economic inequalities. As Carey (2014, p. 443) argues, “underperforming, adequate yearly progress (AYP), highly qualified, below basic, and proficient are terms that hold symbolic meaning and are used to distinguish between the positive and negatives about schools, teachers, and students.”

The symbolic meanings of terms like underperforming and AYP often operate as boundaries, which though symbolic create real barriers for policy makers, educators, students, and their families (Bourdieu & Passeron, 1977). For example, a cultural gatekeeper “uses specific metrics or socio-cultural indicators to denote an ‘intelligent’ versus an ‘unintelligent’ student, a ‘respectful’ versus a ‘disrespectful’ pupil, a ‘worthy’ versus an ‘unworthy’ learner” (Carter, 2012, p.11 as cited by Carey, 2014). Similarly, cultural gatekeeping can be a factor in how policymakers, educators, students, and

their families define “productive” vs. “nonproductive” uses of technology. Such symbolic barriers can create tangible barriers, which further inequities, stifle youths’ social and cognitive development, and stifle teachers’ ability to develop authentic and meaningful learning experiences for their students (Carey, 2014).

Scholars have reported that the language and framing of the achievement gap has sustained and reaffirmed a dichotomous and hegemonic relationship between non-Whites and Whites (Carey, 2014; Gutierrez, 2008). Evidence of these notions are in the number of studies that investigate issues associated with the success and failure of low-income, and culturally/racially diverse youth without taking into account the immense inequity of resources usually allocated to schools serving these populations (Carey, 2014; Kozol, 1991; Kozol, 2005; Meier & Wood, 2004).

Goldenberg (2014) (following the work of Milner, 2010) suggests that the achievement gap should be referred to as an opportunity gap, whereas instead of focusing on educational outcomes (i.e., test scores) and the documentation of how students of color are behind their White and Asian peers, we should reframe achievement in terms of opportunity. Educators must come to terms and struggle with the complexity and significance of identifying students’ cultural attributes and resources to get rid of the opportunity gap and increase student achievements and participation.

Reimagining Pedagogy

In relation to the circulation of culture and knowledge, Ito et al. (2009a/b) report that youth of varying backgrounds were highly involved in peer-based learning, new media literacy, and in the use of networked publics through friendship driven genres of participation and/or interest-driven genres of participation. Their study identifies three levels of commitment and intensity displayed by youth in their interaction with ICT: 1) “hanging out” – spending casual social time with one another (e.g., Facebook, Myspace, etc.); 2) “messaging around” – “beginning to take an interest in and focus on the workings and content of the technology and media themselves, tinkering, exploring, and extending their understanding” (p. xviii); and 3) “geeking out” – intensive and frequent ICT use with high levels of specialized knowledge that allow for alternative models of status and credibility in which youth may often bend and/or break social and technological rules.

Findings from Ito et al. (2009a/b) show that youth of varying backgrounds are developing forms of media literacy that are deemed as extremely meaningful to their youth-centered social and cultural worlds. Findings indicate properties of peer-based learning that drive engagement are characterized by reciprocity in which students 1) believe they can both produce and evaluate knowledge and culture; and 2) develop a reputation and receive recognition from respected peers. Parents often used new media with their youth to stay involved, be aware of and participate in their children’s interest. In some instances, children act as a technology ‘expert’ or ‘broker’ in

the family, translating websites and other forms of information for their parents (Ito et al., 2009a/b).

Eglash et al., (2013) assessed the outcomes of two culturally responsive Math education technologies on underrepresented youth of varying backgrounds (African American Distributed Multiple Learning Styles Systems-AADMLSS and Culturally Situated Design Tools-CSDT) in urban out-of-school environments. Their study showed that cultural factors along with economics have an impact on student learning and engagement. The AADMLSS applet possesses a game-like virtual environment through which a variety of signifiers (i.e., ethnic identity of characters, narratives of actions, contexts, and stylistic elements) are tied to vernacular culture. The CSDT applet allows users to use tools to create their own simulation of African designs using fractals, which is associated with both their heritage and vernacular culture. The authors saw a significant increase in the mean from the pretest to the posttest intervention in engagement with technology but found that the uses of these technological tools were low initially when students lacked information and experience. However, once the students were knowledgeable about the tools, they were excited about using them, particularly for fractals in the CSDT applet.

Eglash et al. (2013) reported that many of the older children were more focused on ethnic identity than the younger children. Nonetheless, youth did not limit fully their tool use by ethnic identity or cultural associations of designs. While these aspects of the tools stimulated interests, students also

used tools associated with a different heritage to produce designs (Eglash et al., 2006). The authors suggest that urban educators should consider several culturally responsive approaches to STEM education. They suggest: 1) being mindful of varying approaches to addressing aspects of cultural reference, social justice, and pedagogical style as children vary in aptitudes, backgrounds, and beliefs (e.g., use of vernacular and heritage culture, social critique, social affirmation, and pedagogical styles of passive and active learning); 2) attempt to locate deep connections that may disturb barriers between technical and social understandings or beliefs; 3) take both vernacular and heritage culture seriously, as vernacular culture may tempt and easily engage children in learning while heritage culture aids in healthy identity formation; and 4) although culturally responsive education focuses on self-identity, many children are “hybrids” and/or the classroom as a collective is, so give youth the flexibility to explore other cultures and identities.

Goldenberg (2014) discusses studies where students were academically successful while maintaining their cultural identity. He reported students are likely to have a resistance to schooling in which they perceive the environment as “unwelcoming and dismissive of their ‘cultural competences and capitals’” but are not resisting the idea of academic achievement (Carter, 2005, p.10; Harris, 2011; Kohli & Solorzano, 2012).

Foster (2004) also showed that minority success is congruent with and stems from individuals’ community-based understandings of themselves and their

community members and argues that minority high-achievers' motivation to strive and succeed are rooted in their experience as community participants.

The findings of these studies shed light on culturally important interactions that come into play with the use of technology by youth. I found these studies very helpful in framing my study and approach to engaging marginalized youth with technology. These studies support the notion that culture can be a bridge but if the cultural approach of the educator presents a misrepresentation, culture can also become a barrier. Culture as a bridge in education increases funds of knowledge and community cultural wealth for marginalized populations. My study, which I describe more fully in the next chapter, investigates the role of culturally responsive pedagogy in helping marginalized youth use technology to create bridges for valuable forms of social and cultural capital.

In summary, this analysis will cover whether the educators in this study incorporate culturally relevant pedagogical strategies derived from and/or contributing to funds of knowledge and community cultural wealth that display a governance and balancing of the pupil's background knowledge and experience, situation, and environment. The study shows the ways in which funds of knowledge and community cultural wealth influences the culturally relevant practices that may benefit parents, students, and the teachers' facilitation of co-established learning goals. Incorporating the premises of these pedagogical practices into the integration of ICT usage can support positive outcomes of how stakeholders (parents, students, and teachers) can

be empowered through partnering to take constructive action in regard to students' learning.

Cultural Brokers and New Spaces

Per Pesce (2010), in traditional schools, meaning-making activities and processes for creative phenomena are produced by educators and/or imposed by educators through public policies (e.g., Universal Schooling/No Child Left Behind). Concepts of meaning, "Institutions" (i.e., a social group, a 'psychic space' or imagined community) (ICEM, 2010), that are produced by teachers and children together are not stagnant or fixed and can be perceived as tools utilized by the group to create new meanings or to transform existing ones. This is a form of semiotics, which helps students to understand aspects of cultural codes and creates a convention of meanings for stakeholders in the imaginings of the Institutions (Pesce, 2010). The imagining of this group/community space as it relates to the material/physical aspects (i.e., the activities that are organized, being in the classroom, care of facilities, provision of meals) creates a shared meaningful social environment in which learning can take place (Pesce, 2010, ICEM, 2010).

As students delve deeper into the use of ICT (particularly those in urban learning environments), they will have border-crossing experiences on multiple levels as narratives become more readily available and exposure creates a new awareness of self and the "Other" (Giroux, 1991). Students in urban learning environments are perceived to be at greater risk due to 1) the lack of emplacement of their identity within the Institution; 2) the relativity of

the inscription of their identity to the Institution (particularly if it holds negative perceptions and connotations from their environment), and 3) the semiotics and systematized codes of the Institution in which the design of the traditional Institution may be foreign and not favorable to their success. Yet, research shows that combatting these deficits through the incorporation of race-gender identities in culturally relevant practices interweaved with social justice aims and design opportunities are likely to be more supportive of their success (DiSalvo, 2012; Eglash et al., 2013; Hatley, 2011; Scott et al., 2009; Sheridan et al., 2013).

Per Aikenhead and Jegede (1999), it is important to consider how pupils move between their everyday life world and the world of school Science to help effectively teach students Science. They share that in the perspective of cultural anthropology, learning Science requires an individual to acquire the culture of Science. In efforts to acquire the culture of Science, pupils have to travel from within their everyday world to the world of Science found in their classroom, which often results in conflicting worldviews and feelings of inferiority as judged by the dominant culture (Aikenhead & Jegede, 1999).

According to Aikenhead and Jegede (1999), when the culture and/or perspectives of Science correspond with the student's culture and worldview, the instruction complements the students' perspective, allowing for enculturation, in which the students then have a smooth border crossing experience into school Science. When the culture/perspectives of Science

conflict with the student's lifeworld, then instruction tends to unsettle the student's worldview as it seems to force the student to abandon or downgrade life-world concepts and replace perspectives with other ways of conceptualization to assimilate. Assimilation can result in alienation from their life-world culture due to social disruptions and alienation from Science, as students may develop a way to pass courses without full engagement or meaningful learning of the content.

Aikenhead and Jegede (1999) suggest that instructors assume the role of cultural broker in the learning space to operate with a culturally sensitive curriculum and assessment. They suggest that Science teachers act as cultural brokers and employ a cross-culture pedagogical paradigm for teaching Science – a “conceptual eco-cultural paradigm”: in which the growth and development of an individual's perception of knowledge is taken from the socio-cultural environment in which the learner lives and operates. This includes: 1) producing information about the students' everyday environment to explain natural phenomena; 2) becoming aware of and using local scientific and technological principles, theories, and concepts within the students' community; and 3) and teaching well-known community values in relation to and in the practice of Science and Technology as human endeavors.

Although Aikehenhead and Jegede (1999) were addressing the implications for Science teaching, these implications are relevant to developing youths' technology skills as well. Putting these things into perspective, it is proper to reimagine a pedagogy that can be integrated into

the use of technology. This reimagined pedagogy designed for the urban learning environment creates a new space, within or in correlation to a learning environment, which promotes critical analysis; experimentation; creativity; and possibility. This site of negotiation, or pedagogical borderland, as indicated by Giroux (1991, p. 77), can “demonstrate the importance of a multi-centric perspective that allows students to recognize and analyze how the differences within and between various groups can expand the potential of human life and democratic possibilities.”

Summary

In this chapter I reviewed a broad range of literature that is relevant to this study. I discussed current research that characterizes various forms of the digital divide experienced by marginalized youth and their more advantaged peers, including differences in access to technology, differences in the uses of technology, and differences in the physical spaces in which technology is integrated into their lives. I argued that these differences, if not addressed through inventive educational opportunities, will aggravate social and economic inequalities that characterize society.

I presented three complementary conceptual frameworks that I intend to use when collecting, analyzing, and interpreting data for this study: social reproduction, cultural reproduction, and critical race theory. Each perspective rejects a “deficit theory” as the explanation for the differences in educational outcomes between children from “advantaged” and “disadvantaged”

households; rather these perspectives examine structural, cultural, and racial discrimination as the explanation for the “achievement gap” that exists in this country. Each perspective also provides a series of useful constructs for exploring how social and economic inequalities are reproduced through education, including how educational institutions value certain forms of social and cultural capital while devaluing other forms. Finally, the application of these perspectives, though to varying degrees, suggest possible insights into how marginalized youth may be able to use technology to resist negative stereotypes and create a more positive cultural narrative for themselves and their communities.

I also drew from these three perspectives, as well as my guiding constructs of funds of knowledge and community cultural wealth, to argue for the reimagining of pedagogy that introduces marginalized youth to technology and Science in association with increased cultural relevance. By moving away from a deficit discourse about achievement differences and emphasizing instead the culture and community resources available to youth, educators, and civic volunteers can create educational spaces for empowering marginalized youth through technology – the very focus of this study. While technology can further exacerbate existing social and economic inequalities, it can also ameliorate them, especially when used to bridge disparate communities and gain access to valued forms of social and cultural capital.

This study is designed to contribute to a body of work about how technology can be used more effectively to promote learning and social change. First, the exploration of the presence of funds of knowledge and community cultural wealth in learning and social environments where technology is used can increase our understanding about how to use technology more effectively, including the use of technology related to workforce development and training in education systems and settings dealing with a variety of populations, particularly those of underrepresented and/or low-income youth. Second, a goal of this study is to focus on qualitative findings in order to gain an in-depth understanding of how cultural capital contributes to how students make sense of their experience with learning technology. Third, the use of ICT is an increasing phenomenon in society, and there is an increasing concern for how ICT is being used and can be used to empower people to overcome disparate circumstances that may limit their life chances. This study minimizes the gap that exists in the literature regarding the significance of cultural factors in learning with education technology, particularly in relation to marginalized youth. This study illuminates how educators, parents, and community members can work together to build upon and create more capital contributing to successful learning environments for students.

The integration of technology into urban environments has not had a sustained positive effect absent broader school and community reforms. Factors such as instructional leadership, professional development, and

effective pedagogy must also be considered if technology is to meaningfully influence student learning. Libraries, alternative and supplemental learning centers that de-emphasize remediation and emphasize fostering student creativity, may also provide valuable opportunities for urban youth to use technology more effectively. While my study examines only a small technology-based intervention, which targeted marginalized youth in an urban setting, it provides insights about reimagining a pedagogy in which educators, civic leaders, and families work together to create powerful extensions of learning at community sites. Optimistically, this will aid in further understanding the needs of underrepresented students and reconsideration of more effective pedagogical practices for educators, specifically when using ICT.

Chapter 3

Methodology

This qualitative ethnographic case study explored how the activation of social and cultural capital, such as those found in funds of knowledge and community cultural wealth, contribute to middle-school aged students' engagement with computers at a local summer alternative learning program. The study looks at ways the engagement of adults (parents and staff) has helped them to: 1) shape their imaginations and discover their place in the scheme of life; 2) fashion networks of communication and affiliation; 3) form identities and make use of the education fare presented to them in sites of formal teaching and learning; and 4) increase their ability to generate technocapital.

For these purposes, the use of a qualitative ethnographic case study was compelling to decipher the research questions, which are: 1) what aspects of social identity and funds of knowledge/community cultural wealth influence how underrepresented youth take pleasure and become motivated to use technology in their lives, in and outside of educational settings, and 2) what are the ways (if any) that the purpose of the summer educational program and the interactions that took place relate to and utilize culturally relevant pedagogy in STEM-focused educational opportunities to influence social identity and the development of technocapital. It is my desire that the

study impacts educational practice and provide a connection with educators' realities around the intersecting roles of culture, pedagogy, and technology.

Rationale for Qualitative Methods

According to Maxwell (2005), there are five intellectual goals of qualitative research: 1) to understand how the participants in the study make meaning of the events and experiences that they are involved with or engaged in and how their understanding influences their behavior; 2) to understand the particular context within which the participants act and the influence the context has on their actions (understanding the unique circumstances in which situations occur); 3) to identify unanticipated phenomena and influences that may generate new discoveries and relationships; 4) to understand the process by which events and actions take place (getting at the process that leads to certain outcomes); and 5) to develop causal explanations (how x plays a role in causing y , what is the process that connects x *and* y) .

On a practical level, there are three goals of a qualitative study: 1) to generate understandable and experientially credible results to participants and others; 2) to conduct formative evaluations which can attribute to improving current practice rather than just assessing the value of the program; and 3) to engage in collaborative research with participants (Maxwell, 2005). Research has shown that a qualitative approach to determine patterns of behavior and cultural themes in the use of technology in

learning environments can provide scenarios for learning practices that other educators may emulate (Angers & Machtmes, 2005).

Since this study focused on the beliefs, context factors, and practices of marginalized youth, an ethnographic case study is appropriate for this study. The term ethnography derives from Greek 'ethnos' meaning 'nation, people, folk', which represents through writing the culture of a group or community (Parker-Jenkins, 2016; Philipsen, 1992). Ethnography, as defined by Creswell (1998), involves describing, interpreting, or representing a cultural or social group or system through the identification of patterns, descriptions of formal and informal local relationships, and descriptions of tacit and explicit understandings and meanings. In ethnography, researchers aim to make sense of places and circumstances in connection with the overall social setting and all social relationships (i.e., in context such as the wider economy, government policies, etc.) (Parthsarathy, 2008); within this, the researcher captures the lived experiences and participant insights (Cohen, Manion, & Morrison, 2007; Parker-Jenkins, 2016, Seale, Gobo, Gubrium, & Silverman, 2007). The researcher is immersed in the day-to-day lives of people and the one-on-one interviews with members of the group.

Unlike traditional ethnography where the researcher attempts to be objective, sometimes ethnographic researchers advocate for the researched community, study issues of power, and hegemony and dominance while bringing increased awareness to political and societal issues (Apple, 1996; Creswell, 1998; Douthirt-Cohen, 2013; Foucault, 1980; Parker-Jenkins, 2016).

This study is grounded in that tradition which seeks to advocate for a marginalized population. Ethnography, a cultural endeavor, is a means to explore, explain, and/or examine culture (Douthirt-Cohen, 2013). I find it valuable to consider more deeply the aspects of the ‘cultural’: the ‘heavily context-dependent fluidity and dynamism of cultural representation, cultural identities, and cultural matters’ (Douthirt-Cohen, 2013) vs. the stagnancy and bounding of culture; whereas ‘cultural’, embraces the complexities of cultural identities and cultural encounters and minimizes the limitations of “imaginary segregation and false boundaries” (Douthirt-Cohen, 2013, p.33).

Ethnography was chosen because of the value placed on observation, conversation, the exploration of how a cultural group works; but most importantly, the opportunity to privilege the voices of youth and their advocates in the larger context of technology use.

Case study research is typically used when a research topic is broadly defined, covering several variables and not just isolated ones, and may often rely on multiple sources of evidence (Yin, 2003). The case study method is employed when the researcher deliberately wants to cover contextual conditions that are likely to be pertinent to the happenings of the study (Yin, 2003). Case studies can be explanatory (e.g., dealing with cause-and-effect relationships), descriptive (e.g., attempts to provide complete descriptions of phenomena within their context) or exploratory (e.g., attempts to define questions and hypothesis for a potential subsequent study). This project was designed as an ethnographic case study to better understand how the youth,

individual and group participants used and made meaning of their technological experiences at an alternative learning site.

An ethnographic case study is defined as consisting of observations over time in a natural setting within a bounded system. The observational aspects of ethnography are used to understand the cultural happenings, whereas the aspects of the case study are used to contribute to the knowledge of the individual, group, organizational, social, political, and related phenomena within a particular place, space, or time (Yin, 2003). Using the ethnographic case study method allowed for exploration of actions and events of youth participants within a natural setting, providing a deeper contextual understanding of technology use and meaning for middle school students at an alternative learning site. Such as in this research study, exploratory ethnographic case studies can be conducted over shorter periods to explore narrow fields of interest to help develop hypotheses (Ingold, 2014; Jeffrey & Troman, 2004).

The cultural considerations for ethnographic case study research are highly relevant in this study and incorporates: 1) the inclusion of context as an essential component of the research; 2) the attention to the researcher's process of self-awareness and self-reflection; 3) the ability to capture the meanings made by participants of their experiences; and 4) the opportunity for previously silenced voices to be heard which creates awareness about marginalized populations (Morrow, Rakhsha, & Castaneda, 2001).

As in keeping with ethnographic case studies, data collection included participant observation, structured and informal interviews, and triangulation of interactions and observations of key informants. The limitations of this study that are relative to research time, engagement with the data, and the extent of the findings lend to defining the research as a case study. Therefore, this work is a hybrid of ethnographic and case study research.

Silverman (2000) reports that this type of immersion into the field, typical of qualitative research, presents concerns for validity and reliability of the researcher's own interpretation of the participants. However, Agar argues that "when the site of an ethnographic study is more familiar, the differences and 'depths of interpretation' can become more nuanced" (as cited in Douthirt-Cohen, 2013, p.32). In efforts to support validity and reliability, member checks were conducted by initiating and maintaining an active substantiation of the data between myself and the participants. At any time, participants were allowed to review pertinent field notes and observations if they had a curiosity about what was recorded. By using a qualitative ethnographic case study design, I developed an understanding of how the cultural aspects of the youths' 'being' (i.e., evolving factors of their objective and subjective realities) intersect with the different ways and purposes marginalized middle school youth use technology. The aspects of the youths' 'being' is a bit different than the youths' 'identity' in that being encapsulates identity but is not stagnant and flows beyond how something is defined for a particular time and space.

Program Description

Camp Youth Empowerment (CYE) is a six-week summer program operated by the Lincoln Community Center (LCC) located in an ethnically diverse, historic urban neighborhood. The camp theme for summer 2013 was “Building Main Streets”, which encompasses the LCC’s mission to empower youth as productive, self-sustaining citizens through academic and life skills preparation. According to the camp’s proposal for the summer of 2013, activities involved: 1) managing the design, construction, and vegetation of a community garden; 2) creating a recycling and rain barreling program; 3) taking leadership by becoming “Green Ambassadors” and performing in community outreach; 4) building cultural competency and awareness through the study of West African culture, history, art and music, clothing and food; 5) auditioning for and acting in the community play “Anansi the Spider”; 6) identifying and selecting movies and field trips; and 7) competing in annual basketball tournament with a nearby camp. STEM related learning goals were employed in all activities.

Overall, the camp was designed to address four specific needs of youth and the surrounding neighborhoods: 1) build community and a sense of belonging to reduce violence and conflict; 2) challenge children by helping them succeed academically and addressing low performance issues derived from local schools with challenges meeting adequate yearly progress (AYP); 3) socially strengthen families and promote healthier lifestyles; and 4) help to master life skills necessary to develop healthy, self-sustaining productive

citizens. According to the camp's proposal and materials, these needs were determined through youth voice, choice, and parental input.

The site itself, and the Roosevelt-Lincoln community served by the camp and sponsoring community center, has a very rich historical cultural legacy dating back to the American Civil War. The Roosevelt-Lincoln community is home to a prominent historical university, prestigious jazz artists from the Harlem Renaissance Era, prominent historical African American theaters and a number of monuments celebrating African American cultural and historic contributions to the country. Like many urban communities across the country, the Roosevelt-Lincoln community has changed dramatically over the years – experiencing both economic hardship and renewal. Currently, the community is undergoing gentrification and is now considered to be a thriving residential neighborhood, with many elderly and youth community minorities feeling out of place or alienated.

According to the U.S. Census Bureau (2010), there were approximately 38,551 residents within the Roosevelt-Lincoln community (i.e., 52% Black; 33% White; 9% Hispanic; 7% Asian; and less than 1% Pacific Islander). From 2007-2011, the median family income for the community area code was reported as \$71,875 and 20% of community residents reported an income below the poverty level (United States Census Bureau American Community Survey, 2007-2011). The unemployment rate for the specific neighborhood of Roosevelt-Lincoln was over 15% and the median income was \$28,394 with 80% of school age children receiving Title I free and

reduced-price lunches and 32% of children living below the poverty level. Per the camp's proposal, the Roosevelt-Lincoln community is filled with violence, drug, and gang activity. The youth have no public playground in which to play, and a rival youth crew keeps the Roosevelt- Lincoln youth from enjoying the closest recreational center.

Despite the community challenges the youth face, the Roosevelt-Lincoln community is still considered a classic symbol of rich American history, African American heritage, and cultural diversity. As more affluent people have moved into the area, including new white residents, they revived the architecture of the 19th century Victorian style row homes and attracted new businesses. Nonetheless, gentrification has also increased the cost of living in the community and created concerns about the displacement of residents. As in many urban communities (see, e.g., Asch & Musgrove, 2012; Eick, 2009; Johnson Ragin, 2011), the concerns of gentrification present a variety of issues to the Lincoln Community Center (LCC) and the lower income residents of the Roosevelt-Lincoln community, including loss of identity, changing values, miscommunications, and cultural displacement. On the one hand, the increased variances of cultural representations allow for numerous "border-crossing" experiences when students step out the doors of their home to go to school, the playgrounds, the store, and restaurants; on the other hand, these literal and metaphorical "border-crossing" experiences can be disorienting and negatively affect youths' values, perceptions, and associations in a rapidly changing community. Perspectives of Appadurai

(1996), Giroux (1986), and Anzaldua (1987) influence my assumptions related to the examination of cultural encounters and the potentially new cultural spaces these encounters form in relation to the presence/activation of cultural capital and the youths use of ICT in various settings (i.e., home, school, community).

According to LCC staff, changes in the community have also included other changes in the demographics of residents (e.g., increased flows of people from varying racial, ethnic, and linguistic backgrounds). To address these changes, staff members have developed new programs and recruitment strategies. Successful approaches described by program materials include online student check-ups that involve the use of 'texting' and/or 'tweeting' to share progress and extra-curricular updates and an annual summer basketball tournament encouraging cross-neighborhood interactions (i.e., encourages the building of new relationships and introduces a positive form of competition rather than defending turf of a street block or a residential complex). To overcome language barriers, the center offers bilingual program flyers, affordable housing information sessions, technology courses, and English as Second Language (ESL) support.

LCC was founded by the Riverbend Association of the Church of Christ to provide non-sectarian educational and social services to the residents of the Roosevelt-Lincoln neighborhood. As for current employees, LCC has five key staff members and nine contracted staff members who assist with the summer program. Currently there are 15 board members, who along with

their church congregation support the center through donations and volunteer services, as mentors, tutors, chaperones, and career day speakers. The LCC staff considers the site a “community hub”. They refer to the community and the site as family-oriented with a lot of “pseudo-kinship” (i.e., every child is related or connected to someone in the community that has been involved with the site in some way).

The LCC serves up to 18 schools in the surrounding area. However, during the time of the study, the staff had secured a local feeder school to serve as the site for the summer camp. Shaw Elementary (pseudonym for the school), the school facility, allowed a larger space for indoor programming for the division of age groups for curriculum, theater, art, dance, a computer lab with Internet access, and a cafeteria (serving the youth free breakfast and lunch). Seven of the eight participants of the study attended Shaw Elementary for the 2012-2013 academic year (See Figure 3.1 for Race Demographics).

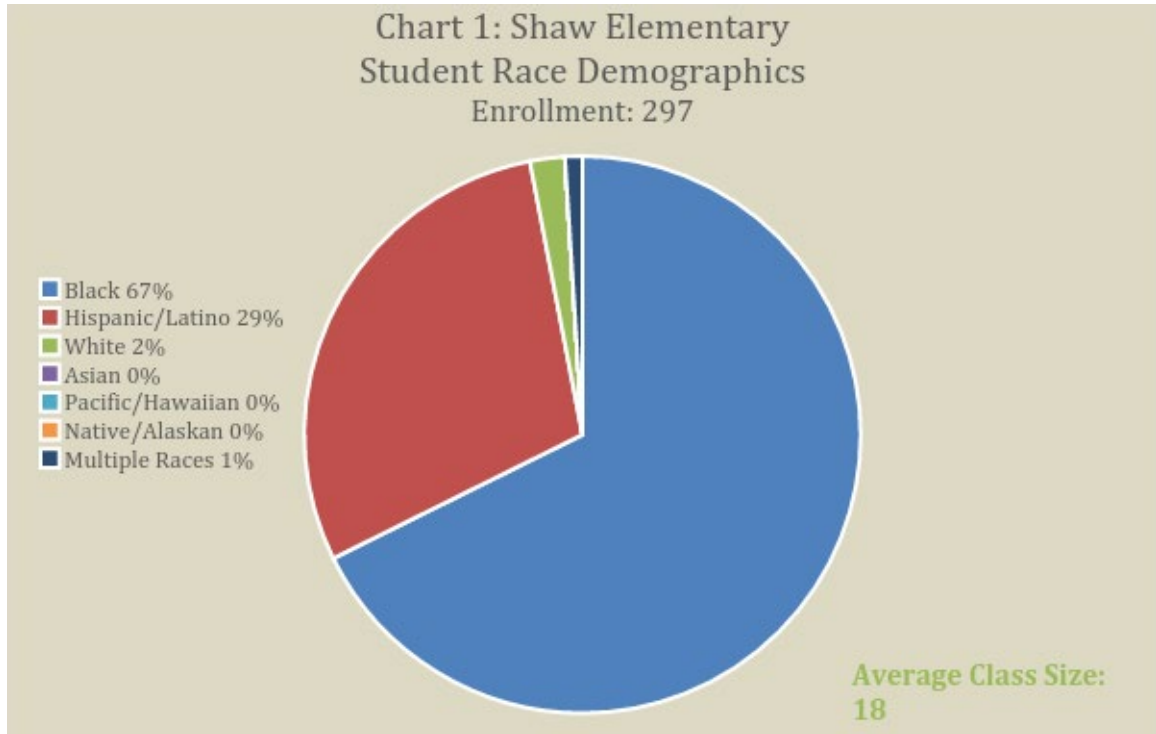


Figure 3.1: Shaw Elementary Student Race Demographics.

The LCC is situated between two low-income subsidized apartment complexes, Roosevelt Garden I and Roosevelt Garden II, which has a history tied to the civil rights era and the riots that occurred in many urban areas during the 1960s. After the riots, the Roosevelt Congregational Temple, and the Garden Congregational Temple, both congregations of the Church of Christ, collaborated to mobilize the neighborhood and work with the government to create the housing units and develop the Roosevelt-Lincoln community. These two churches have a decades-long history of demonstrating how people from varying levels of society overcome differences to meet the most essential of human needs—shelter and healthy neighborhoods.

Over the last three years, the LCC has collaborated with two other Roosevelt Lincoln nonprofit organizations: Building Bridges for Children (BBFC) and Helping Harvest (HH) to share in resources to meet the needs of the community. BBFC provides discounted broadband services and the families' use the BBFC medical clinic for camp physicals and immunizations. For the past three summers (2010-2013), LCC has served approximately 42 students each summer, but planned to serve 50 during the summer of 2014, as the summer program was housed in a larger space within a local feeder school.

I think that these characteristics of the community and its members (particularly the youth) are ripe for exploring the intersections of culture, education, and technology. I believe that this study can potentially confirm and identify findings that can affect perceptions about the needs for digital literacy and ways to maximize the utility of technology from a cultural perspective for marginalized youth.

Research Methods

In this study, I focus on eight middle school aged (9-12) youth who participated in CYE. The demographics of the summer participants for this age group were mainly African American youth from low-income backgrounds. The participants were recruited during their first week of the summer program after they had a chance to get to know the researcher and the nature of the study. As the researcher, I introduced myself to the youth and made an announcement during the morning program time to recruit youth

interested in participating. Staff had also suggested a few youths they thought would be good for the study based on their experiences using technology with the youth in the after-school program. After the youth shared their interest, I obtained their contact information and followed up with parents to obtain their consent within the following week.

In addition, staff, parents, and volunteers of the community program were also asked to participate in the study by sharing their feedback about the youth's' experience and engagement with technology. The staff were recruited through individual solicitation. All program staff, parents, and volunteers who participated in the study were at least 18 years of age or older. The program staff, parents, and volunteers were not selected for any specific characteristic except their affiliation with youth within the community program and their desire to participate.

Subject Selection

Due to the nature of ethnographic research, the participants that are involved with this study had an equal opportunity to be involved in all aspects of the study (i.e., through formal interviewing, focus groups, informal conversations, use of digital tablet to share and record experiences). I selected adolescents because it is a critical developmental period for youth. Adolescents are open to change and cultural influence, especially as they seek to develop an individual and group identity. It is a period when past experiences and surrounding ecology is highly influential of future behavior. In addition, an examination of these underserved minority youth as they

engaged with information communication technology created a stronger understanding of how technology might be used to enhance learning, improve pedagogy, and promote civic participation during an important developmental period. Speaking with the program staff, parents, and volunteers allowed for additional significant insights into the youth' experiences as well as the potential role of community programs in promoting desirable outcomes for underserved minority youth.

Consent Process

The parents/legal guardians of the desired participants were initially made aware of the upcoming research opportunity at the CYE orientation. At the orientation, I distributed a letter describing the study and an accompanying consent form to parents. Parents were given the opportunity to contact me by cell phone and/or email prior to the beginning of the study to discuss the study further and ask any questions. After the second day observing potential participants, I met with students to describe the study and contacted the parents of the students who expressed an interest in participating. Youth participants did not sign assent forms until parental consent was provided. Due to the age of the youth, it was important for both the parents and youth to consent to participate in the study, but also for the youth to indicate that they clearly understood the purpose and nature of the study. In efforts to support understanding and clear communication, I discussed specific aspects of the study, including my expectations of participants, before they provided their assent to participate in the study.

Furthermore, when interviewing staff, parents, and or volunteers, a consent form was given to them and was also reviewed with them prior to the interview. All of the demographic information presented in the study is self-identified or self-determined during the interview process including the pseudonyms. The adult interviews occurred towards the middle and the end of the program after I had more of an opportunity to observe the interactions of staff/family/volunteers with the youth participants. My full contact information was available to the parents, the participants, staff and/or volunteers. Every participant received a copy of the consent form for her/his records. Consent forms are stored in a locked cabinet in the researcher's home.

Procedures

Data collection procedures were designed to get a better understanding of how the cultural aspects of the youth's identity and environment may impact their use of technology and how technology use in social and learning environments impact aspects of the youth's identity. Based on youth interest and availability, after consent occurred, I had the youth participants complete a short pre-questionnaire to learn a little about who they were and their familiarity with different types of technology. The same or similar questionnaire was given as a post-questionnaire to see what changes may have transpired since the study began. Two examples of pre-questionnaire questions were: "What are your interests? What experiences have you had with desktops, laptops, tablets, iPads, cell phones?"

I also conducted weekly 45-60-minute audio-recorded focus groups and weekly 30-60-minute audio-recorded individual interviews to learn about the youth and how they made meaning of their technology experiences. As for individual and focus group interview questions, there are some guiding questions that served a dual purpose, which I asked the participants to consider in both the individual and group sessions. An example of this type of question is “Has participation at the summer learning program changed your attitudes and/or habits connected to technology? If so, how?” Although a bit repetitive, this allowed the interviewer to get a better gauge for whether a question asked in the individual format was a good topic for the group format.

Also, asking the same questions in both individual and group sessions could elicit a different response depending on format, which could help me as the interviewer have a better sense of commonalities and differences amongst individuals in the study. In the individual interview, prior to the group interview, I asked the youth participants if he/she would be comfortable discussing the same question with the group to minimize any feeling that an individual was being coerced into discussing something he/she did not want to share. In the course of the study, the questions changed slightly to appropriately address the activity or situation. The interviews were approximately one hour depending on the interest and availability of the participant(s).

A specific example of a question that was used solely during an individual interview was “What ways have you imagined using technology?”

This type of question elicited a more personal and intrinsic answer as opposed to an answer about an experience that he/she may have had in a public setting. A specific example of a focus group question is “How did you use technology within your community to learn about the theme for this week?” Discussing a question like this in a group setting was beneficial, as students shared experiences that I observed in a non-private setting and they generated ideas from one another. The individual and focus group sessions were also used as a time to discuss and upload data from the tablets to my laptop and then downloaded to Dedoose (secure online database); the data from the digital tablets was only uploaded in group and not discussed unless the participant indicated their desire to share that information with the group beforehand (see Table 3.1 for a description of student participants and data).

As for the digital journals, each participant was given an inexpensive digital tablet with audio and video recording capabilities and access to the Internet. The tablet was given to youth to support the youth’s ability to create a digital reflection on socio-cultural experiences related to their learning, particularly their thoughts and feelings about the use of technology with different learning/social activities. Whether students chose to use technology to explain their experience and the ways they used technology are meaningful. An example of a prompt used for the digital journal was “This week’s session discussed _____. Use your device creatively to express your thoughts and feelings related to this week’s theme.”

Prior to the distribution of the tablets, I trained the students on the features and use of the digital tablet and conducted a session on Internet safety. The student participants were not required to return the tablet at the end of the study. One digital tablet was assigned to each participant. The participants were told to bring the tablet to the site each business day for proper use and data collection. If the tablet became misplaced or lost, the students were still able to participate using technology at the community site, possibly at home, or through other forms of mobile media, just not the digital tablet designated at the study, which provided more mobility in capturing their experience at self-selected times.

Delimitations of Study

The delimitations to the study relate to the methodology and design. The delimitations include the selection of the participants, the timeframe of fieldwork, the identities and experiences of the researcher, and the site of study. A major concern was obtaining and maintaining the interests and/or involvement of the participants in the study. I was concerned with having the right approach to connect with the youth and the parents so that they would be willing to participate and be open in their communication. Although I feel that I was successful at building trust with most of the participants, it is possible that some participants did not fully disclose relevant experiences or concerns about the use of technology during the summer program.

Also, the minority, low-to-moderate income, urban participants at this community center may not generalize to other participants at similar sites or

even in the surrounding neighborhoods. By concentrating on this population of youth and adults, I delimited my focus to the beliefs and lives of youth and adults directly involved in CYE. Although I could collect indirect data about others, particularly participant perspectives about youth in their surrounding community and the adults involved with these youth, these data may not provide an accurate or adequate representation of potential participants associated with the study.

Time was also a delimitation to the study as the period of the fieldwork was the six-week duration of the summer program. This may have impacted my ability to see effects over time and may have affected the amount of data that I could collect. However, it was designed to be a case study for a particular group of students at a particular time and space. I attempted to extend opportunities to collect data by encouraging participants to self-report data outside of the camp's regular program activities through blogging and voice or video capture when a student did not feel like typing. Although these opportunities increased the amount of data available for analysis, a longer time period would have provided greater opportunities to build trust and examine topics in greater depth.

Because the fieldwork is rooted at the LCC site, versus multiple settings like homes or faith affiliated spaces, the data primarily focuses on interactions with youth and adults during LCC activities. While I provided youth with opportunities to record data outside these activities and while I attended events, field trips, and/or interviewed some participants outside of

LCC, my primary fieldwork site was within the grounds of LCC and the communication received from the interviews of parents and staff. Because there are relevant cultural influences grounded partially or fully outside of LCC, this is a delimitation of the study.

Lastly, the power and social identity differences between the participants and me could pose a delimitation to this study. Although I felt that I could build trust with participants, it is possible that my personal viewpoints may have influenced the data that I collected and my interpretation of the data. My interest in this topic is due in part to my experiences as an African American female, who has experienced marginalized educational opportunities with technology. As I analyzed my field notes, artifacts, and interview transcripts, I closely examined my descriptions to minimize personal viewpoints to let the participants' voices tell their own story. I used peer reviews and member checking – particularly by camp staff and parents – to verify my interpretations to identify areas that require clarification and greater sense making.

Table 3.1: Information on Collected Student Data.

<u>Student</u>	<u>Gender</u>	<u>Age</u>	<u>Bi-lingual</u>	<u>Ethnicity</u>	<u>Length of interview minutes</u>	<u># of Interviews</u>	<u># of journal reflections</u>	<u># digital artifacts</u>	<u>Tablet Time / Use Chart</u>	<u>Pre/Post Questionnaire</u>	<u># of focus groups</u>
Sara	Female	10	Yes	West Indian	148	5	4	3 images	1	2	3
Drake	Female	12	No	African American	127	5	4	4 min video	1	2	3
Keisha	Female	10	No	African American	90	3	4	0	1	2	3
James	Male	11	No	African American	122	3	2	0	1	2	3
Michelle	Female	11	No	African American	174	5	3	3 min video	1	2	2
Diamond	Male	10	Yes	African American	122	5	2	0	1	2	3
Rosa	Female	11	No	African American	80	3	1	5 min. audio, 2 min audio 2 min video 2 min audio	1	2	2

I collected documents from the youth who participated in the study. Examples of these documents are pictures, drawings, writings (digital and hand), emails, and audio/video of captured participant experiences related to the activities and learning at the summer program on their digital journal. The documents that were shared by the participants were returned to them once a copy was made. I secured all documents on a password-protected laptop in my home. I conducted all individual interviews and focus group sessions in a private classroom space at the summer learning program site.

I also conducted observations and compiled field notes of the youth in class, during enrichment activities at the summer learning program site, and on fieldtrips planned by the summer learning program staff. An example of the activities associated with the summer program are included in the appendices.

Adult participants were interviewed based on their insight and relationship with youth (see Tables 3.2 and 3.3 for a description of data on the adult participants). In addition, I collected documents from the community program such as newsletters, flyers, and lessons pertaining to curriculum. All interviews and focus group sessions with youth and adults are transcribed.

Risks

Risks for participating in this research study were minimal. The participants may have been a little uncomfortable with the initial use of the tablet device. To minimize risks, I ensured that the participants easily used the tablets during a training session and password protected their device (in case it was misplaced or lost) keeping concerns with technical aspects and unintentional

sharing of recorded data to a minimum. I also continuously worked with the participants to help them understand the best practices and protocols for appropriate and safe communication when and if using any social media sites on the Internet.

Minimal risks were mediated by 1) keeping conversations, documentation, and specific aspects of locations in which interaction takes place between myself and the participant confidential and anonymous; and 2) empowering the youth to reveal what they are interested in discussing. The participants were able to express themselves confidentially and presumably without the pressures typically associated with adults in a formal setting.

Table 3.2: Information on Collected Parent Data.

<u>Parent</u>	<u>Marital Status</u>	<u>Education</u>	<u>Employed</u>	<u>Ethnicity</u>	<u>Bilingual</u>	<u>Length of Interview</u>
Sarah's Dad	Married	College Grad	FT	West Indian	Yes	92m
Michelle's Mom	Single	HS Grad	PT	African American	No	114m
Buddy's Mom	Widow	HS Grad	PT	African American	No	43m
Drake's Mom	Remarried	College Grad	FT	African American	No	57m
Keisha's Mom	Single	Working towards GED	Unemployed	African American	No	115m
James's Mom	Single	Some College	FT	African American	No	101m
Diamond's Mom	Married	Some College	Self-Employed	African American	Yes	69m

Table 3.3: Information on Collected Staff Data.

<u>Staff</u>	<u>Gender</u>	<u>Education</u>	<u>Employed</u>	<u>Ethnicity</u>	<u>Length of Interview</u>
Director	M	College Grad	FT	African American	117m
Ms. T	F	College Grad	PT	African American	60m
Mace	M	College Grad	PT	African American	72m
Mr. G	M	Some College	FT	African American	72m
Ms. M (mother of James and staff member)	F	Some College	FT	African American	101m

Benefits

There were no direct benefits to participants, but some possible benefits included many informal and formal occasions to discuss the ways in which varying cultural aspects of their identity contribute to how they experience, imagine, construct, and repurpose learning and socializing with information communication technology. This study offered the youth participants an opportunity to discuss, reflect, and express their life experiences as well as expand insights and understandings of these youths' lives. Furthermore, benefits to staff and parents included providing them with opportunities to confer and reflect on the youth participants' experiences in providing educational, technological, and sociological programming opportunities for youth, specifically underrepresented/underserved adolescent minorities.

Moreover, this study may have practical implications for policymakers, researchers, educators, and community leaders who work with marginalized

youth in the development of empowering and affirming education programs that contribute to this population's success and the potential for new paradigms to help define new categories and structures for digital media practices and learning outcomes. An understanding of how these underserved adolescent minorities' social and cultural ecology may be embedded in digital media practices and learning can be used as important features of their education programs.

Confidentiality

The confidentiality of the participants' identities was accomplished in various ways: 1) pseudonyms were assigned to and used in all recorded and collected information (i.e., field notes, transcripts of informal and formal interviews and focus groups, and audio/video recordings pertaining to participant's digital journal); 2) all collected data and transcripts were stored on my password protected personal computer and Dedoose – a secure online database (<http://www.dedoose.com/LearnMore/Security.aspx>); 3) access to the recordings was restricted to me, the researcher; and 4) tablets were password protected and the participants were not able to use the tablet without entering their password.

Analysis of Participant Experience

In the analysis, I transcribed all interviews and summarized each participant's narratives in their own words without removing crucial elements of their experiences. The transcripts were entered into Dedoose, the qualitative management system, and the paragraphs were coded into themes and subthemes. My thoughts and insights were recorded in a memo file attached to

the participant's narrative file. The transcribed interviews and related notes of parents and staff were attached to the participant's narrative file as well. I identified themes across all the stories told and analyzed and described the themes within the fourth chapter. The fourth chapter tells each youth participants' story from: 1) a socio-cultural context addressing how the adults in their lives understood the role of ICT and developmental opportunities for the youth; 2) how each participant understood and used various forms of ICT in relation to time, place, and space of their ecology; 3) how social identity and funds of knowledge/community cultural wealth influenced the ways the youth participants took pleasure and became motivated to use technology in and outside of educational settings; and 4) themes of the participants' story which spoke to ways (if any) the purpose of the summer educational program and the interactions that took place related to and utilized culturally relevant pedagogy in their STEM-focused educational opportunities that influenced social identity and the development of technocapital.

Summary

In review of this chapter, I addressed the significance of the ethnographic case study and why this method was chosen to explore how the social and cultural capital (i.e., funds of knowledge and community cultural wealth) of marginalized youth influence their use of ICT in learning environments. I shared a description of the program in this section to highlight information about the site, the structure of the program, and the demographics of the youths' community.

This chapter also discusses the research methods that are used to obtain information about the characteristics of the participants the collection of data, and the interactions which had taken place during the study relating to tasks such as subject selection, consent process and procedures, concerns regarding risk and providing an understanding regarding the delimitations of the study. In conclusion, plans for analyzing the participant's experiences are shared emphasizing the structure of the following chapters.

This ethnographic case study contributes to future research by considering the social processes and institutions in which people's Internet uses and digital practices with ICT are embedded. Because studies have strongly established that inequality exists in association with Internet use and skills, further information leading to interventions and studies on improving Internet-use skills and the expansion of online activities could be valuable in guaranteeing that forms of digital media are accessible throughout society and not just for individuals who are already in an advantageous situation. This type of information is significant to making sure youth from diverse backgrounds have the potential to take advantage of the Internet. Understanding aspects of unequal access and usage pertaining to the "digital divide" or digital inequality is only a fragment of knowledge in comparison to understanding the complexity of underrepresented youths' experience of ICT, including how parents and other adults encourage youth to take pleasure and become motivated to develop technocapital (Graham, 2012).

Chapter 4

Results

The purpose of this ethnographic case study was to obtain and provide information about the beliefs and contextual, i.e., ecological factors, which contribute to the appearance and activation of social and cultural capital in the technological practices of marginalized youth. In this particular study, social capital is represented through the embedded resources of social networks due to social connectivity or civic participation in exosystems (involving extended family ties, parent's employment, respondents' immigration history, community relations, and neighborhood interactions) and/or mesosystems (involving family, peers, neighbors, and school). The terms cultural capital, funds of knowledge and community cultural wealth (i.e., aspirational, linguistic, familial navigational, and resistant capital) will be used synonymously in this study. From this perspective, cultural capital can be understood as the resources embedded within various social networks and community structures that youth can access to accomplish tasks and shape their identity and development.

This ethnographic case study seeks to understand how youth use the resources embedded in their social networks and community structures, specifically with regards to technology use. The study examines the following research questions:

1. What aspects of social identity and funds of knowledge or community cultural wealth influence how underrepresented youth

take pleasure and become motivated to use technology in their lives, in and outside of educational settings?

2. What funds of knowledge or community cultural wealth do parents and other adults mobilize to shape the social identity of underrepresented youth to encourage them to take pleasure and become motivated to use technology in their lives, in and outside of educational settings, to develop technocapital?

Eight middle-aged youth attending a summer education program (SEP) were selected as participants to share about their initial and current experiences using information communication technology (ICT). (See Table 3.1 in Chapter 3 for a description of individual youth who participated in the study.) In interviews, the youth participants gave a brief overview of ways they engaged with ICT (i.e., in learning, game playing, socializing, and creating). To obtain a more in-depth understanding of the participants experience, the parents and SEP staff participated in interviews. The parents of the youth participants (except for one) provided more insight into the experience of the youth participants and provided the data responses for research question 2.

The analysis of the participants experience shows a variance in the: a) skillsets developed by youth in their interaction with ICT; b) cultural and familial influences supporting the engagement with ICT; c) types of experiences used with varying forms of ICT in diverse environments; and d) perspectives on the future use of ICT in academic and potential career interests of youth participants.

The youth participants access to ICT, the Internet, and Wi-Fi also varied, even with the use of the tablets which was provided for use as a digital journal.

In review of the data, responses mainly from the parents, with minimal comments from the SEP staff, emphasized ways that funds of knowledge, community cultural wealth, and social identity from ecological environments influenced ways that underrepresented youth took pleasure and became motivated to use technology in their lives, in and out of educational settings (See Tables 3.2 and 3.3 in Chapter 3 for a description of the parents and adult staff, respectively, who participated in the study). The perspectives of the parents and staff serve as indicators for how the interaction at the program influenced social identity and the development of students' technocapital and technologically relevant identity.

The stories of the students, supporting staff members, and especially parents reflect unique and common perspectives and experiences that address the research questions by demonstrating: a) how youth participants use and understand ICT inside and outside the summer learning program; b) how the adults that interact with the youth perceive the role of ICT in promoting education and development opportunities; c) how social identity and community embedded resources influence how participants mobilize and activate the development of technocapital. This research is presented in consideration of the digital inequalities associated with race and class that shape how marginalized youth and their parents approach ICT and the importance of how informational needs and cultural perspectives should be accounted for in the pedagogical

practices/curriculum development of policies regarding ICT in education systems and community-oriented summer education programs. This research also considers how forms of capital can be built through social, civil, and academic experiences, including those relating to technology, which take place or can take place in alternative learning spaces. The policy relevance of these results is forthcoming and is addressed by identifying potential ways that technology can be made more relevant and useful for marginalized populations.

Overview

The following paragraphs provide a brief overview of the experiences of study participants, starting with the youth and their parents, followed by the staff at the summer program. This overview is meant to provide some context for the more detailed results presented in the subsequent section, organized by a broad category of results relevant to the study's research questions regarding the attributes of social identity and funds of knowledge/community cultural wealth which contribute to the development of technocapital due to the mobilization and activation of capital building opportunities by parents and other adults in their lives.

Students and Parents

Varying aspects of social identity showed up differently in the youth's motivation to learn and use technology both in the summer program and in their discussions about other environments such as school, faith affiliated space, community, and home. Participant's discussed beliefs and experiences that

encouraged a desire to be involved in activities and interact with people who can support their abilities to grow in ICT use and overall development. Faith, ethnicity, and community pride were areas in which varying youth, staff, and parents shared as ways in which they were motivated and found pleasure in using ICT outside of educational settings.

The majority of the participants' parents played a strategic role by being very deliberate in seeking out opportunities that they could provide for their children. Several of the youth were learning multiple languages while in school and with private tutors within their community. Many of the youth were engaged in music and fine arts and were considering plans and taking steps towards exploring career paths. All exposure to technology started at home but flourished from out of the home opportunities which occurred in places like school, faith affiliated space, libraries, and mainly the community center. For some, computer games and gaming systems were initial experiences with ICT which increased their motivation to develop stronger Reading and Math skills, learn about others, interact and build relationship with others (peers and relatives), and imagine new identities and opportunities to use ICT.

Comments regarding social identity came up the most frequently around internet and video games where in many situations the youth created avatars which often represented them or who they wanted to be, and/or how they wanted to be perceived. Often the youths' digital identity reflected their motive for how they chose to use technology at different times. In some instances, there were concerns about the ethos of individual youth based on their perspectives of why

they chose particular identities. Many of the youth shared they wanted to learn more, be able to communicate and relate to others outside of their local community and globally and saw technology as a vehicle for awareness and change. The youth were beginning to want more engagement out of their computer experience and were curious about different and increasing ways they could use technology.

Interacting with others on social media was an important experience. Some were open with their parents about having a social media account and some parents did not know. Several participants reported providing a false age to obtain access to social media sites such as Facebook, Twitter, and some gaming sites. For those youth participants whose parents did not know they had access to social media sites, the sites were often used between 1-4 times out of curiosity. For the youth participants whose parents were knowledgeable, it was a way to connect with family members and was used frequently; their accounts were mainly shared and monitored by parents.

The majority⁵ of the parents were advocates of technology use but shared concerns regarding safety, exposure to difference, having an appropriate balance of time, costs associated with access, and finding appropriate resources on the internet to aid the child's technological learning and academic development. The parents who participated shared concerns regarding ways to increase technological capital out of concern that their child will have low digital literacy

⁵ The parent of one participant was not interviewed during the study. Although I had met the participant's mother and she had agreed to her daughter's participation in the study, I chose not to interview the parent based on the participant's request.

skills and not be able to succeed. Although many of the parents have experience using technology at work, for their own academic development and for pleasure, many believe that their own technological skillset could be stronger; especially with the advances of technology happening so quickly.

Staff and Program

The staff which were interviewed (director and four instructors) were very deliberate in providing opportunities that were fun but also contributed to establishing a sense of connectedness, responsibility, and ownership to the youths' interactions as a citizen within their community. Perspectives, planned learning and social activities, social and academic-related actions of the staff throughout the duration of program operated as social forces influencing the technology use and sometimes lack of technology use. ICT use was based on the learning infrastructure which was flexibly geared towards the development of relationships between student and educators who used a culturally responsive approach to enhance and make their learning experiences more meaningful.

Although the technological offerings may not be deemed as specialized skills like designing and coding, the offerings served as access points for technological skill development that aimed to connect the youths' home and school experiences, thus contributing to the development of technocapital. The happenings at the site supported other environmental associations that contribute to positive development of technical, literacy, numeracy, and behavioral skills yielding an increase in technological, social, and cultural capital. These aspects of capital contribute to academic and workforce preparedness.

A few staff members felt that the technological experiences the youth received during the summer program could be considered as “surface” or “superficial” as they desired for the program to provide more productive engagement experiences with the students in their use of ICT. The staff shared that they would like to see youth have a more advanced understanding of technology use, increasing their understanding of multiple purposes and opportunities for use. Even from an evaluative perspective, the Director shared that he would have liked to give every student a tablet from all age levels that uses evaluative polls for a feedback loop to better elicit the youths’ experience. Staff also shared that they desired to increase technology use to computer design and apply the use of technology to music, arts, and robotics. They believed the surface work was a basic use of technology, a point of interest for a learning process and that additional programs related to design would show the youth’s creativity, deeper understanding of technology and purpose, and further develop the youth’s imagination.

Both parents and staff were asked about the way influences from technology, such as trending hot topics on social media impact youth perceptions of identity and civic engagement. Due to the circumstances surrounding the Trayvon Martin case, the staff felt that it was important to discuss racial profiling with the middle-aged youth (ages 9-12) out of concern for educating youth to be aware of unfair treatment on the street, in schools and communities and how this could result in illegal imprisonment and murder; as well as provide ways to dialogue, self-reflect, and learn ways to be safe, speak up and stand up for

equitable societal change. The use of technology to generate information and provide awareness of community voices was discussed by many youths and their parents as being an impactful lesson in addressing inequality and underrepresentation of social identities during the SEP.

During the program the youth used “Scratch”⁶ as an initial start to programming and was encouraged by staff to play certain games such as “Minecraft”.⁷ The staff hoped that technology use could lead to an increased difference in their level of sophistication beyond the basics. The staff shared that they would like to see the program incorporate STEAM (i.e., Science, Technology, Engineering, Arts, and Mathematics) while continuing to pursue goals in STEM (Science, Technology, Engineering and Mathematics) related objectives.

Specifically, several of the staff came onboard to assist the community center with educational goals related to STEM. Many of them had the desire to give back to the community and initially started as volunteers, but with their skillset, enthusiasm, and commitment to making a difference the volunteer opportunity changed into part-time and full-time positions. Their desires to serve were based out of concern for the development of the marginalized youth and their lack of enthusiasm for Science. Goals were created to make Science interesting, relative to their ecology, and more fun for the youth. The staff

⁶ Scratch is a visual programming language and website used as an educational tool to teach programming skills for youth ages 8 to 16.

⁷ Minecraft is a game that allows users to create worlds or learn to survive in virtual worlds that have already been created as part of the game.

desired to expand the STEM program to coding and robotics in the near future if funding allowed.

Administratively, the staff at the site struggled with the implementation of some goals. The program started a little late due to school being open for an extra week due to snow days which impacted planning time. Most of the staff saw an increase in youth behavioral concerns as affecting the desired implementation goals for youth and there were concerns that better guidelines should be created for discipline. Particularly, staff shared that as useful as they deemed technology to be in learning and social engagement, there were concerns with ICT being a distraction when it was time to focus on classroom-oriented activities which did not involve the use of ICT.

The staff were very adept at ICT use. Hardware such as SMART boards, desktops, laptops, and tablets were used, as well as a variety of Internet sites. Staff shared that the use of technology was key into connecting with different learning styles of youth (e.g., audio and visual learners) and engaging the youths' participation.

Participant Stories

The results reveal the domestication of technology – how activities with technology are integrated daily into the lives of youth participants; and also uncovers the youths' development of digital identities and technological dispositions associated with class ethos (i.e., embedded values that help define attitudes towards socio-educational institutions) and habitus (i.e., individual's sense of self and self-worth). The parent interviews illuminated observed and

discussed youth experience. The parent's perspectives showed the cultural resources they mobilized in support of their children's technology use. The amount of information provided in each narrative of the parents and youth participants is different due to life experience, how long the interviews lasted, and the amount of personal information they were willing to share. Here, I present their stories.

Sarah

Sarah, a 10-year-old female, who self-identifies as "Trinidadian" and "West Indian" attended the school that was associated with the community site and that is how she became aware of the summer program. Sarah resides with both parents and her younger brother. Although she was born in America, her parents are both native Trinidadians. Sarah's father, Mr. T, is an engineer who started off pre-med in college. His wife (not interviewed) is a receptionist.

Sarah's parents, particularly her father, set the tone for mobilizing and activating capital in and outside of educational settings to develop technocapital. Sarah chose to be a part of the study because she wanted to share her thoughts about technology and how she used it. When you first meet Sarah, she comes across as shy and reserved but after she gets comfortable with a person or in an environment, she comes across as witty, determined, and focused. Sarah seemed to have a 'matter of fact' type of attitude in her communication for which she sometimes seemed very straightforward and often short in her responses.

Within Sarah's home, she has two operating laptops, two tablets, and two smart phones. The tools are used for work, education, connecting with family

and friends, and gaming/exercising. Sarah shared that she often connects with close friends on Skype. Sarah indicated that currently she has more computer engagement through mobile technology and expressed that she mainly saw tablets and smart phones being used by family members and people within her community. Sarah's case demonstrates the evidence-based conclusion of how cultural values and productivity derive from socioenvironmental ecological factors (macrosystem, exosystem, and mesosystems) particularly from her West Indian ethnicity contributing to aspects of aspirational, familial, social and navigational capital. The values and beliefs which stem from her ethnic identity and experiences of parents influence her perceptions and integration of daily technology use.

Funds of Knowledge/Community Cultural Wealth Attributing to Technocapital

Sarah and her father both share elements of aspirational capital in relation to SRT and CuRT when discussing hopes for Sarah to broaden and refine use of ICT, particularly in navigation and utility of the Internet. In relation to SRT, findings show that Sarah and Mr. T's perspectives on the use of technology reinforces access to social and cultural capital that can provide a means for Sarah to transcend structural inequalities. Sarah and her father share a desire to enhance and further develop Sarah's academic skills related to seeking and gathering information and expanding her use of games beyond practice of skills to a more complex understanding of patterns to apply to life situations and the ability to create. In the interviews, both Sarah and her father discussed how as

immigrants, the life challenges and values of parents' culture and social networks support aspirations held by the family to improve the life of their nuclear and extended family. In relation to CrRT, the findings show that Sarah's parents act to socialize her into dominant cultural norms and standards in efforts to have a considerable advantage in navigating expectations and requirements of educational institutions. Sarah's parents aim to activate social and cultural opportunities for Sarah to learn new norms and standards and determine how to integrate them into her studies and identity.

When Sarah expressed her feelings, beliefs, and motivations for education and the use of technology, it was often related to her cultural upbringing in her home and border crossing experiences as opposed to experiences in school or observations and interactions with people using technology within her community. Sarah shared that her motivation for learning derived from experiences she had with her parents prior to starting public school. She was mainly homeschooled until the third grade. She stated,

Everyday my dad would take me to his office. He was a supervisor and I would sit underneath his desk, and nobody would know I was there. Under the table I would do my schoolwork and sometimes when I would take a break he would let me play a game on the computer...when I became a student he let me know that it would be hard because I would have to learn Spanish and Sign Language.

In the interview with her dad, Mr. T illuminated the perceptions shared by Sarah. Mr. T's perspective about technology and education was deeply based on cultural values and that the productivity of youth was based on socioenvironmental/ecological factors. In discussing aspects of Sarah's identity

that influence learning, civic participation, and technology, Mr. T gave his perspective on the different ways that children learn and the role he plays in engaging with Sarah to ensure that she maintains a positive attitude for learning, being responsible, taking time to volunteer, and having a strong work ethic. He shared that aspects of his identity, such as his own experiences with learning and technology, influence the way he supports Sarah's identity development and use of technology. Mr. T's perspective applies to strong ties of communication within his family/community (familial capital) which is relative to theoretical frameworks SRT, CrRT, and CuRT. Mr. T's perspective shows aspects of systemic and cultural factors that influence how Sarah learns and engages with ICT. Their family connects with the domestic and broader West Indian culture and community as an extension of family in maintaining history, values and traditions and to build present/future capital building opportunities for the West Indian community. Mr. T shared,

Based on my upbringing, some of the stuff that my parents did, I kind of changed that when its coming to her learning...So, what I did different, after school I sit with them and I teach them. So, we find out when she goes to school, she is little more advanced because she already knows the material. It is up to her now to take it to another level. So, the values of learning or training are instilled in her...I always tell her 'Mommy and Daddy will not be around all the time. So, from now you've got to prepare yourself to stand on your own two feet by doing what you got to do. All I'm asking you to do right now is to go to school and learn and grasp the information'. So, you know, I'm always talking about college. Saying 'you've got to have a goal in which you've got to achieve...So, I try to instill the positive values in them rather than to be negative.... I try to maintain the positive attributes constantly...to make a difference in someone's life.

Mr. T is aware of the importance of navigational capital. He recognizes the importance of developing Sarah's abilities to navigate social institutions that

are more representative of the dominant culture and less likely to address barriers of access and representation of marginalized populations. From a socioenvironmental and ecological standpoint, Mr. T addresses an aspect of the digital divide and digital/social inequity regarding the experience of any marginalized youth, let alone his daughter. He stated,

...but in terms of productivity, I think it depends on the kid's circumstances. If you have a child, let's say that their lifestyle is normal. When I say normal, I mean that they are not at the disadvantage. I think they're more productive in terms of using the technology and running with it. But when you have kids that are disadvantaged, you find that they are not nearly as productive because what they are going through at the time is so hard that technology may not be the number one criterion. At that time, they may have more stuff in mind in terms of just simply survival. You'll find that the instruments, in terms of technology, may not be on the high burner because of the situation. They have more, I say, important stuff to think about because of their situation.

Mr. T felt strongly that Sarah had the ability to be creative and productive in the use of technology because of access and the values and beliefs relative to her lifestyle which supports social, learning, and technological growth opportunities. In addition, he stated,

But in terms of (Sarah), her lifestyle I would say is normal. See right now, she would take technology. She would run with it and use it because life is easy for her. The generation now, I think if you give them a chance, it's stuff that they would do; because I watch (Sarah) on her computers, she can do stuff like anything (laughing). So, I feel this generation right now is at the higher level...it all depends on the situation of the child. If she's comfortable at home and has access, I think they would be more productive.

Mr. T encourages Sarah's use of technology to increase knowledge and understanding with the development of social capital, particularly in relation to social institutions which support how individual navigate places within currently experienced and future environments. His own experiences with technology

have led him to believe in the importance of having technocapital as well as the challenges that could arise with the lack of access to training and support for technology use. His first experience using ICT was in college in 1992 with the use of the TI-85 a graphing calculator used for solving complex functions and assisting with the plotting of graphs. He knew that he had to overcome his fear and not be stuck in past methods of working by hand. He shared that this period of change was a time when professors would no longer allow students to turn in handwritten assignments. He stated,

At that time, the professors came to the point where you cannot write anything anymore you got to type it and send it in. So, that change, see going through that change, it was a little bit difficult. I had to accept that with anything that you used, you try to go with the flow but when the new stuff come on board if you don't have the right training and support there will be some barriers.

Although Mr. T was the parent who participated in the interview, Sarah had shared about her mother's influence as well regarding Sarah's motivation to use technology. Sarah shared that her mom has had the most influence on Sarah's use of technology. Sarah indicated that her mom often used ICT at home in comparison to her dad who mainly used it for work. Sarah shared that her first experience with ICT was a laptop in which she aimed to model the observed behavior of her mother. She stated "I was just pretending I was typing because I was following my mother and what she did on the desktop. She was like (mimicking typing) and I was like (mimicking typing)."

In the interview, Mr. T indicated his first experience with the internet occurred approximately in 2009/2010. He stated that he would typically aim to avoid the use of the computer and that he was stuck in the older methods of

communication for a very long time. He had recently just started to break out of traditional methods of communication and engage more with the computer due to the promotion at his job. He shared that they have a computer in the home, but it was his wife who purchased and educates him on computer use because he did not want to have anything to do with it. When he comes home from work, he typically stays away from the computer unless he has to do something work related or email family and peers. He shared that his wife has more patience to learn and figure things out on the computer.

Although Mr. T limits his own use of technology, he feels that he is very much an advocate of how using technology can impact Sarah's education and works to maintain open communication with her regarding her use of technology and having an awareness of both advantages and disadvantages of using technology. He shared that Sarah and her brother use several learning websites on the computer for Math and Reading that they use at school. As for social media sites, there is not much use. He shared that Sarah has very limited access. Sarah's mom takes responsibility for establishing boundaries for Sarah's use. Mr. T felt that Sarah was "not free to go unaccompanied and just search the web." He indicated that his conversations with Sarah about technology have been minimal, but he has shared with her the importance of using technology as a tool to complement her education. "You've got to use this stuff to help advance yourself." Mr. T. told her. It's always beneficial to be ahead of the game in terms of knowing what's there and using it in the right way." While monitoring Sarah's

computer use may pose limits on her development, Mr. T seemed confident that Sarah would further develop her skills and technocapital. He stated,

See you got to remain within your barriers. We got to know what you doing with it when you're on the computer 24/7. But give it a chance, she will go beyond what we require her to do. Like any kid. They go as far as some information that they look at ... it might be a bit uncomfortable, in terms of, I may not be comfortable with the material that she is looking at or trying to get involved in.

Overall, Mr. T expressed confidence that with some initial limitations Sara would branch out and use her technocapital to further her knowledge and development.

Influence of SEP Opportunity on Social Identity and Development of Technocapital

Sarah reported that her overall learning experiences have been good and that school and learning are very important to her. This was the first year that she and her brother had attended the summer learning program. However, they had sometimes attended activities at the community center's after-school program when their parents could not immediately pick them up after school. Sarah liked "art, music, and dancing" at the summer program the most and this was represented in videos and images she shared in socializing with the focus group regarding her experience at the summer program.

Sarah mostly used the tablet during the SEP to share her experiences at home and at Caribbean/Trinidadian community events; to research murals within the District of Columbia and other field trip activities prior to visiting; and for taking her own pictures. The opportunity to learn with peers and capture the learning experiences influenced the creative ways that she used technology.

Sarah reported that she was very familiar with the various forms of ICT and mostly used technology “for getting information and just for fun.” The information she sought after expanded academics, included access to Caribbean news, sharing family recipes, and exercising. Sarah extensively shared how her family used ICT to communicate with other family members throughout the country and globally. Although Sarah had access to Wi-Fi for the Internet in her home, she was familiar with the places that had free Wi-Fi in the community. She believed that the experiences at the SEP contributed to her knowing more information about communication technology and was “excellent in education fun.” She mainly liked to use technology for entertainment. Sarah shared that she did not recognize culture in video games, learning activities nor social sites. She rarely saw representations of her identity (Black female - Caribbean, African, American). However, she shared that learning how to use technology to research “racial profiling” at the SEP brought her to an awareness of how viable social media platforms can be in bringing about an awareness of community voices in relation to mainstream media.

Mr. T felt very positive about the SEP because of the values the staff aimed to instill in the kids through the curriculum. Mr. T shared that the culture of the SEP was different than what he was used to and that he remains open to learning and experiencing difference in culture. He spoke positively about the interactions and learning activities that his kids (Sarah and her younger brother) experienced daily in the SEP. Mr. T shared,

... the program itself, in terms of the involvement of other things. That I've never really um (pause)...I'm used to; the styles, it was different in terms

of some of the stuff I see them doing. I was amazed because I was born in Trinidad, so a lot of the American stuff for me you see it and you learn it, and you evolve in it. So, some of the stuff when I see them do it and then when they came and when they were practicing and talking about what they were doing during the day I'm just listening and just taking in what I hear you know. In terms of values, I think they have a positive note in terms of respecting each other. And I hear they were instilling in the kids, not to laugh at each other and not to make fun of each other, acceptance for what it is and to care for each other. So, I was impressed with what we're seeing in terms of the values they were trying to instill in the kids.

Overall, Mr. T recognized attempts to build community at the SEP, including social and cultural capital for the students, and he endorsed and supported these efforts.

In summary, Mr. T mobilized and activated socio-cultural capital resources to build technocapital for Sarah through his awareness of the need to navigate requirements and balance adaptation to changes (i.e., in environments, technology, and educational institutions). He was an advocate of placing value on both border and boundary crossing experiences and perceived them as contributors to learning and achievement for which adult guidance was pertinent. The use of technology by both of Sarah's parents in social, work, and academic environments (i.e., macrosystem, exosystem, and mesosystems) strongly influenced Sarah's motivation and comfort level in the use of ICT.

Drake

Drake, a 12 years "young", African American female was one of the oldest participants in the study. Drake attended a middle school approximately 10 miles away from the community site. The school that she attended was a STEM charter school with an academic program that focused on Mathematics and information technologies. She perceived school as "fun, interesting and boring

sometimes.” Drake was very easy going. She laughed and smiled a lot. She seemed to be very introspective and seemed to continuously be processing interactions and experiences. She loved fashion and firefighters and was interested in becoming a firefighter for her career.

Drake chose to be a part of the study because she wanted to – in her words – “express myself.” She had been a member of the youth program for 2 years. She had one brother and two cousins that attended the afterschool and summer program in the past; however, she was the only person who attended the summer program at the time. Drake’s grandma lived in the same building where the community center is housed and made Drake and her mother aware of the program.

Drake’s biological parents are divorced. Ms. O (Drake’s Mom) shared that Drake’s father and mother co-parent and are married to other people. Both parents were mindful and worked together to apply aspects of aspirational and familial capital to Drake’s social and academic experience. They aimed to be on the same page within their different homes concerning opportunities for Drake, particularly academic experiences. Ms. O shared,

This (co-parenting) has worked well for us, when she has PTA all four of us goes, you know just showing that everybody is all in one accord and agreeing with the teacher, even if we have sidebar conversations a little bit over the top, we don’t share that with her. And I think her seeing that has worked well for us.

Although Drake’s parents were divorced, both households sought to provide Drake with access to forms of capital to enhance her learning and development. Drake’s case denotes collaboration between blended family parental structures

to mobilize and activate aspirational and familial capital to enhance Drake's social and academic experience. These aspects of capital, along with navigational capital (i.e., exploration of and within technological spaces) and resistant capital (i.e., resistance of dominant cultural narratives about race, privilege and justice) are pertinent in Drake's technology use and further development of technocapital.

Funds of Knowledge/Community Cultural Wealth Attributing to Technocapital

Prior to the study, Drake was gifted with a tablet from her parents. Her parents heavily monitored her use and were reluctant about how often she used technology and Drake's use of social media networks. Her parents were cognizant of known challenges regarding technology use and social media networks, yet they recognized that understanding ICT would be greatly beneficial to Drake's skill development academically and would help her to be successful in her choice of career. Ms. O addressed the parents' mobilization and activation of ICT use to develop technocapital as well as boundaries for ICT use, based on cultural beliefs, apart from academics/career building opportunities, she shared,

Well see she just gotten the tablet for Christmas, so she had already had that experience with it and then she's not allowed, but I guess we're just behind on the times or we're a little bit overbearing, but she is not allowed like to go on a bunch of social networks. However, she is allowed to go to google plus and she was able to interact with some of her school friends over the summer using the tablet just for Google Plus, but other social networks like Facebook and, you know, Twitter and stuff like that she is not allowed to have that as of yet. Umm, just because, I just don't think it is appropriate yet, but things like Google Plus, and she uses this, umm, her school uses, umm, it's like called Edmodo, and they kept in contact on the tablet through that. So, she did experience some socializing with, umm, you know, her classmates over the summer.

Ms. O is pretty astute at using technology which provides Drake with motivation and navigational capital in the exploration of technological spaces and tools. She shared,

Yeah, I am actually pretty tech savvy. I used to have Facebook and Twitter and all of those things and I am not sure. Well I guess some parts of it to me are very good to, uhh, reach out to people you haven't seen or talked to or keep in touch with family and things like that, but a lot of what I see out there is very negative and, umm, I just don't, I just don't do it. Like myself with my job we do Google Plus and Google Group and stuff like that but I don't, I don't. I started to stray away from the social, well let me say Facebook and Twitter things like that so. Other than that, I use the Internet a lot, but I am not sure if we talking social networks specifically or just technology period I am not sure.

In terms of technocapital, Drake's mom wants her to know all that she can about ICT use and ways it can be used to help other people. She stated,

I have seen her get her greatest joy when she helps other people. So, if she knows all about technology and knows how to maneuver around this app or do something in this program and share that then I think that works for her.

Ms. O shared that her experiences with technology impacted her decision to have her daughter embrace technology and discussed her intentions on identifying a school for her daughter to attend. Ms. O reflected on discussions shared with Drake regarding how much technology has changed, from typewriters to desktops and laptops, from telephones to mobile phones, and the evolution from a floppy disk to the cloud. She shared,

I was looking at different schools and everything with regards to how technology is changing...She actually attends a technology school. There are no textbooks everything is online. I could look at her homework right now, I could pull it up from anywhere, I could pull it up on my phone, you know off her teacher's actual website; they all have their own website on a site called Edmodo. I can see, you know, grades, bad grades, good grades. So yeah, I am definitely a huge fan of it, I think their whole

generation is just technology based anyway but, I am a huge fan of it. I like that she is able to maneuver through her computer like nothing I have ever seen before. She helps out at home a lot. I love the fact that they don't have books they carry around. I think that her grade level carries around the chrome book. Next year she'll have like the iPad and I think it is helping them towards what the future is going to be like. By the time she graduates twelfth grade she will have an associate degree from PGCC (Prince George Community College), early college because of the classes she has taken so that part excites me the most, and every school doesn't offer that so that is exciting.

Ms. O believes Drake's technology experience at school contributes to social capital through the provision of resources for understanding and navigating different environments. Ms. O believes the school is very supportive of Drake's overall learning experience and academic engagement. Ms. O believes that there is a connect in Drake's learning and capital building experiences between home and school. The technological things that she has learned at school are shared at home. She shared,

Well for whatever reason I was not sure how to do small stuff like, screenshots and stuff like that. I am pretty good but, I know she is better. Which is okay because I want her to be better than me. So, you know I don't mind. She is good, good to have around to help.

Ms. O shared that it was important for Drake to understand that technology, the ability to have it, learn about it, and use it is a privilege. Ms. O discussed her childhood experiences and how identity plays a role in the ways that she provides for Drake overall. Ms. O stated,

She knows that I didn't have an easy childhood so that plays a huge role in why I am at times overbearing and why I have these expectations and why I want her to work for certain things and earn certain privileges and you know things like that. My identity does play a huge part in the person that I am trying to mold her to be, umm, just to avoid all the things that I didn't have. I was one of those kids that, and that's why I am so passionate about it, I was one of those kids in the shelter who didn't have, so it is important for me to let her know that iPod you have, tablets you

have, laptop and all of those things could be taken away if you're not doing what you need to do at home, if you're not doing what you needed at school. Even though we need technology ..., all the different outlets she has, it is a privilege, it's privilege for her. She has to earn those things; it is important for me.

This statement emphasizes how class ethos and individual habitus can shape digital identity. Ms. O addresses her aspirations for Drake to leverage technology to achieve valuable, personal and social goals, going beyond the barriers of inequity.

When asked if aspects of Drake's identity impacts how she explores or uses technology, Ms. O addressed how the use of virtual apps have provided career pathway information for male dominated fields. The exposure that the app provides enlightens her mind. Ms. O stated,

I think there will be a great many things happening, things happening to her not necessarily because she is my daughter, well because she is my daughter (chuckle) but, uhh, I think though she is shy and she does go and sometimes use some apps on her tablet that have a type of virtual world that shares careers...and sometimes she is a soldier and different things that she wants to be. I don't know. I am just anxious to see what her path in life will be.

Regarding establishing boundaries, Ms. O pointed out her concerns regarding the permanency of social media and desiring to protect Drake from participating in and being the recipient of negativity on social media. However, because of the structure set around school and other capital building activities (i.e., mentoring class, chores, homework, track), there are no concerns with the amount of time she uses technology, just the concern with social media. Per Ms. O, there are no concerns with video game use online, or connection with strangers. Drake does not possess a video game console. Ms. O discussed the

encouragement of family members who support Drake's use of social media and her concerns with protecting Drake from negativity. Ms. O shared,

I have seen family members and close friends say and do all types stuff that's just not appropriate, and pictures and things like that, and I am just concerned. or proficiency You know I trust her but, just sometimes you know we are, even if she retweets something or reposts something from somebody else I don't want her associated with ... As long as I can protect her against craziness and all that stuff, I am going to protect her. That's why there are boundaries cause once it's out there in her name it's gonna always be out there. So that's why right now I think she is too young ... I have gotten a lot of backlash from that, 'Oh you need to let her do xyz.' She's got 4 or 5 cousins that are the same age as her so of course we gotten 'Such and such is doing it so why can't I do it?' Cause those are their parents and they have a different way of doing things. So from the parents I have gotten 'Oh you need to let her do it, or she'll sneak and do it.' But she if she sneaks and does it she'll lose a privilege. Our parenting is different, I just want different from her ... I just want it better for my kids, so that's just that... I definitely don't want her name associated with any negativity whether she does it first-hand or it's posted on her page accidentally, or from friends. I just don't want her associated with that.

For Ms. O, boundaries are about protecting Drake and building her up to make the best use of her time in productive and safe environments. She shared that she and Drake had several talks about virtual spaces and how aspects of identity were discussed and seen in virtual spaces, sometimes deceitfully and what she should do to protect herself. Ms. O felt it was important for Drake to be aware of the differences in identity, having respect for diverse cultures and the ability to know how to navigate in different environments with people of different backgrounds and lifestyles. Ms. O shared,

When we had the virtual talk, in addition to saying you know, just because a person they're a certain age doesn't mean that's their age. I also express to her just because they say it's a woman or it's a man doesn't necessarily mean that is a woman or a man. You know we have had family members who are in that lifestyle and so, who I trust completely with the children, who are teenagers now with what's appropriate going on. Because it is going on in the schools and everything like that, she had

some friends at school who said that they are bisexual and things like that; so she definitely knows about it you know from talks at school and, umm, I think they have had a human growth and development class so she is hearing it from both ends, from school and at home. I am sure that she has seen on the Internet depending on, because they do use Chrome book a lot in health class so that's where they talk about sex and stuff like that. I am not necessarily sure if she has seen something online but, if I had to guess I would say yes. You know they send permission slips home and they say this is what they are covering in the next few weeks and if you don't want your child to participate then you need to stay on the permission slip. So, I am pretty sure and that's on the topic.

When asked what were some of the most important issues she felt Drake will have to confront when having border crossing experiences related to home, school, community, and broader aspects of society, Ms. O shared about the importance of Drake remembering that everyone is different,

I never want her to lose who she is in those types of transitions ... I believe it's part home, and at school, and the community. They all will you know be okay. I think she is okay; I just hope because it is a very, very, tricky time and age and stuff. I will just stay in her ear and watch in on that border crossing, so she won't fall through the cracks or the concrete ...

Mrs. O recognizes that Drake will face many developmental challenges, especially at her age, but believes that by providing Drake with varies forms of capital (e.g., familial, aspirational and navigational), Drake will successfully transition into young adulthood.

Influence of SEP Opportunity on Social Identity and Development of Technocapital

Ms. O shared how she perceived the summer program as a mentoring opportunity for Drake that mobilized social capital for Drake. She shared,

I guess I looked at it as a type of mentoring type of program, that, when you guys used technology a lot in your meetings and as a way of communicating and everything, like that was not necessarily the primary goals. I think what we did with my daughter was ... Well what, I did want

her to work on social skills a lot. So, meeting and having that open line of communication when holding your meetings helped because sometimes she is very shy, so I set a goal as far as it comes to her socializing and you know communicating with people, because she is sometimes very timid and shy. So, I know she got experience with that because she met new people and did a few different things where she was not really forced to. She was a part of a group, of course but, it gave her more exposure to fill in social skills.

In sharing about her perception of the program and her daughter's experience, Ms. O shared the excitement that her daughter had about participating in the program and the excitement about participating in the study. Earlier on, the center director had shared that my interaction with the participants may have some impact and this became apparent in Ms. O's perspective about Drake's experience. When asked if there was anything she would change, Ms. O shared "maybe meeting more, cause to my understanding you guys met just once, and I know she was really excited."

Drake thought of the SEP as "fun". Her experiences with information communication technology hardware included laptops, tablets, and cell phones. Other family members also used these types of technology. She shared that she mainly used these types of technology for "school and music". Prior to the summer learning program, she shared that she used ICT for "murals and scratch". She shared that her use of ICT had not changed since she began the program. Although Drake did not feel that the SEP contributed to her knowing more about ICT, she did share that she enjoyed the opportunities to learn and interact on the field trips. She shared that she least liked the "work" which took place as part of her learning experience. Conflictingly, she shared that she mainly used ICT during her summer learning experience to "research" and

mentioned the murals as an example. She shared that there is Wi-Fi at her grandmother's house but did not have it at home. Towards the end of the study when asked what she would use technology for she shared to "talk to my family" and that ICT is commonly used by people "to talk to their friends."

Drake defined culture as "how you are" and an aspect of her culture that was most important to her was her religion. Drake did not define herself as any race and/or ethnicity, although, she appeared to be African American. Drake did not recognize cultural influences in games, learning activities, and social sites.

Ms. O applied aspects of resistant capital relative to CrRT and CuRT regarding issues of race and social justice matters for which technology is used to provide an awareness and give voice to marginalized populations. When Ms. O was asked if technology was used to teach and engage Drake about culture/identity and current events in society, Ms. O discussed a trending topic related to racial profiling (Trayvon Martin case) on social media sites. Ms. O shared,

... I did use technology when we went online to sign the online petition, you know, to have him tried and things and I talked her through that. But we didn't spend a lot of time on it. Umm, she is at the age where I want to offer my opinion and support, and I also want her to see a lot of things and ask me questions and see where her head is. We did watch some of the trial and we definitely watched when the verdict came in. We had a conversation, and she was upset about it and you know she wanted to know why. She asked me, 'How often does that happen?'

For Mrs. O technology and SEP provided opportunities to mentor her daughter and demonstrate how to apply elements of technocapital to resist the dominant cultural narratives about race, privilege, and justice.

In summary, although Mrs. O was the parent participating in the interview, she emphasized the importance of the blended family parental structure to mobilize and activate aspirational and familial capital to enhance Drake's social and academic experience. Both of Drake's parents mobilized and activated socio-cultural capital resources to build technocapital through aspects of aspirational, familial, navigational, and resistant capital. Mrs. O had an awareness of the value placed on ICT in providing an awareness and giving voice to marginalized populations. She expressed the importance of Drake valuing her identity and using technology to support border crossing experiences, explore cultures, and counter dominant societal perspectives that could limit Drake's aspirational capital because of Drake's defined identity. Mrs. O and Drake's father activated boundaries for Drake based upon their desire to protect her and mobilize opportunities for the productive use of time in safe environments.

Keisha

Keisha is 10 years old. She is an African American female who liked to sing and listen to music. At the time of the study, she had been a member of the SEP for three years in both the summer learning and after school programs. Because Keisha and her family lived in the same building that the community center was housed in, she and her family had been involved with the SEP longer than many of the other participants. Keisha lived with her mom (Ms. K), who is a single parent, her 15-year-old brother and 18-year-old sister. Due to their age, Keisha's siblings did not currently attend the SEP but were active in the

afterschool program and regularly attended or participated in various community center events and activities.

For Keisha and her family, the SEP site served as a community resource and advocate through contribution to education, health and wellness, and social and economic skill building throughout Keisha's childhood. Keisha's case denotes ways socioenvironmental ecological factors relative to her mesosystem and exosystem contribute to the development of familial, aspirational, social, and navigational capital. Keisha's case demonstrates the ability of youth to perceive the success deriving from ICT as less related to the understanding of how to use technology but more so related to the use of ICT as a resource to effectively engage with others and increase learning.

Funds of Knowledge/Community Cultural Wealth Attributing to Technocapital

Keisha attended the school that was associated with the SEP site. She chose to be a part of the study because she liked technology and wanted to talk about her experiences with technology. Ms. K (Keisha's mom) indicated the SEP and afterschool program are very essential to her children's learning experience. In comparison to Keisha's experience with the SEP and the experience of her other two children, Ms. K believed Keisha shared more diverse experiences due to the increased access and use of technology; yet all of Ms. K's children were provided complementary experiences to their academic and social development.

In relation to SRT, CrRT, and CuRT, Ms. K and Keisha applied aspects of aspirational, social, familial and navigational capital to Keisha's social, academic,

and community experience as well as in her utility and exploration of ICT. Ms. K shared,

Well, I can see a difference with my youngest daughter than with my two older children.... I know that with the after-school programs and with the summer program my child is getting the opportunity to become exposed to more things. Some of the things that I would be, I am unable to afford, without the help of this particular community association and after school program.

When Ms. K was asked about what she would change about her daughter's experience with the SEP, Ms. K shared from an aspirational capital perspective. Ms. K indicated that she desired for there to be more people working with her daughter who were actively working on academic degrees for education or working within the education system. Ms. K also shared that she would like to see more technology-based education similar to what is present in more affluent communities. Ms. K stated,

I would like for the schools to also introduce a little more of the technology-based education that some of the other schools probably in a more influential community have. You have for the most part, the schools that offer like hands on with the laptop and with the personal computers they don't really offer within the public school system at all. A lot of the exposure that my daughter has had with technology has actually been at home.

Ms. K expressed concern that the DC school system sometimes lacked preparedness and poor implementation in the use of ICT for education regarding a situation when Keisha had to take assessments (Achievement Network [ANet]

Assessments⁸) in the fifth grade using ICT. Ms. K also expressed concern for her own ability to prepare her daughter to use ICT and a sense of frustration about her past feelings and lack of desire to explore and use ICT. She stated,

I mean I know that my daughter had to take an assessment test in her fifth grade year, and at the beginning of the year, it had come to my attention that she didn't do well on the test and when I went to talk to her she didn't know that she had to press enter after each question; and you know I kind of felt a little guilty for that as well because I had not really familiarized my daughter with using a personal computer in that sense. And it was pretty obvious that she wasn't comfortable or had not been accustomed to taking tests online like that at all up until last year at the school. I actually shared that with a teacher because she had kids. She had been given the opportunity again to take the test because of that particular issue, and she did do quite well once that particular problem was addressed.

In regard to Ms. K's own lack of desire to explore ICT and how her feelings changed on the use of technology, she shared,

I was against using so much technology in schools probably about three or four years ago but that was because I was very uncomfortable, and I wasn't actually knowledgeable about the benefits of technology within my home or within the community up until about five years ago when I went online. I didn't go online 'till about five years ago, Ms. Crenshaw. I didn't really feel the need for it at the time.

Keisha shared that she enjoyed learning and liked to read books. Unlike many of her peers in the program, Keisha was aware of cultural influences in games, learning activities and social sites. She considers herself an African American and felt that it was important to be "a part of" or in other words connected to her culture. In accordance with being book smart, Keisha demonstrated connectedness to community and appeared a bit more knowledgeable and participatory when observed in a community dialogue

⁸ Achievement Network (ANet Assessments are paced interim assessments aligned to the Common Core standards. It is administered 4 times per year to students in grades 2-8 in the few District of Columbia Public Schools that do not use Paced Interim Assessments.

between community center staff and her peer group on racial profiling. Keisha showed elements of resistant capital relative to CrRT and CuRT. Keisha's demeanor towards learning about current events which occur in her community, particularly those relevant to justice within the African American community, derive mainly from her interactions with her mother. Although Keisha did not elaborate with specific details about frequency and depth of internet use to understand racial profiling and current events associated with racial profiling, she shared that conversations often took place with her mother, older siblings and staff within the community center which prompted her curiosity and use of technology to research or gather information related to inequity, social justice, gentrification and deciphering the quality of information found on the Internet.

Ms. K talked about how technology has provided additional resources and changed the way she and her family gathers information. Ms. K expressed concern for Keisha having knowledge for how to obtain information when technology is not present. Ms. K stated,

Well, you know the research methods ... we were going to the library learning how to use the card catalog and learning about the Dewey decimal system. The children actually sitting down and going through a dictionary and looking at definitions more so instead of going onto I guess Wikipedia or just googling a word and finding out what the definition is. So, I just think that with technology some of the negative aspects is the physical part of it ... Just in case something was to happen with technology and they will be unable to use it at that point ... the children need to learn how to manually do things opposed to just bringing things online and just being able to instantaneously research everything. Just learning how to dig for information and learning how to utilize the type of resources that we have out here as well prior to the technology.

Ms. K indicated additional concerns about the quality of information and the importance of her children understanding that the things they come across on

the internet, as well as in books, can have bias and may not completely be true.

She encourages information seeking for a more in-depth understanding of things that her children are curious about or areas for which there is a need to have more information. She stated,

Things can be fairly biased because everything that's pretty much put on the Internet has to be written or put in by someone, not to say that books aren't the same way, but I want to make sure that my children, that my children understand that everything that they read is not necessarily true ... a lot of the things could be opinions and that they must continue to do their research and not just take everything that they read on the Internet at face value. You know, that's where the research part comes in and that's where you want to go when you want to find books that are written, things that are older; and just learning how to do a more in-depth research of issues and topics that they may be curious about that's going on within the world today.

Ms. K further emphasized concerns about Keisha's use of online dictionaries as limiting Keisha's ability to explore other words. She recognized areas where supplemental resources can attribute to Keisha having a stronger academic foundation through recognition and understanding of vocabulary words and potential associations within vocabulary words.

We were working on her [Keisha's] vocabulary words for school, and it just bothered me that she was going online and putting in the words and getting the different definitions from them, from the laptop opposed to just using a dictionary and learning how to research words according to the way they're alphabetized in the placement of the letters ... She's not being exposed to the words that come before or after a certain spelling you know and it's to me ... she's not just putting in that effort, in that time to actually look up the meaning of the words.

Ms. K further discussed areas where technology is used to further explore and engage in learning activities. She stated,

She's [Keisha] not at this point doing a lot of research on projects that would involve anything political or subjective to the environment, but her like her Math was, she's able to go online and they have a little Math thing where she's able to do tutorials with Math. So, she's not doing a lot of writing, physical writing anymore. She's doing a lot of things online. She's having to type up her reports. So, she doesn't know her manuscript as well, its' not where I think it should be because she's doing less writing. She's doing a lot more typing.

Ms. K addressed her concern with her child not having the necessary technological skills to thrive and build capital within society. She mentioned concerns with her daughter being left behind and her own challenges with initially seeing the need for the use of technology and how it can be more of a resource than the struggle with knowing and utilizing traditional ways of gathering information and sharing communication. She had not expressed these concerns with the teacher or administration as she believes and understands that teachers and administrators desire to close the gap in learning and technology use. In regard to teachers and administrators, she stated,

For them ... they want to bridge that digital divide ... I believe that it's going to take both the parents at home and it's going to take the administration ... To me it's a fine line because you don't want your children to be left behind ... you don't want your children to be so far gone that they are unable to use the resources that are out here. If anything was to ever happen to the World Wide Web or we didn't have access to the Internet for any reason at all, I do not want my children to be left behind with this technical divide. I want my children to be where everyone else is within the world and to learn how to utilize the Internet as the tool that it is ... this is something that of course I was totally against probably five years ago. I wasn't into the laptop ... Just at the time didn't see a need for those things.

Ms. K shared that Keisha and her sibling's communication and experiences with technology prompted her desire to explore and utilize technology. Ms. K was concerned with keeping up with her children and knowing

the things they know about technology. For a prolonged period of time, ICT was not used in her home because she felt there was not a need for it. She shared that her children sparked the interest in social media, and she became more curious about Facebook, Twitter, and Instagram.

So, you know it was actually my children that you know helped me to evolve into the whole technology thing. So, they definitely know how I feel about technology. I've become crazy with it within the last two or three years. I probably use it for everything. Because you now see it as being more than just a machine that kind of sits there that you could keyboard on and that's what it was to me at first ... I didn't really know how to utilize it to be honest with you.

Ms. K does not allow her children to spend a lot of time on social networking sites as she believes it interferes with their downtime and opportunity to do physical activities. She utilizes parental controls on the devices within her home which gives her the opportunity to place the time limit on use and utilize password for access. She feels that it is important for her children to interact with their peers in physical spaces as opposed to interacting on the computer. She will not allow Keisha to use Facebook but allows her to use smaller social networking sites for kids. She indicated that Keisha had created a Facebook account without her permission that she deleted. She shared that although she has established boundaries, she has found it hard to cut them off from the Internet because with Wi-Fi the access is almost everywhere; she has to confiscate their phones or laptops when she feels they are not following through with directions. She shared that after 8:00pm she doesn't like for them to be online.

Ms. K further expressed mixed feelings about the accessibility to information on the Internet and how youth often are influenced by what is trending online so much so that they don't recognize individuality. Ms. K indicated identity is a major concern as many youth are exposed to so many more cultures that they lose their sense of identity. The identity becomes based on what is seen as trending. Ms. K expressed that it is important for parents to create a foundation that encourages youth to think outside of the box. She believes that youth deal with peer pressure from social networks that perpetuate categorization of youth: how and what a successful student is or should be doing.

Ms. K discussed the importance of adults providing guidance on occurrences which take place to support the development and application of critical thinking to not stifle youth experience. She stated,

Having technology in your house and having it so accessible can create a problem ... you know things like trends, and things like that, I see are very easily followed by our children nowadays ... I just don't see a lot of the independent thought anymore ... You know, like it definitely takes a parent or another adult to talk to them about the things that they should not and should believe, but just to just keep them with an open mind ... So, it could be good and it could be bad, because of course with technology it transcends information but it could also stifle experiences as well.

When asked about Ms. K's experiences engaging with ICT and the way that she experiences or perceives others engagement with ICT, Ms. K discussed her first initial experiences with the desktop and Ethernet and how overtime she has progressed to more effective, mobile, and economical use of ICT through Wi-Fi. Much of her desire to be connected was due to wanting to be more civically aware and increasing opportunities to better her and her children's education.

Access to employment opportunities was also a factor that influenced her experience and desire to engage deeper with ICT. Keisha shared that she had Wi-Fi in her home and recognized that there were other places in the community she could visit to use Wi-Fi for free such as McDonald's, the local library, and Chipotle. Ms. K expounded on this and discussed initial barriers regarding Wi-Fi, such as hearing about Wi-Fi but not understanding the benefits of Wi-Fi or how to access it.

Influence of SEP Opportunity on Social Identity and Development of Technocapital

Keisha enjoyed her experiences at camp, particularly swimming, computer class, Hershey Park, and captured pictures of her experiences on her tablet. Although there were computer classes, she shared that she mainly used her tablet for ICT during the summer program. She shared that the tablet contributed to her summer experience “because I wasn’t bored”. She did not feel that she learned more about ICT in her experience at summer camp but used ICT as a tool to learn more about issues within society relative to her identity. Resistant capital showed up strongly in Ms. K’s conversations regarding Keisha’s experience at the SEP regarding concerns about racial profiling and gentrification.

Keisha’s mom shared about Keisha’s curiosity and concerns in conversations regarding the Trayvon Martin case, which was part of a lesson at the SEP site addressing racial profiling and rightful place in concern with gentrification. The site staff felt it was important to address these concerns with

youth to discuss safety measures that youth can take to protect themselves within community, obtain a climate for mental well-being and advocacy, and recommend helpful ways to interact with people of different identities and authorities. The Trayvon Martin case was a trending topic on social media. This was a concern for Ms. K due to fears for her children's safety as she believes more specifically that Keisha's teenage brother has been profiled in their home community because he is often stopped and questioned by the police. Ms. K indicated that she and her children began to look more deeply into the case by researching news outlets and social media. Per Ms. K, this was the first incident regarding race that had Keisha's attention and influenced consciousness regarding race, justice, and civil liberties.

Ms. K wanted to know how she could prevent a situation like this from happening to her children. So, she expressed the need to use ICT to teach her children to be open minded but not gullible to societal issues. Ms. K heavily encourages her children to research everything and to not take things at face value, to come up with their own conclusion. She shared,

We had to research because all of us had our own ideas ... with media and with the Internet we were able to find out a lot more information concerning this case and who Trayvon was. I guess that's where technology comes in because the media was really good with letting us see and become personal with the parents of these individuals that were involved with this and of the child that was involved in this case ... People were saying that people weren't being racially profiled and that they were being problematic because they were obviously committing something that was illegal. So yeah, it played a huge part in our house, and it was definitely a big discussion because we live in it, we live in the inner city and we live in a, we're living in an area that's being gentrified right now.

According to Ms. K, gentrification of the community played a significant role in the access and use of technology in Keisha's residential community and the DC Public School system. She shared that gentrification brought about an identity change within the community resulting in increased educational opportunities, higher socioeconomic status of residents, and increased technological culture. Free transportation for students within the school system allowed students to attend higher performing and/or specialty schools when eligible. The Internet became more accessible and at a lower cost within the community. There were more public spaces that began to offer Wi-Fi but people within the community were unfamiliar with it and hesitant to use it.

Her experiences with ICT, outside of the classroom, mainly included the use of her cell phone for which she enjoyed playing games. When Keisha played games, she shared that when given the chance or directive to pick an avatar, she picked an avatar that was relevant to her identity as an African American girl. Many of her family members mainly experienced ICT use through their cell phones as well. Keisha typically used her cell phone to help her with her homework, look up information, and communicate with friends and family. She shared that she had to recently upgrade her phone so that it could have multiple uses. Keisha shared that if she could change anything about how she currently used ICT, she would place Wi-Fi in the school gym because it often is used as an auditorium and alternative learning space.

Her mom shared that she was aware of the goals of the summer program and expressed excitement about the opportunities being provided her daughter.

Ms. K was very deliberate about desiring to maintain her residence in DC and felt that there are many diverse opportunities and capital building experiences present than if they lived in a small less diverse community. She shared,

... it was in the programs that they offer, they are offering communication and community ... They expose the children to different people, different people working in different settings, and it gives the children an opportunity to see that there are just so many things to offer within, I want to stay within the United States and within the world. Especially when it comes to people and when it comes to diversity. The diversity here is so unique and I really think that it gives children an opportunity to do a lot more in their lives than they would if they were living maybe in a smaller city or a place that doesn't have the open mind, that the open mindedness that this particular community offers these children here in the District of Columbia.

Ms. K feels that education plays a huge role in the introduction of technology. Currently, Ms. K is in a program to obtain her high school diploma. Ms. K indicated that residential community member participants, at 50-60 years of age, have not been in school in over 20 or 30 years and have a minimal understanding of technology and the use of the Internet. Ms. K indicated that the community participants fail to see the relevance of ICT while in a classroom setting and fail to understand when a teacher says, "if you're not going to come to school, e-mail me guys or I've posted assignments online if you're not going to be here." Per Ms. K, her children's education, as well as her own, impels her to use and expose herself more to technology. She shared,

It's all about education. It's all about looking online and finding a tutorial. ... I'm not sure if that's a way of life but it's a part of life for them. It was something that eventually I would have to incorporate into my home regardless of what my feelings were for it because I want my kids to stay abreast and to stay on top and to stay with the curve. So, it's an important part as a parent ... Children are going to bring it to your home regardless. ... If your community doesn't utilize technology like that, then your

children, I don't believe will need it. ... I think that my children are so much more and more connected is because of where we live; because [of] the environment in which we live, and because of the changes that are happening within this area. It is impossible not to be technologically savvy because then you will just be left behind.

While Ms. K had reservations about technology and ICT, especially whether her daughter was learning non-technological skills that could help her when technology was not available, she used various forms of capital (e.g., family, aspirational, and resistant) to encourage her daughter's development of technocapital and a strong identify as a user of technology.

In summary, Ms. K mobilized and activated the building of technocapital through aspirational, social, and navigational capital by enhancing networks and building resources outside of the family environment (e.g., libraries, schools, community spaces, etc.) to support Keisha. Ms. K reflected on her own need to further develop and engage with ICT to further support Keisha's identity and academic development by both utilizing shared community spaces where Wi-Fi, Internet access, and varying productive ways of technology use occur in formal and informal settings.

James

At the time of the study, James, an African American male, was 11 years old. His interests were music, "rapping", basketball, girls, being funny, reading "books and writing stuff on this tablet." James played several musical instruments and was very apt at entertaining. He had a very curious personality. He paid attention to the smallest of details and was very inquisitive. He chose to be a part of the study because he "liked to get some info about technology" and

thought it would be fun. He previously attended the school that was associated with the community summer program site but was excited about going to the 6th grade at a nearby charter school.

James became aware of the summer program through his mother, Ms. A, who is a staff member of the community center and his aunt (Ms. K who resides in the building of the community center site, Keisha's mom). Varying forms of cultural capital such as: aspirational, linguistic, familial, social, navigational and resistant capital are all present in James and Ms. A's expression of experiences with ICT and at the SEP. James had several family members that participated in the program: his mother (who acted as a program coordinator and instructor), his older sister (who acted as a volunteer counselor), his younger brother (program participant) and female cousin (program/study participant). James and his immediate family lived a few blocks from the community center site.

James case denotes ways socioenvironmental ecological factors, more so relative to his mesosystem, contribute to the development of aspirational, familial, social, and navigational capital. These forms of capital are relative to SRT and CuRT and they are present in James and Ms. A's desire to further develop academic, technological, and social skills. James comes from a low-income, single mother home, and has lived in five different states over a period of 6 years. Yet, despite the challenges, James and his mom focus on ways to advance themselves as individuals as well as the collective community. As a program coordinator at the site, Ms. A worked with middle school students during the summer and sees her role as a mentor, playing a dual role as a parent and a

staff member. The duality of Ms. A's role as parent and staff member impacts her perceptions and actions taken to mobilize and activate technocapital for James and the youth that she comes into contact with.

Ms. A expressed her desire to further develop youth (including her children) by bringing them out of their shell and building on their communication skills.

In her day-to-day experience working with the youth, she responds to challenges her children face which are reflective of those of other youth within the community. Ms. A is currently working on her bachelor's degree in social work and feels that her work within the center is in alignment with career goals and life purpose. Not only is Ms. A an activator of capital for her children, but she is also an activator of capital for the children and families served by the community center site. Since James and his family moved to DC, their interactions and relationships they have developed are bridges to social and familial capital within the community for which they are heavily engaged.

Funds of Knowledge/Community Cultural Wealth Attributing to Technocapital

In regard to typical technology use, Ms. A shared,

... as far as his own personal use it's not always for learning. It is for his own pleasure. Basically, he goes into his own world and, you know, does his own gaming and things like that. He doesn't really use it how I would like to see him use technology. It's his own personal pleasure. Basically, his own enjoyment.

Ms. A shared that she often battles with her son regarding age-appropriate games. She said the initial games were football and then as he got older and

began to engage with peers and others in the community, he desired to play games like Grand Theft Auto. She related this to being socioenvironmental based on his engagement with youth his age and older youth within the community; his ability to play and do well in this game increased his social capital.

Ms. A shared that James doesn't necessarily use social media to connect with family members and friends. Ms. A indicated that James typical technology experience through games is not the ideal way that Ms. A would prefer to see him use technology, she desires more productivity related to social awareness and academics. Ms. A shared,

He's more gaming basically as you said, he will look up certain things just because I will tell him to look it up you know. I'll even take it back to the most recent time during the Trayvon Martin trial. I came downstairs and said 'No justice no peace' and he says Momma what does that mean. I say well I want you to look it up. I want you to look at that quote and you tell me what it means. You have your tablet. You look at that and then I want you to also tell me who is George Zimmerman. I personally, just in the house, will quiz and tell my kids to do certain things like that.

James often saw people in his community use technology and believed that the type of technology he has and the way he chooses to use technology influences the perceptions that others may have about him. He perceived his ownership of the tablet provided during the study as a form of cultural capital. In reference to his perspective on technology influencing youth, his mother, Ms. A shared,

What I would say absolutely is that a cell phone is a huge step in making themselves, in making their presence known. Basically, building their rep as they call it, his rep, their statuses, and things like that. He's still though, he's not necessarily on the same level as his other friends because his

friends have cell phones. Basically, on their cell phone, it is very easy to access Facebook. 'Hey look at what such and such said on Facebook and they pull out their cell phones.' And if they have a cell phone it is touchscreen. Like I bought him a cell phone. But it's a simple phone. I bought him a phone in the sense that this is your responsibility. You have to show me that you can keep up with this, and I'll make sure that you have the minutes on your phone so that you can use it and be able to get in contact with me. You know I got him a little cheap phone in that sense, as opposed to the more fashionable touchscreen because the phones are not necessarily used for those intentions. They use it basically as a form of fashion.

Regarding understanding culture and its influence on ICT, James initially struggled with expressing himself. He initially shared that he didn't know about culture and could not determine if culture was important to him or recognizable in the technological games, learning sites and activities he participated in when using ICT. James shared that he had access to ICT and Wi-Fi at home and that his experiences with ICT at home chiefly included playing games, watching movies and videos, and chatting with friends. James was unaware of places that provided free Wi-Fi access in his community. He rarely used ICT outside of school and home.

Ms. A shares that she had to have conversations with her children, not only on how they use technology, but how they express themselves on and/or with technology. She doesn't have boundaries set in place for how technology is used. As a parent she is more reactive than proactive about their use but in hindsight feels that it would be best to have a conversation with kids as it would be more helpful in guiding them. Ms. A shared,

I mean honestly, it's one of those questions that you know what conversations that will need to take place about safety. Making wise choices in how you're open to you know so much on the internet, how your exposed to so much that you may have questions about it; because I'm

sure that there's people exposed to things that they have questions about and they haven't even brought it to me or asked me as their parent. But honestly, it's just one of those conversations that I haven't had that I really need to have. But it is very alarming. So much can go on as part of their conversations and them creating their own identities and conversing with people who they may not even know and having conversations that particularly in their eyes are not the norm.

James experienced technology as primarily a form of entertainment and social status attainment, though he understood some of the more beneficial uses of technology, such as accessing wider sources of information and researching topics. His mother, Ms. A, encouraged James to explore these uses more fully.

Influence of SEP Opportunity on Social Identity and Development of Technocapital

While at the summer learning program, James shared that he mainly used ICT to obtain information and that his use of ICT had not changed while he was present in the program. Optimistically, James shared that if he could use ICT for anything in the world, he would use it to see and engage with people throughout the world. He recognized that having increased access to technology increases the opportunity to obtain and share more information. James shared, “because I’ll be getting a lot of information and last time, I wasn’t getting a little bit of info.”

When discussing pedagogical influences and ways to connect her children and their peers academically, Ms. A shared that she feels that it is important to dialogue with the youth through questions related to the development of goals. Ms. A places a strong focus on the development and training on life skills. Her goal is to speak to the youth in a very positive manner especially in negative situations. In her classroom, she employs rap sessions to support the youth in

sharing their voice. In observing Ms. A, it was clear that she adopted a pedagogical style that was culturally relevant. She aimed to connect the student's home and school while aiming to be mindful of curricular requirements. Ms. A consistently aimed to intertwine the background, knowledge, and experience of students in her methodology and lesson plans.

In summary, Ms. A is an activator of cultural capital for James as well as the children she encounters at the community center. Ms. A emphasized activating technocapital, not only in the importance of productivity with technology, but also in expression of identity with technology. Ms. A expressed the desire to consider more boundaries with ICT and work with James to further establish and utilize resources to develop stronger means of technocapital.

Michelle

At the time of the study, Michelle, an African American female, was 11 years old. Michelle had been a participant in both the youth afterschool and summer program for four years. Michelle had strong interests in technology and wanted to share her experience in the study. Michelle and her family (mother and brother) lived in the apartment building that the community center for the SEP is housed. Ms. M, Michelle's mother, was a single parent and physically disabled. In spite of the many challenges, they dealt with and faced, Michelle and her family applied aspects of aspirational capital by displaying hopes and dreams in the midst of known challenges for connecting with opportunities and striving for success. One of the staff members recommended Michelle to be a participant in the study due to interests that she had shown and the work ethic

that she performed with technology during the afterschool program. She was actually the only student that was recommended for the study by the SEP staff.

Michelle's case denotes ways that Ms. M's experiences within her exosystem (i.e., mother's workplace, neighborhood, support sites and services for disability, etc.) as well as mesosystem (i.e., community center, school, etc.) impacted ways that Ms. M activates and mobilizes capital for Michelle. These factors contribute to aspirational, social, and navigational capital.

Funds of Knowledge/Community Cultural Wealth Attributing to Technocapital

Ms. M shared that she felt it was very important for her to prepare her children to thrive in school and future work environments. She shared concerns that she did not want her children to be in situations or environments where they did not have the necessary understanding, knowledge, and experience to be successful. Her efforts to activate and mobilize various forms of capital (social, cultural and technocapital) for her children derived from past experiences where she felt she lacked knowledge and experience. Ms. M stated, "I would like go to different places and stuff, like when I would go someplace that people have computers, I didn't know how to use it so I didn't want that to be like that with them ... I didn't know how to use the Internet or anything because I didn't have a computer."

Michelle is a very creative person. She is a quick learner and is often looking towards the next step and moves ahead quickly in tasks. She is very helpful, loves arts and crafts, and often thinks about the needs of others. She

enjoys learning and shared that “school is fun minus the homework” and placed high value on “hands-on” learning opportunities. Michelle shared that her culture is important to her and reflected on her culture in relation to the community that she lived in. She shared an awareness of how identity and aspects of culture are shown in video games and indicated that when creating avatars she often creates avatars that relate to her identity as a “Black” female (often with glasses).

Michelle had recently graduated from the elementary school that served as the host for the SEP. Michelle was excited that she would soon be attending a local STEM focused middle school. Michelle loved technology and the school was near her home. The new STEM middle school was also a part of the DC Collaborative which was known to have strong partnerships and access to opportunities within the arts and humanities. The new school had strong affiliations with a local university, businesses within the District of Columbia and is tied to several Urban Education programs for teachers at several surrounding universities.

Ms. M was excited about the opportunity that the school could provide Michelle due to the school’s academic focus, ability to increase technology skills, networking and collaborative partnership of the school and a nearby prominent university. Ms. M indicated that she played a very active and persuasive role in making Michelle aware of the benefits of the program, connecting her with resources within the school staff, attendance at orientation, and connecting with parents of children who attended the school. Ms. M shared that Michelle was

hesitant and had to be persuaded by her mother that attending the school would be great for her. Ms. M discussed a conversation in which she told Michelle,

... 'that's where you're going, you're going right up there where the college is' ... I was like 'at least If I could get you in a college surrounding maybe I'll have better luck with you'; and she was just like, 'well I don't want to go there' and she was fighting me the whole time. But then like she was fighting me up until like when it started getting closer to graduation and then she found out like a couple of her classmates were going to Howard Middle School. Then she was like 'Yay! I'm going to Howard Middle School'.

Michelle was familiar with various forms of ICT. She typically used a desktop computer within her home and a gaming console. She shared that she was excited about the study because it gave her the opportunity to have and use her 'very first tablet'. Michelle loved gaming. Gaming was a way that she and her brother socialized and connected with their father during visits to their father's home. It was also a way that she connected with her older brother when they were at home as well as her mother. Michelle's medical doctors had presented concerns regarding obesity due to Michelle's weight and Ms. M found a way to get Michelle to be more active through the use of technology as Michelle did not participate often in outdoor activities. Ms. M stated,

When I bought her little 'just dance' thing I bought it so she can do some like activities, like physically. And we weren't even using it until we got to the obesity institute where they were talking about her weight and everything. Well, they were like, what can she do? I had tried walking with her outside because I wanted to try to lose some weight so I wanted to start walking. She was fighting me the whole time. And I did it for like a month but then I was like, well you know, I was like, I have this Wii⁹ and she got like these little "just dance" things or whatever and I was like she could use that and I don't know why I didn't think of that earlier. So, then they were like try that and see if it works because she likes playing it

⁹ The Wii is a home video game console created by Nintendo that supports Internet connectivity to play online games and for the digital distribution of games.

sometimes but she had stopped. I bought her some new versions of it and then I started out like doing it with her, to get her into like wanting to do it. And we just started competing and we're like going for it. She got into a lot of it but my knees. I was like I might not be able to do that along with you because I need knee replacements. And so, like on and off, I'll try to do some work or whatever but like the last couple of days my son has been doing it with her and they have been having fun with it too but I don't know why I didn't think to do that. But she's just like, if it is something like going outside for a walk or jump roping. Like playing, she would do the playing thing, like because she goes to see her friend but like normal activities like outside stuff she will be like 'nah I don't want to do that'.

Michelle shared her first experience with the desktop involved learning how to type fast and use Microsoft Word. Michelle shared that in her home, she was the main person who used the desktop, stating, "I use the PC. I play games and I do homework." She shared that most of her time on the PC is spent researching information and "looking up topics."

Ms. M shared her perspective on how Michelle has engaged with learning activities when using technology, usually not in a way that Ms. M appreciated or supported. To Ms. M many of these uses of technology were shallow and would not benefit Michelle in the long run. As a result, Ms. M tried to redirect the Michelle's use of technology so that it was more likely to build navigational and technological capital. Ms. M stated,

They had like a place where you can go on and just do Mathematics stuff, but it was like in a game form, and I was trying to get her or she was interested in that, and that was because they were going to get a prize; and I was like I don't want you to always be doing something because you want to get a prize. Just do it so you'll know it. And they don't get that concept of just learning something to know. You can't always get something in return. So, what you're going to get in return is learning how to do whatever you're trying to learn how to do and that's what you're going to get. And they just always think there has to be some big prize at the end. Real life is not like that. So, you know, and it makes me hard. It's harder because it's like, that's what they tell me at her doctor's office. It's like set some goals for her and then like at the end of the week give

her a prize. But, when I was younger it wasn't no surprise you just had to learn this. So, it's like that's like bribing them almost to me. And I was like this is something you should want to do because like long time ago people our people came here and we couldn't do anything. So, this is like a privilege to them and they don't even get it. And I used to be like that too.

Ms. M also addressed aspects of assimilation in border crossing experiences where different cultural and economic backgrounds contribute to capital building opportunities. She stated,

And I was like, it's like I've been having so many different experiences being around different like Caucasian people where I work. I am around a lot of them there and they were like so foreign to me; but I pick up a lot of high intellect from them like the way I talk. I can talk very well just from just being around them. Because like being like around the people that I was like around, they were sort of like why you act like you're White or you're talking White and this and that; but I guess I'm like starting to bring it over into my home areas versus just being at work. I was just like doing it like everywhere. It made me feel like they thought I was like, like playing a role or something like I wasn't being me. But my kids they like, they talk very well. And I was like, you know if somebody is making fun of you because of the way you talk then you know don't worry about it. I like that ya'll talk very intelligently. I don't want them talking like how I used to talk. I was like so ghetto. There is nothing wrong with talking proper. Now if they want to make fun, let them make fun of you because that's their problem. Just let them deal with it. I was like I don't think there being, I don't, I don't think I was being White, but I think I was learning how to be more, more just more intelligent in the way I talk. And it just, I mean I don't know, and then you have to fit in, in that type of setting, working in the office setting and being professional.

Michelle also likes to spend time being on social sites. Her mother expressed some concern about the length of time she spends on the computer and her preference to use computers over other forms of learning. For example, Michelle loves to read but prefers to read on a tablet versus reading a physical book. Ms. M indicated that the Internet is how Michelle mainly connects with other people. Ms. M stated,

I think that's how she loses herself, in technology sometimes, it seems, it just seems like she's in a trance sometimes when she's sitting over here on the computer. Sometimes I'm like, I need to get her off the computer now so I will tell her like ... you got like 30 more minutes and then the next thing I know, it's like counting down ...and she is like no Mommy I need some more time, I need some more time, and she is like frantic because she wants more time. Then I'll let her go another 30 minutes and then it will keep going. And then I'm like look, no we have got to cut this off. She's kind of like in a trance like state. Usually when she's playing a game or it's usually when she's doing something or if she's writing or talking with her friend ... the games that they're playing they're like interacting and talking to each other. Like the instant messenger type of thing...I guess that's her socializing with other people but in a virtual way. So, she's like connecting with that person and so it's like she does want to stay there, you know talking to them.

Ms. M encourages and supports Michelle's use of technology, but she often worries that Michelle focuses too much on the entertainment and social functions of technology. Whenever she can she tries to redirect Michelle to use technology to build deeper and more powerful forms of technocapital.

Influence of SEP Opportunity on Social Identity and Development of Technocapital

Ms. M indicated that the community center staff (including those who were a part of the SEP program) have always been very supportive of Michelle, tapping into academic, cultural, social, and technological areas that could increase capital and further her overall development. Ms. M stated,

... the people at the center, they've been pushing her, she didn't like to do stuff, like they wanted her to be a narrator in a play. She really didn't want to do it. And so they kept calling me and it was like she doesn't really want to do it and then I talked to [staff member] and he was like I think we should push her to do it because I want to bring her out of her shell. Then I was like well go ahead let her do it.

Ms. M shared that Michelle's initial computer experiences derived from interactions at home. The staff shared that Michelle was more advanced than

her peers in the afterschool program and that she often assisted the instructors by helping peers out with activities on the computer. Ms. M shared that staff would comment to her about Michelle's ability.

She is so smart on a computer and this and that, and then they wanted to like, I guess get to know me and talk to me and everything. So, they were like, like Michelle said you showed her how to do this and do that and I was like yeah I wanted her to like know how to use it.

Ms. M indicated that Michelle and her brother really enjoy learning from and with their mom. Ms. M stated, "they're like really interested like when I'm showing them how to do stuff like with different software programs and everything about how to do stuff in Word, PowerPoint, all that. In these ways, Ms. M reinforced the lessons that her children were taught at SEP, often mobilizing various forms of capital accessible to her (family, aspirational and technical) to do so.

In summary, Ms. M activated and mobilized capital for Michelle through experiences within Ms. M's exosystem (i.e., workplace, neighborhood, support sites and services for disability, etc.). Ms. M's efforts to activate and mobilize various forms of capital (social, cultural, navigational, and technocapital) for her children derived from past experiences where she felt she lacked knowledge and experience. Although Michelle is deemed as having a stronger technological skillset than most peers, Ms. M emphasized her need to redirect Michelle's technology use through social, health-related, and academic connections to build deeper and more powerful forms of technocapital.

Diamond

Diamond, an African American male, was 10 years old at the time of the study. His interests included learning, experiencing new things, painting,

drawing, building, and traveling. Diamond desired to be an architect and had a strong interest in technology. Diamond wanted to be a part of the study to “experience more about technology and learn and get deep into it.” Diamond was an academically strong student who seemed to be very introspective desiring and seeming to have balanced the subjectivity and objectivity of self in relation to others and the environment.

Diamond resided with biological parents and his 12-year-old sister. Diamond’s case demonstrates the impact of the mesosystem (i.e., intersections of school, community, and family) influencing his parents’ ability to mobilize and activate aspirational, navigational, linguistic, and social capital in the development of technocapital. Diamond lives in a highly populated multicultural community within DC with a mix of international and domestic families with varying incomes, races and ethnicities about 5 miles from the community center. Many of the residents within the community can walk to mid-high brand retailers as well as small business owners.

Funds of Knowledge/Community Cultural Wealth Attributing to Technocapital

Diamond shared that he has Wi-Fi in his home and believes that most people in his community have Wi-Fi. Diamond describes the community of retailers as being wired because you can access Wi-Fi in any of the stores. Diamond and his mom indicated that they constantly witness people avidly using technology within the community at the retail stores, restaurants, and coffee shops.

Ms. T perceived the community (although becoming progressively gentrified) as a space for increased navigational and social capital. Unlike the community staff of the SEP program and other parents, Ms. T is delighted about the changes taking place in relation to gentrification. Ms. T believed the gentrification occurring in the community was positive. She mentioned that she grew up in Adam's Morgan in DC and prior to gentrification she felt uncomfortable around her peers, although they shared the same racial identity, explaining that she and her siblings were often picked on until the neighborhood became mixed with people of different races and background.

In sharing about her community, Ms. T shared that she had negative childhood experiences growing up in her community in DC prior to gentrification. She welcomes the expansion of diversity since the riots which had taken place in the 1960's and the recent business developments related to gentrification.

Ms. T stated,

On the block we saw that a lot of Black families lost their house. They were renting and people, White people, came in and they bought it and I saw them. They were just like kind and sweet to us and didn't mess with us. They didn't have kids. They were mostly gay couples who were like married couples. But they stayed to themselves, but they were always polite and that's what got us. I felt relieved then it was just kind of straight OK crazy that I felt relieved. They would interact with the Black people that I grew up with, and you know, so we just you know that's how I got accustomed to being around White people because my next door neighbor, you know, they were White and they were, you know, we always talk, they talk you know. So then, I felt more comfortable and my mother she would let us come outside more often. And so, I believe a lot of them lost their homes. So, it just was ... it was peaceful on the block and which is crazy. So I think it may be probably about eight families, five or eight families left on the block and the rest White, but it is a lovely block, it is peaceful, it is quiet.

Diamond's mother, Ms. T, is a major advocate for her children's activation and mobilization of capital. Ms. T shared her belief that it is extremely important to find and engage children in activities and programs that enhance their academic development. She shared that her and her husband often take steps to mobilize and activate aspects of capital such as having a tutor to help them advance in Math and Spanish. By having a Math tutor, she takes a proactive approach to build Diamond's Math skills beyond what he is being taught in the classroom. Having a Spanish tutor provides an opportunity to access linguistic capital and supplement his language learning.

Diamond's parents identified Math apps (i.e., First in Math and IXL) for learning to support Diamond's development of Math skills the previous year when Diamond was in the third grade. The first app they used was 'First in Math'¹⁰ which was introduced to them by Diamond's third grade teacher. Diamond's parents were uncomfortable with this app because it did not allow the parents to see how well Diamond was doing in Math or provide information on areas where he may need additional support like the IXL¹¹ app.

She shared that she tries to help Diamond be balanced and limits his time on the computer overall as she comments,

I don't like to see a child do something too long anyway, even if it is studying, give it a break, get up do something else so you can refresh your mind. You know then you can come back, come back at it, and you know you can probably see it in a different way once you come back.

¹⁰ First in Math is an online learning app which uses Math games designed to strengthen fact fluency, automaticity, computational thinking and other critical skills.

¹¹ IXL (from "I excel") is a Math and Language Arts website with practice questions to develop and assess students learning for K-12 educational levels.

Ms. T explained that her own use of technology was limited by the demands of time for work. Her children have expanded her development of technocapital by often showing her how to use technology, for example, sending emails, downloading apps, text messaging, sending pictures and camera use. Ms. T brought up a concern that language can be a barrier related to tech as she has been confused by words that have taken on new meaning in tech use. In providing an example of a teaching moment from her children, she shared,

They showed me e-mail. They showed me how to flip the phone, how to flip the camera. I literally flipped the camera because they said flip the camera, I flipped the camera. It's a button that you use to flip the camera. I was like, well how was I supposed to know that you said flip the camera.

Ms. T also shared that she did not allow her children to use social media sites, particularly Facebook. She shared that she wanted her children to use the Internet in a more productive manner and deemed the use of Facebook as unproductive and shared that the interactions on media sites such as Facebook should have more meaning. Ms. T stated, "...and as far as the Facebook, and all that, I told them you not going to Facebook not in this house. You go to Facebook when you move out." Ms. T further shared her perspective of socializing on Facebook as meaningless and compared it to 'hanging out in the streets' with the exception that it is socializing on a computer. Ms. T commented,

As long as it's meaningful, they can get their point across and end it, that's cool. But it's like you know hanging out in the streets. You just sitting out there, no. No, I wasn't raised like that. I'm not raising my kids like that. It's just that it's not outside, it's inside but it's on a computer. It's the same difference for me.

In many ways, Ms. T is drawing from cultural and community forms of capital to help Diamond successfully use technology. She associates “hanging out on the streets” as a potential liability for youth, and she “wasn’t raised that way,” an indication of a norm or cultural value promoted by her community. She translates that communal wisdom to inform her parenting and guidance to the virtual world in which Diamond uses technology. She encourages Diamond to engage in more productive uses of technology, such as acquiring greater Math or language proficiency, and she relies on her access to communal knowledge about the dangers to youth of “hanging out in the streets” to justify doing so.

Influence of SEP Opportunity on Social Identity and Development of Technocapital

Diamond and his sister participate each year in a range of activities, activities offered by the school and community center as well as activities offered elsewhere, like fine arts and tutoring programs. These programs are often sought out by Diamond’s parents by gathering information from the library, community members, and church. He found out about the summer program through his school which served as the host site for the program. He shared that he really liked the summer program and enjoyed the Science learning opportunities the most and the dance classes the least. Although Diamond did not think that he learned more about how to specifically use ICT during the summer program, he shared that the program provided an opportunity for him to continue to use technology as a tool to increase learning, interact with others and

play games. Nonetheless, he shared that while he and his family members used ICT, they do not spend a lot of time doing so.

Ms. T shared that there is a great need for knowledge and that the use of technology brings greater opportunities for learning. She likes it that Diamond uses technology to develop academically but she is very hesitant and cautious regarding social use and gaming. She recognizes there could be some good in games, but she is concerned that he could develop ‘carpal tunnel’ from gaming. She has established a time limit of 20-30 minutes of gaming per day and reinforces other modes of creativity (i.e., art, music, literature) that he could access through technology or other means.

Diamond shared that culture was important to him and perceived culture as “something that is passed on or a tradition.” He further shared that culture is important because it allows you to know and “show where you are from” and that the “sharing of culture allows individuals to learn stuff in real life by hearing about a person’s experience and why they act or think a certain way and make decisions outside of what we just experience in a book. Diamond shared that he enjoyed the cultural education experiences provided by the SEP such as the learning activity in Chinatown in downtown Washington, DC, the twice a week West African drumming classes, and the learning activity with the South African Umoja¹² dance troupe in which the students were invited to participate in a dance workshop that addressed the commonalities of culture amongst the African Diaspora.

¹² Umoja is the Swahili word for “unity”.

Along with the experience and awareness of cultural engagement through in-person activities, Diamond shared that he increasingly recognized culture (and the preponderance of mainstream culture) in technological games and learning sites based on conversations shared about ICT with peers. He specifically identified the characters people used, the way people spoke, personal knowledge of games, and types of people who played certain games (e.g., boys and sports and fighting games; girls and dance games with very few into sports unless on Wii).

In summary, the intersections of school and community, influenced Diamond and his parents' ability to mobilize and activate aspirational, navigational, linguistic, and social capital in the development of technocapital. Although technology was not used a lot for recreation and social engagement in their home, it was mainly used for measured purpose filled reasons. The mobilization and activation of experiences to support the development of technocapital were mainly attributed to more academic engagement and less social engagement.

Rosa

At the time of the study, Rosa (an African American female) was 11 years old and on her way to the 6th grade. She had recently attended the school which was the host for the community site but was planning to transfer in the fall to an all-girl's school. Her interests are playing baseball and singing. She shared that she wanted to be a part of the study so that she could get a tablet and learn.

Although Rosa's mother allowed her to participate in the study, I did not contact Rosa's mother to participate in the study. Rosa had adamantly requested that her mother not be interviewed. Rosa shared she felt uncomfortable with me interviewing her mother (caregiver) and father who was in and out of her life. She became very emotional during the interview and out of respect for her request I chose not to contact her parents.

Rosa was concerned that her mother would feel bothered by the call, would not be responsive, and may get angry. She shared that other people have called her mom's home in the past to support her at school and within the community and this would only frustrate her mother. Rosa shared that her mother would not talk with me and would immediately think that Rosa did something wrong if an adult reached out to her concerning Rosa. According to the SEP staff, it was common for Rosa's mother to allow her daughter to participate in activities and show a lack of parental interest, responsiveness, and commitment towards the child's involvement with activities.

Funds of Knowledge/Community Cultural Wealth Attributing to Technocapital

The description of Rosa's experience with technology, including her participation in SEP, and how funds of knowledge/community cultural wealth may have influenced her development of technocapital is based solely on my interviews with her. Rosa is unique in the study in that she represents a portion of youth for whom there may be a greater dependence on the need for SEP and afterschool programs because their parents may have minimal involvement and

engagement in capital building opportunities for them. Rosa resides with her expectant mother in the same building that hosts the community center. For Rosa – “home is Mom ... home is DC.” Rosa is currently an only child with a new sibling on the way, which was a concern to Rosa as she thought it may further decrease the amount of attention she currently received from her mother.

Rosa’s case denotes aspects of influence and impact exosystems can have in a youth’s life when family resources and support is limited. Whereas social and cultural resources often stem from parents’ activation of capital, sometimes aspirational, social, and navigational capital stem mainly from what the youth observes and experiences outside of the home (i.e., in school, community, and as described by Rosa in technological spaces). For example, Rosa shared that she struggled with her emotions and is often in arguments with peers; she also shared that she struggles with discipline in school and at the SEP. For a coping mechanism, Rosa said that she tracks her feelings by writing in her journal and looking up resources online to identify self-help and address the emotion she was feeling. These strategies were suggested by a therapist at school and an SEP staff member to help her when her “emotions are overwhelming” and she is “angry enough to fight,” Rosa has incorporated them into her use of technology, providing her with broader access to social and cultural capital.

Rosa shared that she had no computer or Wi-Fi in her home but that she had familiarity with places that have free Wi-Fi in her community. Rosa stated that she accesses the internet through her mother’s mobile phone and the newly

received tablet that she would use in free Wi-Fi places. She shared that the tablet provided in the study contributed to her learning experience during the SEP by helping her to read. When asked if she used social media sites, she indicated that she had a Facebook account, Skype, and Oovoo¹³.

Rosa shared that ICT was used in her church which provided computer instruction. Per Rosa, there are three computers at their church, and they partner up to learn lessons about their faith on the computer. Rosa indicated that she uses ICT to learn about herself. She further explained,

I look up stuff like if you are mad what should you do; I look up stuff like that sometimes. I look up the Bible ... sometimes it's a section of anger management. Sometimes it says, 'are you mad'? Sometimes it asks you if you are a kid or are you an adult and when you click on kid it says somebody made you mad or you let somebody get you mad.

When asked about areas of technology where she saw culture was present, she mentioned “games.” Her experiences with gaming primarily involved the Wii gaming system. She mainly uses whatever character is given her, but when she had the opportunity to create a character, the character she created reflected herself. She described her character as short, dark skinned, and chubby (although she isn't chubby). Aspects of race and skin complexion did not matter to her, but she recognized that there are people that she knew were “Black” who made themselves “White” characters on ‘Oovoo’. She shared that this possibly happened “because they think light skinned people are prettier.”

¹³ ooVoo is a video chat and instant messaging app for mobiles, tablets, computers, and MACs. The original app was released in 2007 and was discontinued November 25, 2017.

Rosa shared that “sometimes people wish they are older and lie about ages.” She has lied about her age because she wants to be viewed as a teenager and not as 11 years old. Like her peers, her first experiences with a computer started with a toy. For her it was a Barbie computer which she felt helped her to connect to later use with a real computer. She has no fears related to using tech and knows that she shouldn’t talk with people that she really doesn’t know but is more concerned with being approached by older youth within her community. When walking or on bus by herself she has to have a phone on her to communicate with others out of fear that something will happen to her. To Rosa, the virtual world often seems safer than the real world.

Influence of SEP Opportunity on Social Identity and Development of Technocapital

Regarding her SEP experience, Rosa mentioned that she liked the opportunity to learn and meet people. Her motivation for being a part of the study was for “learning,” and because she wanted to “be a part of something and wanted to do a project,” it felt good for her to be included in the SEP activities. However, Rosa did not like learning, a major function of SEP. She shared that “there is nothing I really like about learning; I’m just scared that I won’t pass to the next grade.” What Rosa liked was the SEP staff, who she said she felt close to because they knew her areas of struggle and how to help her. Rosa seems to be saying that SEP performed another important function for her – access to valuable forms of social and cultural capital through her interactions with staff.

Nonetheless, Rosa shared that typically, when she uses ICT, she does use it to learn, and outside of academics she uses it to learn how to manage herself, develop coping skills, and apply spiritual guidance. Rosa specified her use as related to “anger management and understanding the Bible.” She shared that she types her feelings into a phone search engine when she is mad to learn about what she should do and looks to the Bible for guidance. She shared she googles “anger management for kids.”

Rosa also shared her frustrations with technology. She struggled with the directions for the tech time chart, which was requested of the participants in the study, and felt that it was impossible to complete because she does not have Wi-Fi at home and had recently lost her library card. Sometimes she doesn't like to use Google because she is not a good speller and often feels ignored by people when she asks for help. Out of frustration she typically gives up but shared that often conversations with SEP staff help her to see different perspectives and ways to address these challenges.

Rosa's primary motivation to learn at the SEP is that she wants to make progress and doesn't want to fail or be left behind from peers. She struggled with sharing what she liked about learning. With prompting she indicated that she was motivated because she wants to 'be a part of something' and sharing of information. She said that it was important for her to be included. She shared that she initially did not have any fears using technology but knows that she should be mindful of strangers and not talk with people you really don't know. When asked if she thought of ways to protect herself when using technology,

Rosa shared that if someone approaches her asking her age that is a sign to protect herself; she stated “if they ask me if I am 18 or something, I will leave and go to another space, or sometimes I log out ... I delete stuff ... like files and private information.”

Rosa indicated she feels really connected to technology and feels that she should have her phone on her all the time. She is aware of her environment when she uses technology. She feels that she is good at using computers. While Rosa did not feel that her experience at the SEP changed the way she used technology or her attitude about how tech is useful, she did feel that staff at the camp were very relatable and made her feel very comfortable amidst her challenges with learning and socializing.

In summary, with the absence of Rosa’s mom, Rosa’s shared experiences indicated aspects of influence and impact exosystems can have in a youth’s life when family resources and support is limited. In her case, much of the aspects of aspirational, social, and navigational capital stem mainly from what she observed and experienced outside of her home (i.e., in school, community, and as described by Rosa in technological spaces).

Buddy

Buddy is an 11-year-old male who lives with his mother and teenage brother. His father passed away when he was seven. He identifies himself racially as “Black, African American.” Buddy lives a few miles away from the SEP and learned about the program from his grandmother (a resident of the community center site), as well as his cousins and friends who attended the

same school as him and were also participants in the SEP. Buddy also attended the afterschool program hosted by the community center and was a past participant of the SEP. Buddy was a bit more verbal than his peers in answering the questions that I posed to him. He freely discussed his likes/dislikes about technology, primarily from an aesthetic perspective; his beliefs about racial identity; and his thoughts about community and the use of technology within community.

Buddy's mother, Ms. B is adept in the use of ICT and advocates for her son to learn and be productive with his use of technology. Buddy's case denotes aspects of impact of socioenvironmental ecological factors within his mesosystem and exosystem that influence the development of aspirational, familial, navigational, social, linguistic and resistant capital. Similar to other parents', Ms. B's use of ICT drives her to mobilize and activate experiences which support Buddy in the development of technocapital. Ms. B and Buddy seemed to share a different sense of aspirational capital from the other participants; whereas their aspiration yields beyond the influence of ICT helping themselves but the use of ICT use to not only engage with but assist and educate others.

Funds of Knowledge/Community Cultural Wealth Attributing to Technocapital

Buddy shared that he wanted to be a part of the study because he really liked computers. He shared,

I want to be a part of the study because I really like computers. I like technology. I like using a tablet, iPad, or computer because you get to do

a lot of things on them and on some things (referring to ICT types), you can get different things. Like on an Android, you cannot get apps like the Harlem Shake app¹⁴, but on the iPhone 5 you can get that. You can make Harlem Shake app videos and Gangnam Style¹⁵.

Buddy likes that he can use technology to learn about things in which he has an interest, like dancing. Buddy likes to dance. He also likes it that you can use technology to access different tools and features on a particular tool. He stated, “I also like using them [technology] because you can learn a lot of things from it ... you can learn about downloading things, the live streams.” Buddy also has some dislikes about using technology. As he explained, “... sometimes when typing and wanting to download a game it won’t let me type the word; sometimes it gives me a different word prompt.”

Buddy expressed strong feelings about ICT design and aesthetics. His preference and motivation for using ICT is based on external factors of look and feel. Sometimes he doesn’t like the surface feel of the tool because it may easily slip out of his hand. He shares, “Sometimes when you are walking, and you are only walking, and it just slips out your hand. I need a grip. It needs a grip.”

Buddy also expressed admiration for the design of his mother’s iPad. He stated,

Another reason I like it, because my mother’s iPad, when I’m trying to watch a movie, I don’t have to bend my head over like this (tilts head) when I’m in the bed. You can just fold it up in the back. It is like a little slit where the back part you can put it under and it will just stand up by itself.

¹⁴ Harlem Shake app was an app created after a popular dance that was created in 1981. However, the dance became an Internet sensation going viral in 2013 prompting the creation of an app of which individuals or groups could create their own video and instantly share with others.

¹⁵ Gangnam Style apps were created in response to a popular song released in 2012 by the artist PSY. The apps were popular for incorporating the song and dance into videos and images of the user and sharing with others.

Buddy shared that sometimes his emotions are affected when he uses technology, specifically games. He shared he can get frustrated and not want to play certain games anymore and start to play another game that may be easier. Buddy, unlike other participants, really vocalized his thoughts often about the use of technology, including the aesthetics, touch and feel of ICT.

Ms. B, Buddy's mom, expressed support for Buddy's involvement in the SEP. She shared that she was not very involved with the center and what was going on there but did attend monthly meetings throughout the academic year and during SEP, when the meetings did not conflict with her work. She shared that her understanding of the SEP's primary goal was to provide academic enrichment and recognized the space as valuable to her son's academic and social wellness. She said that she has to consistently stay on her son to do the academic work that is required of him and saw the SEP and its relationship to the community center as being vital to providing capital building experiences for Buddy. To Ms. B the community center was part of a triangle (home, school, center) that supported Buddy's academic development.

Ms. B shared that when she uses technology it is mainly work related or dealing with her "text ministry". She confirmed her use of an iPad and a laptop mainly for communication with close friends or people within her ministry. Creatively, with the text ministry, she shares Biblical scriptures and encouraging words related to scriptures to inspire family, friends, and strangers. She had been operating her text ministry for about a year. Within the text ministry, she

sends a text by phone or email and has used technology to compile a pamphlet of the text that she shares with people. She stated,

I just send a text out either by phone or email. I put it on paper too. So that's when I use my laptop to copy and paste some messages, the messages from my e-mail and I put it into Word and it is like a little pamphlet that I pass out. I ask people if they have text messaging and then I ask them if I can add them to my ministry. So, I would show them like a copy of it, like even from a song or something and then I would let them read it and then I would tell them basically you know I don't ask for money or anything it's just a scripture from the Bible and then just words of encouragement right under it. So, it's like a way of a daily inspiration."

She anticipates expanding her use of technology in the ministry by creating a blog and working with her pastor to create a web page, or monthly newsletter.

Regarding the activation of capital, she shared,

I try to push him to not settle for less if the teacher tries to teach him to advance: to be consistent and don't try to be average. I try to get him to expand his horizon and just know that the more you learn, it doesn't make you better than somebody, but it allows you to help other people. You know, I try to get him to just focus and not be lazy or influenced. I don't want him sitting around the table just talking. I want him to do his work. So, I was in school once before with him and I try to tell him that I'm still going to school and you can go too because it is parenting that keeps him going higher and higher and whatever he does have to do, just give it his best.

Ms. B expressed that she sees the increased use of technology throughout various community spaces surrounding her and Buddy. Ms. B went to school to become a Communications Specialist. As an Administrative Assistant, she often uses Microsoft Office Suite tools such as Word, PowerPoint and Outlook. She is concerned that technology is rapidly changing society and access to learning how to use technology is vital because it impacts employment

and ways that people communicate with one another. She is concerned that everyone may not desire or have access to learning technology. She encourages her son Buddy to use technology to learn, develop academic skills, and use “Google” to gain more information. She shows Buddy how to use technology to have a better understanding of word meaning and word use.

In relation to her activation of technocapital in Buddy’s life, Ms. B shared that she was looking into Buddy attending a middle school within the community that has a technology focus. She shared,

...When those things are presented, then you know, I feel that is what they will go do. At Howard (Technology Charter School on the Howard University campus), they give like everybody a new apple laptop and all their work is practically done on it. So, that's a good way of getting the kids to actually start their research and use technology as more than just games. They can actually learn different things if they just look it up. At his current school, which doesn't have a technology focus, I am happy that it is offered during a period of learning each day.

Similar to Diamond, when asked to share about community, Buddy briefly indicated that he lived in a community where people of varying ethnic backgrounds and incomes coexist, whereas Ms. B perceived that her community did not seem mixed in terms of racial identity. She stated, “I haven’t really thought about that because where we live at it's not so much a mix. I mean you have like one or two different Spanish people, but they are building a lot of different apartment buildings around here.” When discussing gentrification (the concern of the SEP staff and other families in the SEP), she shared,

It is not anything that I'm really concerned about. We live in a nice quiet building, high rise building, nice and clean with security. We don't really have any problems with violence. The only time it is loud where we live at is on the Fourth of July. So, I don't really have any problems. We have been there for six years.

Buddy's reflection on community quickly went from current perception to an imagined perception. In his discussion of an imagined community that he would like to be a part of Buddy shared about a secluded community that minimizes barriers to understanding others. He initially indicated that the people who would make up his imagined community were only Black and White Americans. He was concerned that when people came into his community they could communicate with others and be respectful.

When I asked about the presence of people of Asian or Spanish descent, he shared about a potential struggle for Asians and Spanish to live in his community because there would be a challenge with understanding. He stated,

... because I don't speak their language and like what if they were trying to say something important to me ... unless if I wanted to have Spanish people or Spain or something that speak Spanish and if they learn how to translate it to English then yeah, I would let them be in my community.

He shared that the imagined community is very much like his current community. He indicated that his community members (White, Black, Asians, and Spanish) were people of various genders and most of the interactions were positive and respectful. Buddy's imagination of community shows his desire for cooperation, relatability and understanding of different identities who hold a rightful place within community, which is an aspect of aspirational and cultural capital.

In regard to the school community, he mentioned the fourth-grade teacher and the interactions he has with communication, discipline, and peers.

Being near puberty, Buddy expressed his desire to appropriately communicate with girls, show respect towards girls and be mindful of boundaries in interactions with girls. Buddy's favorite subjects in school are Math and Science. He used ICT in the development of his Science project. He likes the challenge of working with a partner in Math class to solve hard problems. He shared that he often uses ICT in Math and Science. He often plays Math games on the computer and likes that you don't always have to play with others but can play alone and against the computer.

Influence of SEP Opportunity on Social Identity and Development of Technocapital

When Buddy was asked how he identified himself, he initially shared,

I identify myself as smart and intelligent, at home, respectful and 'obeyful' and anywhere else. I act like a regular child and like listen to my mother; and like if my mother takes me some important place, I act as best as I can be and I will not act up.

He further commented "I'm sometimes respectful, sometimes playful, and sometimes I act different, like the word 'code switching', like when I'm around my mother I act very good but when I'm with my friends I don't act like that."

Ms. B shared that she did not have conversations with Buddy about identity such as gender, race, socioeconomic status and related values/boundaries with technology use or gaming use. She shared not having really thought about having conversations surrounding those areas with him but indicated that it was probably time to begin those conversations because he is 11 and getting older. Although she is happy that technology is present at the SEP,

she had interest in knowing more about how the center chose to use the technology. She shared that she questions: “What is being offered? Is it being monitored? Are they just being allowed to just play games or does it have to be certain educational games?” She shared that she has been distant in addressing what goes on in the community center but will become more involved to see how they are using technology.

At home Buddy’s use of ICT is limited and boundaries are not negotiated. Ms. B shared “after a certain hour he is not really on anything. If he is on the iPad it is for a certain amount of time, a short window.” She further shared that she was not aware of whether he had a webpage, but if she was, she would monitor the content. His mother indicated that she does not feel that he has been influenced by the changing environmental factors within the community or social sites.

The influence of community staff in the application of resistant and navigational capital became apparent in the conversation on identity when Buddy shared that he considers himself as Black. Buddy shared that people who were not his race could be negative when they relate to Buddy as Black because they are not a part of his race. He brought up the racial profiling class at the SEP and shared,

... if a person from a different race says I’m Black (referring to himself) I think he will mean it in a bad way because he is not my color; and like my cousins when they call me Black, play with it like, but not in a bad way. They are just like playing and yeah that’s it. So when we were talking about profiling and profiling means like, from the story that she told us, if a White man had stole a bike and was riding past a whole lot of White people then they may not say anything ... like if the bike was on a chain the White people would walk past and say (to other White people) do you

need help but if it is like a Black person doing it, they would say get off that bike – your wrong and stuff.

Buddy shared that phones were a type of technology that he often witnessed being used in his community. He felt that technology could be used more in his community by starting up groups where people could come together to use technology, a place where more computers could be accessible, and more education can be provided on technology use in the community. He shared that conversations around technology would consist of discussions on websites and the concerns with safety, profiling. He gave examples of sharing what he learned at the summer program regarding the creation of a password. He shared:

By making like what you did, by making a group and I can, maybe I can get computers for my group. We can meet up sometime at my house... We would talk about better and appropriate websites, because some like Facebook and Instagram is not good really because you can profile easily. Like Mr. "D" talked with us about our passwords. He said don't put like no common words like chair, lion, your name or anything like that. He told us to put something like a 3 letter skip for letters like f, e, h, s, with a letter skip that becomes a word.

Buddy went on to share about how he would use technology in groups using "WeeWorld," a social networking site geared towards teens and tweens.

If I start it when I grow up...If I start it right now at this age then we would get on WeeWorld.., it's like a website, well I thinks it's an app site. Like you can hack into people stuff but people don't do that on WeeWorld. You get to dress up, talk to other people and if someone says something bad to you like if someone calls you a bad word then all you have to do is press report and click on the person that has called you something, press report and say what they did.

He shared that for children his age there needs to be more security for how they use the internet. He indicated that he and his friends don't really have a lot of conversations about the internet. He stated, "We have conversations about

technology, like let's go in the house and play the game. I'll play the PlayStation."

In summary, Ms. B's understanding and experiences with ICT drives her to mobilize and activate experiences which support Buddy in the development of technocapital. The aspirational capital of Ms. B and Buddy yields beyond the influence of ICT helping themselves but in the use of ICT to engage, assist, and educate others. The values and beliefs which stem from Ms. B's experiences with work and faith influence her perceptions and integration of daily technology use which is also a parallel to how Buddy desires to use technology to improve understanding and relationships amongst people of different communities and identities.

Summary

The results in this chapter provide an evidence-based explanation of the ways marginalized youth use ICT along with the sociocultural processes that may influence their individual use at a SEP. The results presented share the beliefs and contextual, ecological factors that contribute to the appearance and activation of social and cultural capital in the technological practices of marginalized youth. The accounts of youth and parent perspectives uniquely display the ways the funds of knowledge and community cultural wealth act as cultural capital. The participant stories present how the networks of the participants' parents and community contribute to social connectivity and the awareness of civic participation in both the exosystem and mesosystem. Each

participant has his/her own unique motivations and level of experience with ICT that was shaped often by the activation/motivation of capital by a parent and/or SEP staff. Within the interviews, the participants (particularly parents) addressed how their values and beliefs stemming from their identity and perceptions about their engagement within these systems contributed to the development of familial, aspirational, social, and navigational capital for the youths' development. In their mobilization and activation of technocapital we see that there is consistent value placed on understanding the productive use of ICT as a resource to effectively engage with others and increase learning.

Although relative to technology, the glimpses of information provided in this chapter present an evidence-based contribution to support the need to understand and advocate for funding and the development of policies to address: 1) racial/ethnic and socioeconomic differences in education; 2) the positive processes by which cultural resources in the communities of marginalized youth can be converted into social and educational advantages; and 3) increasing knowledge and utility of the various forms of capital embedded in moderate-to-low income, non-majority communities that play a positive role in youths' motivation to utilize ICT and develop digital literacy skills that increase productivity and achievement.

These areas will be addressed further in Chapter 5 in the discussion of the results of the study, including how theoretical frameworks for the study (i.e., Cultural Reproduction Theory, Critical Race Theory, and Social Reproduction Theory) can help to interpret the results. Chapter 5 will also address the

implications of the study in relation to pedagogy and policy which takes place in alternative learning spaces, along with the implications for future research and delimitations of the study.

Chapter 5

The Activation and Mobilization of Funds of Knowledge and Community

Cultural Wealth in the Building of Technocapital

In the previous chapter, I shared findings from parents and marginalized students on embedded values which contribute to cultural capital that aid in defining attitudes towards technology and the ways technology is integrated into the daily lives of students participating in a SEP. As shared earlier, the SEP supported learning in Science, Technology, Engineering, and Mathematics (STEM). The capital building experiences which took place within the youths home, community spaces, and the SEP site, impacted the connections students made with others and the student's sense of self-identity and self-worth. The exploration of socio-cultural and environmental aspects of students' experiences with digital literacy/ICT, and perceptions on the presence of pedagogical practices applied by SEP staff, family members, and peers highlighted how the activation of social and cultural capital influenced the students' experiences with digital learning/ICT. The community-embedded resources discussed within the study (i.e., funds of knowledge and community cultural wealth) positively contributed to the shaping of students' experiences with ICT and the development of technocapital.

In this chapter, interpretation is given for the ways beliefs, values, and contextual ecological factors of the SEP staff (a community-embedded resource), the student subjects, and parents contribute to the activation of social and

cultural capital in the technological practices of marginalized students within this study. This exploratory study provided an opportunity to obtain insight on environmental and socio-cultural influences which impact the student experience with digital learning and various forms of capital. The environmental and socio-cultural influences (e.g., funds of knowledge and community cultural wealth) can be applied within the conceptual frameworks of social reproduction theory, cultural reproduction theory, and critical race theory in efforts to address the development of technocapital in the lives of marginalized students.

Although social reproduction theory and cultural reproduction theory typically focus on the deficits of sociocultural resources within marginalized populations, this study addresses a counterbalance for these theories by showing how socio-cultural influences (i.e., funds of knowledge/community cultural wealth), acting as assets and strengths, can impact and provide a more wholistic picture of social reproduction and cultural reproduction that is desired for humanity. The application of assets and strengths to social reproduction theory and cultural reproduction theory could provide more equitable considerations and be deemed more objective and plausible. Critical race theory, unlike social reproduction theory and cultural reproduction theory, aims to shift the deficit view to a richer view of underrepresented populations as holding and having an array of cultural knowledge, skills, abilities, and networks that can be used to accomplish individual and collective goals in the face of systemic inequality. These aims and factors of critical race theory do not exempt the need for these constructs to not be applied to social reproduction theory and cultural

reproduction theory for a more wholistic and equitable approach to understanding and supporting the development of youth in our current and future institutions and systems of education. More consideration should be given for applying the asset and strengths based dynamic and fluid interactions derived from funds of knowledge and community cultural wealth shared between students, their families, teachers/community, and peers creating differential educational expectations and aspirations that advantage both the privileged and disadvantaged marginalized youth.

This exploration was designed to increase advocacy and consideration of strategies for the mobilization and activation of technocapital for marginalized students. The development of technocapital in underrepresented populations is progressively pivotal and should be given significant consideration. It could be more meaningful for educators, policymakers, community leaders, and families to consider the assets/strengths supporting the marginalized youths' development and place increased value and support to opening and navigating pathways based upon funds of knowledge and community cultural wealth. The incorporation of technocapital into funds of knowledge and community cultural wealth can provide additional support to leveling the playing field and changing the cycles of inequality often presented by increasing exposure, exploration, navigational opportunities, and development of varying social and academic networks.

The study addresses social processes within ecological layers and institutions in which Internet uses and digital ICT practices are embedded and

can influence capital building experiences for marginalized youth, families, and community. Previous studies (e.g., Delgado & Stefancic, 2012; DiMaggio et al, 2004; Frederick, 2009; Ito et al., 2009a/b; Ladson-Billings, 1998; Ladson-Billings & Tate, 1995) have strongly established that inequality exists in association with Internet use and skills, yet this study was designed to be a deterrent from deficit perspectives; rather, it was designed to identify strengths and potential utility of socio-cultural resources that are found in the home and community of underrepresented use. The information from the study supports and contributes to interventions and studies on improving Internet-use skills and the expansion of online activities through addressing the culturally relevant use of technology in capital building experiences.

Culturally relevant and interest-based associations with technological learning are valuable in creating and sustaining opportunities for academic growth and civic participation. Whereas understanding and intervening in the complexity of marginalized students experience of ICT is deemed unequal, this study supports the notion that the varying uses of ICT be increasingly accessible and acceptable throughout society and not just for individuals who are already in an advantageous situation. The findings of the study support and contribute to understanding the increased need for parents, educators (within all learning spaces: schools, community centers, libraries, faith affiliated spaces), and marginalized youth to recognize, mobilize, and activate funds of knowledge and community cultural wealth.

Observations of technology use and comments from staff, parents, and students indicate regardless of existing inequities (such as: internet access at home, variance in parents/caregivers academics and technological knowledge-base), the participants possessed a shared network of public culture where social media, online media distribution, and digital media production was common at the time of the study and even more common amongst students in everyday learning contexts and environments today. This lends to technology increasingly existing as a powerful counterweight to social determinism and the increased development of empowered student learning outside the boundaries of the traditional physical classroom. Although the youth participants could not speak to the power and outer boundary experiences technology allows, the parents and staff spoke to the need to mobilize and activate the development of technology in culturally relevant and responsive contextual environments as a positive force for further achievements and the development of multiple streams of capital.

Mobilization and Activation of Technocapital

The adults within the study, mainly parents, expressed varying actions and perspectives regarding the application of funds of knowledge and community cultural wealth to shape the students experience with technology to build technocapital. Participants addressed ways social and cultural resources were mobilized and activated through interactions within community spaces (i.e., schools, faith affiliated spaces, neighborhoods, and SEP site). Per the participants, the SEP site served as a cultural learning space which supports the

use of technology and ways digital technology can shape social identity, of not only the marginalized students that are part of the SEP program, but their family members as well, through the offering of technology classes supporting the management of life skills, academic enrichment for Pre-K through 16, and social networking.

With the exception of one youth participant (Rosa), all youth had parents who were open to sharing about their support and concerns for their child's experience with ICT and the desire to mobilize and activate capital, more specifically technological capital in the student's life. Cultural values and beliefs that challenge and lead to the lack of support in the development of technology skills can have an adverse effect on academic, social success/achievement regardless of the access to technology and its' benefits. While Rosa did not address ways that her parents nor anyone in her family supported her academic achievement or ICT engagement, she did access valuable social and cultural capital through her interactions with SEP staff. She shared the ways her experiences at the site with community center staff and teachers at her school influenced her desire to learn and use technology in varying ways to help her identify resources to aid her development both academically and socially.

The findings show that socio-cultural and environmental aspects influence the ways the marginalized students experience ICT in their homes and at the urban summer learning program. The students, parents, and staff members created experiences with technology enhanced by funds of knowledge and community cultural wealth, particularly aspirational, familial, and navigational

capital that contributed to the building of technocapital. The site was significant in that it served as an amplifier for learning opportunities with technology which provided supplemental support for students on varying levels of technological learning and parental support.

Communication with the parents addressed ways the increased resources (i.e., higher scale businesses, public wi-fi spaces, and diverse restaurants) within the community, due to gentrification, increased the participants' visibility and access to technology. The increased visibility of technology use by the staff, peers, family members, neighbors, and community members influenced the students desire to learn, create, and engage socially with technology. The increased visibility and access to technology within and outside of the community also influenced the parent's desire to mobilize and activate technocapital.

Gaining Insights from Theoretical/Conceptual Frameworks

The observations and communication with parents, staff, and students provide insight into the student's ecology and show how the relationships and occurrences related to the use of ICT at the site and abroad transform social interactions, peer-based learning/achievement, and new media literacy. The students' ability to have on-demand access to content, interactive user feedback and creative participation within varied learning spaces (i.e., on-site of the SEP, at home, libraries, academic classrooms, etc.) contributed to their engagement and confidence in achievement.

Funds of Knowledge and Community Cultural Wealth

In the application of the conceptual frameworks, two constructs addressing the presence of capital: funds of knowledge and community cultural wealth were the primary guides for my research. As for funds of knowledge, parents and staff utilized socio-cultural resources (i.e., networks from parents' employment, employment networks of extended family members, and social and academic networks of SEP staff members) to positively enhance the students access to human, social, symbolic, linguistic, and cultural capital, which in turn, minimized the barriers of structural inequalities within education and sociopolitical systems faced by youth. The knowledge exchange amongst parents/extended family and their employment and social networks, along with the staff members' knowledge exchange with community members and school systems provided youth with increased awareness and understanding on the possible uses of technology.

A few examples of this knowledge exchange were shared, for example: 1) Sarah and her father discussed, how as immigrants, the life challenges and values of parents' culture and social networks support aspirations held by the family to improve the life of their nuclear and extended family; 2) Keisha, who shared that conversations with her mother, older siblings, and staff within the community center prompt her curiosity and use of technology to research and gather information relating to inequity, social justice, gentrification and deciphering the quality of information found on the Internet; 3) Ms. A, mother of James and the site program coordinator, supported James and youth participants

in building academic, technological and social skills, social networks, and overcoming academic challenges; 4) Ms. M, expressed how her past experiences in working with people from different cultural and economic backgrounds contributed to supporting her daughter Michelle in exercising and building navigational capital; and 5) Ms. T, who shared a positive perception of how gentrification had increased opportunities for navigational and social capital for members of the neighborhood.

Even more so, the varied use of technology amongst these members provides additional means of exposure and connection beyond the typical environmental boundaries of home, classroom, and community. From their perspective, it can be perceived that the knowledge exchange and building of technocapital supports navigation in sociopolitical systems and increases the value of socio-cultural knowledge to enhance student learning and achievement, yielding to the conversion of different forms of increased cultural capital (i.e., aspirational, social, navigational, linguistic, familial and resistant).

The parents and students considered the SEP a positive socio-cultural resource acting as a bridge to their social, academic, and technological development. The SEP site was perceived as a space for social networking within the community by both parents, staff, and students. Through the staff's purposeful use and teaching of social media, digital media production, online learning, and media distribution within the summer and/or academic year, the SEP was perceived as a capital broker increasing partnership and bridging opportunities between marginalized community members (i.e., parent and

student participants) and surrounding public schools, businesses, and local universities) in the students' development of technocapital. The partnership opportunities between the schools, parents, students, and the SEP allowed for leveled power dynamics which support the application of culturally responsive pedagogy and collaborative approaches to learning between student, staff, and families of the students. The bridge provided by staff and parents in support of the marginalized students' technology use aided in navigation and traversing of socio-cultural boundaries of time and space exemplified by diverse engagement with digital learning and digital media practices.

As for the construct of community cultural wealth, observations of the SEP staff and communication with parents emphasized the importance of the SEP site as a communal resource which acted as a bridge to other communal resources often with staff acting as cultural brokers between the parents, students, socio-economically diverse neighbors, schools, and businesses within the D.C. area. Both students and parents indicated that the SEP staff strategically assisted in the acquisition and maintenance of aspirational, navigational, social, linguistic, familial, and resistant capital. For example, Ms. O, (Drake's mom) perceived the summer program as a mentoring opportunity which mobilized social capital and Ms. T (Diamond's mom) perceived the program as key in the provision of activities and programs enhancing the use of technology as a tool to increase learning.

Adults in the students' lives supported the imagining of possibilities and opportunities beyond the students' present circumstances, parents' occupational

status and students' future academic attainment. The SEP site offered aspects of linguistic capital through the forms of visual art, music, and writing which can expand into the development of such social tools as vocabulary, cross-cultural audience awareness, metalinguistic awareness, civic and familial responsibility, and social maturity. The development of linguistic capital modeled and activated by the adults within the students' lives was relevant in youths beginning to understand and know the importance of when to "code switch" by altering their language registers or styles to communicate with different audiences which is vital to overall safety and success.

In the interviews, the students and parents addressed how technology was used in the sharing of cultural connections and knowledge amongst family, extended family, and community members that carried their sense of family, community history, memory, and cultural intuition as familial capital. For example, the interviews with Sarah and her father, Mr. T, identify systemic and cultural factors that influence how Sarah learns and engages with ICT. Mr. T's interview emphasized the importance of strong ties with family and community, and how those ties might be accessed through technology. Other examples include the use of technology to expand communities, through border crossing experiences, such as when Diamond and Sarah used technology for learning and communicating with others in Spanish building their linguistic capital.

Within the summer learning lesson plans, students were encouraged to use technology to learn more about their community history, to learn about the other ethnicities of residents and cultural factors of businesses within the

community, to address concerns of displacement, racial profiling, and navigation of new potential resources and opportunities as a factor of gentrification. Both parents and students saw the SEP site as essential in the maintenance and provision of social networks for exchanging resources and accomplishing tasks. The varying community networking opportunities of all participants allowed for increased capacity to further extend the students' social networks and increased agency amongst students and parents in the facilitation of navigation through schools, jobs, health care, and judicial systems.

Community members were defined by participants in varying ways based upon the communities that the students identified, which often expanded their geographic neighborhood and/or the surrounding location of the SEP site. Some of the parents and site staff shared that because of gentrification many families had family members who moved away from the area because of limited rent control and an inability to further afford housing in the community. Nonetheless, the SEP site remains to this day as an empowering community resource continuing to establish intergenerational communal bonds and more recent development of multiracial community collaboration. In this way, as it did for the participants of this study, the SEP serves as an important identifier and distributor of community cultural wealth.

It is possible that these aspects of cultural capital can be developed without the use of ICT or even participation in a SEP. However, a direct relationship was observed in how social and cultural capital played a role in how the subject's use and understand ICT as well as how ICT increases and expands

nuanced forms of cultural and social capital that can be accessed. Parents who utilized ICT in their own daily practice of work, social communication, management of home environment, and learning were key contributors in their children's mesosystem for the favorable technodisposition in the home and the mobilization of technocapital for their child (e.g., Sarah, Michelle, Keisha, Drake, and Buddy). Their students were very comfortable, creative, and adept at learning and socializing using ICT. Students who were highly knowledgeable in the use of ICT, often had parents who were very knowledgeable in ICT use; even though the youth's knowledge was in many ways surpassing their parents (e.g., Michelle, Sarah, and Drake).

The habitus of the parents enhanced and appeared to be leveraging technology to support the acquisition of additional forms of social and cultural capital. The parents had spoken of times past where they were not as connected to technology but with recent increases in mobile access, lowered internet costs, varied applications that require small levels of digital literacy, and increased availability of ICT classes at the SEP site and libraries, they were becoming more "connected" and their technodispositions more positive. The habitus of the parents and SEP staff contributed to the favorable technodispositions among the youth which strengthened the students' digital identity and leveraged technology to gain access to new forms of social and cultural capital that could impact their life trajectory.

From this lens, the participants' utilization of sociocultural resources; knowledge exchange amongst family, employment and social networks of

parents and staff; and the varied uses of technology and technological skill sets act as factors of capital contributing to funds of knowledge/community cultural wealth. The knowledge, creativity, and experiences of the participants, their generation of assets and resources which may or may not have operated in dominant culture, are valuable forms of capital that should be perceived as such by marginalized and non-marginalized populations. As discussed in the following sections, these factors of capital contribute to the development of technocapital and can positively further impact outcomes of marginalized youth populations by: 1) narrowing participation gaps in technology use as a result of past structural inequalities of societal institutions (addressed in social reproduction theory), 2) increasing access to physical and digital spaces empowering use of ICT and addressing unchecked cultural stereotypes and bias (addressed in cultural reproduction theory), and 3) minimizing deficit view given to communities of colors as a result of past cultural inequalities (addressed in critical race theory where agency and creative possibilities are acknowledged).

Ecological Model

Based upon the communication with the adults (i.e., parents and SEP staff), the usefulness of Bronfenbrenner's ecological model comes into focus. Bronfenbrenner's ecological model highlights the layered complexity of what influences the children's use of technology, which in turn suggests the value of applying multiple theoretical perspectives as layering on top of funds of knowledge and community cultural wealth/capital. Adults from different fields of interaction plant seeds of information and experiential opportunities overtime, but

particularly during the course of the study, in varying environments (i.e., networking systems) to fortify capital building opportunities to enhance the youths' social development, academic learning, and career goals.

The study shows evidence of the youths' interaction within various systems, layers of ecology, and the developmental effects presumably accumulated over time due to the presence of life transitions, environmental factors and historical events. Shared information from the participants identifies proximal (e.g., individual interactions between participants) and distal influences (technological changes in neighborhoods and communities) on the youths' developmental processes contextually over time. Although there is mirroring of social and economic inequalities embedded in the structure of society present in their ecological spaces, there is still evidence supporting the use of ICT to broaden access to and utility of additional forms of social and cultural capital to more effectively accomplish tasks, specifically those related to achieving educational and career goals.

The SEP staff that worked with the students aimed to provide a space for their development socially, culturally, academically, and technologically through the planning and implementation of structured daily activities. The relationship building interactions between staff and student participants served as part of an exosystem that enhanced student social connectivity and civic participation. It is clear from the expressed desires of the staff; the observed experiences and interactions with the students at the site; and the interviews with the students and parents, that the site served as a space which promoted various aspects of

capital (significantly technocapital) through providing access to funds of knowledge and community cultural wealth.

Parents, Staff, and students indicated they perceived ICT as supporting opportunities to access cultural and social networks and engage in further learning academically, socially, and culturally. From an ecological perspective, the study shows how interactions within the youths' microsystem, exosystem, and mesosystem (i.e., family, peers, neighbors, school staff, and SEP staff) directly impact the youth's development. Factors of the macrosystem (i.e., attitudes, lifestyle, resources, patterns of social interchange, shared ideologies of culture) and chronosystem (e.g., transitioning to middle school; the patterning of events like gentrification within their community; and the increased use of social media due to the awareness of racial profiling and impact of Trayvon Martin's death, the recent reelection of President Obama, and the birth of the Black Lives Matter Movement) appeared to have indirect impact on the youths' development.

While an ecological perspective highlights the varying social layers or systems that influence an outcome, it is relatively unspecific about the resources used to produce an outcome which impacts and/or influences aspects of social/cultural reproduction and concerns of structural inequality presented in critical race theory. To that purpose, the funds of knowledge and community cultural wealth constructs are more useful.

Social Reproduction Theory

Overall, the dynamic and fluid interactions amongst students, their family, staff, and peers at the site (i.e., social institution) created optimistic expectations

and aspirations for positive social reproduction contrary to other societal and economic institutions which have been apt to reproduce social inequality. The staff and parents modeled and promoted norms and expectations associated with perceptions on how individuals should interact with social and economic institutions. These norms were modeled and communicated in the interactions between family members, in the way parents addressed interactions with the SEP and school officials, and in the way staff engaged with students, parents, community members, and school officials.

In reference to Bourdieu's theories about social and cultural capital, the parents and SEP staff aimed to successfully navigate beyond structural constraints typically preventing youth from accessing forms of capital. Some of the reported ways the parents and staff mobilized beyond the constraints include: 1) the development and application of learning activities in summer curriculum of SEP program (technological and nontechnological); 2) tapping into their identity by supporting the voice of each youth through check-ins amongst parents, youth, and staff regarding social experiences, community involvement, and academic opportunities; 3) meeting the students where they are academically and socioemotionally by taking time to proactively have conversations to discuss expectations, address concerns and assess experiences (e.g. Rosa, Sarah, and Michelle); 4) engagement with other cultures and groups within their community, and 5) through virtual exploration outside of their communities which supported increased comfortability and positive interactions within traversed social and economic institutions. The social capital provided by the site provided access to

a broader range of resources and connections that supported both the student and the family of the student. The site staff provided capital building opportunities such as tutoring, emotional support during stressful periods, access to knowledge to attend specialty learning programs, access to knowledge for financial assistance to attend college, and support for parents in the successful activation of cultural capital in interactions with teachers and school administrators. The parents within the study were knowledgeable and skilled in negotiating spaces for learning and successful transitions of their children from elementary to middle school programs (particularly those with a focus on STEM or STEAM).

Based upon the interviews with all the participants, there was mention of how the onset of the youth participant's technology use was due to initial introduction/interactions with ICT from parents and family members, expanding over time in various learning ecologies. Forms of ICT use through digital media was discussed by participants as strengthening their social ties, acting as a bridge for accessing various forms of capital, and in the promotion of more diverse discussions amongst peers, parents, and SEP staff. The adults in the youth participants' lives aimed to provide balance and a realm of control in the youths' lives to minimize the weakening of social bonds and any decrease in interactions with others outside in physical non-virtual environments. The adults in the study all held the belief that engagement with ICT could disrupt structural inequalities, create, and enhance learning ecologies and promote increased positive outcomes for the youth.

The youth showed agency in their community and discussed their desire to engage further the upcoming year in school and community activities. The parents and students reported that each student did well academically, apart from the student (Rosa) for which there was no parental engagement. This student discussed how her mother was often frustrated by engagement with teachers and administrators within the school. Nonetheless, she had very positive engagement with the staff at the site who supported the mother with resources for learning, health, job preparation, and engagement with the school. The student relied on the staff at the site to assist her with problems in school related to behavior and learning. This exploratory study shows evidence of the way varying factors, all related to the presence of social capital - 1) family structure, 2) interactions within families and connections within schools and communities, 3) supportive interactions with individuals outside the family, and 4) the productive resourceful use of ICT - can influence educational aspiration and achievement contributing to more positive forms of social reproduction.

Within the study, and through the perspective of social reproduction theory, consideration was given to ways structural inequalities can limit marginalized youths' understanding of technology and how the use of technology can also leverage access to important forms of capital. However, due to life experiences (possibly related to age) the children were just beginning to have an awareness of issues related to culture, socioeconomic status and race. Therefore, parents and staff provided perspectives on the complexities of structural inequalities based upon the feedback received from youth. The adults

would expound on many of the experiences the youth participants shared. For the youth participants, the questions of indifference related to race, poverty, and gender (i.e., self and the other) were just beginning to develop and discussed in conversations with the adults and other peers in their lives. The SEP site and home were perceived as spaces where the differences were beginning to be addressed. Only two youth (Sarah and Buddy) could speak to situations of which they experienced their culture being contested and negotiated in varying societal institutions, but others only witnessed the contesting and negotiating of culture through media (often using ICT).

The youth were all aware of the varying authentic perspectives of marginalized people regarding the Trayvon Martin incident through use of ICT. Time/space was provided at the SEP to help the youth process and share their own opinions in relation to what they experienced through social media. Many youth participants shared the concern and frustration of racial profiling and how it increased due to gentrification within their own communities. The mainstream media was not their main source of information, but their understanding, empowerment of voice, and naming of their individual realities came from the use of ICT and learning and socialization on social media websites as part of the SEP program curriculum. The youth participants showed eagerness to use their tablets to learn about social justice, injustice, inequality and through this they were faced with the challenge of learning/mastering technology and the ability to manipulate technology and learning experiences through self-expression and research to inform peers and family.

Like the students in Barron et al.'s study (2009a), while attending the SEP program, students participated in seven fluency building activities in which they engaged with technology to: 1) create multimedia presentations, 2) participate in computer programming, 3) use desktop publishing applications, 4) create website designs, 5) create art, and 6) basic topic research activities. The youth participants shared technology was often used to communicate with others in school, SEP, and at home by 1) reading emails, 2) sending emails, 3) use of the Internet games, 4) participating in chat rooms, 5) communicating globally while in school, 6) communicating with students in other schools, 7) pen-pal exchanges, and 8) social awareness exchanges. These findings indicate that as the youth became more technologically fluent, their learning ecologies diversified, providing them with greater access to learning opportunities impacting the prevalence of structural inequality. Using technology to learn about other cultures and cultural places within their community, historic sites within their community, and even assisting peers and other community members who accessed the SEP, supported the youth participants development of stronger ties to their community because of the learning exchange and the ability to share new forms of technological knowledge with others.

Another structural inequality disruptor, similar to Hohlfield et al.'s study (2010), adult participants mentioned how access to ICT increased improvement in communication and cooperation between parents, the SEP, and community school site (where the majority of the participants attended), and the community. Adults shared that increased access to ICT strengthened social ties and access

to pertinent community resources. The interactions with ICT increased families' social capital and access to educational resources, promoting positive educational outcomes for students, including in schools that served low-income families. The study's findings support the importance of continued incorporation of ICT as a communication strategy to connect families, schools, and communities. The strategies employed created dynamic relationships that can be used to increase social capital and empower citizens and families, which improves the outcomes of students within their schools.

This study highlights how steps taken by parents, students, and community members to mobilize resources can narrow access to ICT and the participation gap to activate additional modes and measures of capital. The knowledge, experiences, and aspirations of the adults in partnership with the youth and one another acted as structural inequality disruptors promoting positive outcomes. From this study, we see a direct relationship in how positive relational alignment between agents and social institutions will yield desired outcomes. However, when there is no value(s) or a disconnect in the value(s) placed on the funds of knowledge/community cultural wealth of the agent by the social institution, the experience will result in limitations contributing to negative outcomes and the inability to navigate beyond structural constraints typically preventing marginalized populations from accessing forms of capital. In efforts to have a deeper understanding of the oppressive phenomena of structural and systemic inequalities, cultural reproduction theory allows us to access and view

the shaping of cultural frame(s) for which marginalized youth see themselves and others as valuable members of the community.

Cultural Reproduction Theory

Cultural reproduction theory was used to explore ways in which the cultural perspectives of the youth were contested and negotiated through the use of technology. Participants shared aspects of enculturation through socialization within the home in which the parents/grandparents encouraged the youth to adopt cultural norms/values to sustain traditions. The participants also shared aspects of diffusion through socialization outside of the home in which staff encouraged the youth to adopt cultural norms and behaviors beyond their traditions, so as to create opportunities for change through cultural assimilation and opposition. During the study, most adults appeared to share a common goal - to support and facilitate youths' navigation of academic and community spaces with success and safety. Navigating these spaces involved identifying and addressing areas of inequity, difference, misunderstanding, and incompatibilities through "code-switching", resisting negative stereotypes, and cultural bias, while at the same time, using cultural norms and standards of dominant groups to access and utilize cultural resources to promote social equity and their own worth.

In community spaces and homes of marginalized youth, it is important to continuously be mindful of aspects of cultural capital associated with their identity, such as community cultural wealth and funds of knowledge as resources to enhance growth and development. In regard to deficit perspectives on youth

academic performance, the study showed ways that parents and staff partnered in providing youth with “normative” dominant culture knowledge and skills. The study also shows that parents placed high value on providing “appropriate” support for children’s education and social development. All participants indicated ways in which access to cultural capital and social capital using ICT increased their access to other forms of capital. The SEP site was an “affinity space” where the youth shared learning and work; received feedback from instructors, parents, and staff; and engaged with local and global community members expanding their social networks.

In observation, all youth participants at the SEP site engaged in learning and social activities which supported their ability to be creators and not simply consumers in their use of technology. The staff used culturally relevant and responsive computing exercises which did influence the things the students learned, created, and how they communicated using technology. It is clear from the responses and observations of all participants, in association with the views of Warschauer (2003) and Livingstone (2012), digital literacy/ICT is an effective learning tool which supports reimagined learning infrastructures.

Digital literacy/ICT fundamentally transforms and translates knowledge and information impacting relations between pedagogy and society and educator and student. Through the use of ICT within the SEP programming, the youth: 1) created visual art; 2) developed and shared stories; 3) explored and engaged with local and global communities of difference; 4) explored STEM and STEAM related activities; and 5) explored and discussed aspects of identity related to

critical issues of systemic inequality (i.e., cultural stereotypes and bias). In these ways, access to ICT and SEP programs provided powerful forms of resistance capital to counter prejudicial forms of cultural reproduction. While social reproduction theory and cultural reproduction theory can be used to highlight how marginalized youth and their families leverage available resources to promote positive outcomes in their communities, this is not the expressed focus of these theories, which tend to highlight the oppressive effects of dominant institutions and cultures. Critical race theory, on the other hand, while acknowledging structural and cultural inequalities, also acknowledges the agency and creative possibilities of oppressed groups, such as the marginalized youth of this study.

Critical Race Theory

Critical race theory highlights how the participants leveraged their social and cultural resources to transcend structural and cultural inequalities. Through critical race theories we apply aspects of community cultural wealth in knowledge, skills, abilities, and contacts that are used by marginalized populations to survive and resist forms of oppression. The SEP site is a valuable resource which supports the transformation of education within the community and empowers its' community members to identify and connect with other assets within and outside of the community (particularly with ICT as the first point of access) to transcend structural and cultural inequalities. Both youth and parents shared a high perception of technology's utility for their community and perceived themselves as participatory members of a digital community. The youth participants obtained a greater sense of empowerment as the culturally relevant

pedagogical activities associated with technology and research became more demanding and connected them to making a difference within their community. In this light, a definite strength of the SEP was the promotion of asset-building, encouragement of reflective approaches to learning and connectedness with others that can contribute to diverse and necessary technologists for the future.

Within partnership opportunities, actions were taken to support the utility of socio-cultural knowledge and understanding within student learning and engagement with technology. Based on the experiences shared by the participants in the results section, funds of knowledge shared by adults grow to become different forms of capital in the lives of the students. Parents and staff both shared their skills and knowledgeable ways to use technology often at work, SEP site, and at home. The SEP site attributed to a powerful extension for learning by bridging families, schools, and community. Communication with both parents and students indicated that the SEP staff provided additional learning (technological and non-technological) supporting socio-emotional development and civic participation of both marginalized students, their parents, and community members. Sometimes there was an exchange of technological skills between the student, their siblings, and adults; whereas they taught one another diverse ways to learn with technology and be more efficient in work and school settings attributing to further development of human capital in the home and community. The social networks of the adults supported mobilization and advocacy for increasing the student participant's exposure and understanding of 'others', seemingly culturally and socio-economically different from the students

(i.e., professors, student mentors, business owners, professionals with diverse careers [especially technology], etc.) contributing to social capital and emergent cultural capital.

The cultural connections that the adults shared with the students helped to create positive forms of identity; understanding of cultural norms, traditions, and beliefs; and supported norming towards varying forms of tech use (e.g., encouraging students to be creators and not just consumers of digital content). The parents and staff heavily encouraged youth to acquire knowledge of their own race/ethnicity (African American, African, and Caribbean) as well as to learn and engage with other races/ethnicities within their community. The adults wanted the students to have positive self-images and see themselves as productive and contributors to their community and overall American society, despite the challenges of being within a marginalized population.

All participants shared concerns with balancing assimilation and aspects of resistance. The adults had conversations with the students regarding advocating for social justice, as well as with working through existing inequalities and economic barriers. The adults used technology with their students to address applying aspects of culture and identity to technology use in gaming, learning, and sharing about culture. Some of the technological learning tools used characters that were representative of the student participants identity, giving students a stronger sense of worth and countering negative stereotypes. Having a strong cultural identity as well as knowledge about other cultures lends

to increased cultural capital which also yields to development of other forms of capital.

Observations and brief communications from student participants indicated mobile ICT interaction allowed for perpetual contact, identity construction, and prosumption yielding technocapital. Perpetual contact through ICT increased levels of engagement with peers, family members, and teachers/staff on site. Constructions of self-identity was observed in the students' external and internal display of their tablets. The student participants consistently kept their tablets visible to peers, staff, and family members. The tablets would sometimes become a focus of conversation and perceived as a form of capital asserting social position and influencing impressions made on others.

Observations and participant responses revealed peers and family members requesting and/or even bartering with student participants for use of tablets. Self-identity was also recognized by the artifacts shared and created using the tablet (i.e., cultural images of family, community, events, stories, assignments, etc.). The act of prosumption was perceived through participant activities on and off-site for which youth developed and shared experiences through photo-sharing, digital journaling, and exploring resources/story development while learning at the SEP site.

The findings shows that there were a few parents who were bilingual and/or provided their children with specific opportunities to become bilingual. Nonetheless, technology was sometimes used as a resource to increase the

student participants linguistic capital, which heightened their cultural capital and helped in the development of linguistic capital. All of these funds of knowledge provided by the adults in the student participants lives are key factors that need to be acknowledged and built upon in the lives of underrepresented students.

It is critical for educators, community leaders and family members to come together and assess the knowledge and skills, social networks, socio-cultural norms, and language/communication skills within the community that can be used to promote honor and prestige within the lives of their students. Having a capital conscious mindset (educating parents and youth to recognize, mobilize and activate funds of knowledge and relevant aspect of community cultural wealth within their ecology) and applying these sociocultural resources within the community help in the development of capital, even more so by championing more productive ways to use technology and develop technocapital. Educators, community leaders, and parents, who are mindful of funds of knowledge associated with students and their families, can draw on these varying forms of socio-cultural resources embedded within the communities to create enhanced and productive uses of technology that can yield stronger educational opportunities and socio-economic outcomes for underrepresented students over time.

Overall, the applied aspects of community cultural wealth (i.e., attitudes, knowledge, cultural values, traditions, skills, abilities, and networks) used by all participants over time support the minimization of the deficit view portrayed on and experienced by communities of color/marginalized populations.

Understanding how participants leverage their social and cultural resources to transcend inequality is a key factor of CrRT and necessary to illuminate the agency and creativity of participants as opposed to a focus on the oppressive effects of dominant institutions. Modeling the factors of community cultural wealth, can possibly guide marginalized populations in assessing the value of their own aspects of community cultural wealth and increasing capital building opportunities.

While funds of knowledge (Rios-Aguilar et al., 2011) and community cultural wealth (Yasso, 2005) were the major constructs used in the study, the ecological model overview (Bronfenbrenner, 1986) encompasses these constructs which influence the development of capital building opportunities contrary to negative or deficit inducing strategies systemically present in social reproduction theory (Collins, 2009); cultural reproduction theory (Bourdieu, 1986); and critical race theory (Delgado & Stefancic, 2012). Each of these theoretical/conceptual frameworks or lenses provided complementary, though somewhat different, perspectives about how marginalized youth and adults accessed various forms of capital to address structural and racial inequalities in the pursuit of developing useful forms of technocapital.

In a critique of technology use and access, Gorski and Clark (2003, p.30) share the importance of examining “technology related inequities in the context of larger educational and social inequities, keeping at the force of the discussion, the fact that those groups most disenfranchised by the digital divide are the same groups historically disenfranchised by curricular and pedagogical practices and

other aspects of education (and society at large)". This perspective influenced my application of the ecological model and the various conceptual theoretical/frameworks to perceive, explore, and understand systemic socio-political forces that influence the way technocapital opportunities are mobilized and activated in lieu of social inequalities. The conceptual frameworks also helped to illuminate how perceptions of technology and relational access affect political power, (i.e., ability to control the behavior of people and/or influence the outcome of events). Political power enables people or groups to control the policies, functions, and culture of society, which in turn shapes the social and cultural relationships instilled in the students, influencing their social identity, the role technology plays in their lives, and the development of technocapital.

Research has shown that the intrinsic motivation of adolescents to succeed academically during transitions from elementary to middle school decreases with age (Gillet et al., 2012). Characteristics of adolescents, in general, include dramatic changes in the transition to middle school concurrently impacting physiological, psychological, social, and cognitive development; a timeframe in their life when structural changes and identity formation threaten belonging and academic success (Borman et al., 2019). By examining the experiences of youth during a critical developmental stage, using various theoretical/conceptual lens, the study provides some insights into how enhancing socio-cultural relationships in academic and community spaces and increasing modes of engagement via ICT can play a pivotal role in strengthening

adolescents' identity/belonging and empowerment, especially within marginalized populations.

Pedagogical Considerations for Instructions and Programming with ICT

In relation to this study, several approaches can be beneficial for supporting the use of digital technology to support academic development and shape the social identity of underrepresented youth. As shared in Chapter 2, educators that use cultural references to impart knowledge, skills, and attitudes empower students intellectually, socially, emotionally, and politically. It would be advantageous for educators to assess the youths' areas of interest in relation to their environment and/or identity and apply those meaningful areas to lesson plans and activities to increase learning engagement, creativity, and retention. It is important to be mindful of varying approaches to addressing aspects of cultural reference, social justice, and pedagogical style as children vary in aptitudes, backgrounds, and beliefs (e.g., use of vernacular and heritage culture, social critique, social affirmation, and pedagogical styles of passive and active learning).

Once areas of interest are identified, support and establish means for youth to work within established safe boundaries to accelerate creativity and learning by moving from “messaging around” (e.g., tinkering, exploring, and extending their ICT understanding) to “geeking out” (i.e., having a specialized knowledge of ICT use that affords status and credibility). It would also be helpful for educators and parents/caregivers to communicate about parents/caregivers' perspectives and use of technology as parents/caregivers (who are often

surpassed by their children's ICT use) often influence use and provide the youths with resources for initial technology experience through gaming, cellular devices, social media, electronic notebooks. Often the parents/caregivers can benefit from ICT learning opportunities and are better able to support the youth in the youths' ICT engagement when the parents/caregivers have a growing experience using ICT as well. Lastly, keep in mind that although culturally responsive education focuses on self-identity, many children are "hybrids" and/or the classroom as a collective is, so it is important to give youth the flexibility to expand their interest by exploring other cultures and identities which can influence their capabilities and learning with ICT.

Delimitations and Current Implications in Relation to Pandemic

I chose to address the delimitations of the study by focusing on the scope of my research aims and research questions as opposed to the limitations of the study which reflect shortcomings based on practical/theoretical constraints. As mentioned in chapter 3, the delimitations of the study are related to the selection of the participants, the timeframe of the fieldwork, the identities and experiences of the researcher and the site of study. Because of the age and somewhat limited experiences of the youth, it is possible that the participants did not fully disclose relevant experiences or concerns about the use of technology during the summer program. The participants were doubly self-selected: children and parents who decided to take part in the SEP, and from them, the children and parents who were willing to take part in the study. Because of this, the

participants may not generalize to other participants at similar sites or even in the surrounding neighborhoods. My focus was delimited to the beliefs and lives of youth and adult participants directly associated with the SEP site.

Being that the fieldwork was a six-week duration case study for a particular group of students at a particular time and space, the ability to see effects over time and the amount of data collected may have impacted outcomes of the study. Although additional opportunities for data collection increased information available for analysis, a longer time period may have provided greater opportunities to build trust and assess topics in greater depth. In addition, the primary focus of the fieldwork attended to the identities and experiences of those connected to the site at that particular time and may not address the relevant cultural influences grounded partially or fully outside of the site.

Whereas with the surge of COVID-19, the entire world experienced a stronger reliance on the use of technology for necessary daily functioning in modes of learning/achieving, communicating/connecting, and overall living. The onset of COVID-19 highlighted and quickened movement towards increasing systemic infrastructures for increased access, exposure, and flows of technological information for which many families and instructional staff were unprepared and quickly had to navigate ways to minimize barriers to connecting and learning irrespective of geographic and socioeconomic status in a virtual learning system/environment. The COVID-19 pandemic was a wake-up call to the importance of having and further developing technocapital in many ways, but particularly in education, to expand border/boundary crossing opportunities that

yield increased modes of capital, success, and achievement. The perception on the importance of access and use of technology has increased for educators, youth, and parents.

Although the onset of COVID-19 increased technology access to many marginalized students there is still an ongoing need to address digital inequality. Inequality in education systems still requires increased access to ICT and necessary resources to support the creation and maintenance of cultural capital of creativity, productivity, and entrepreneurship through use of technology by all stakeholders (i.e., parents, educators, community members, and government leaders). The ramifications of social distancing and quarantine increased the need for access to digital tools/ internet use, quick learning of digital software and hardware, varying means of communication, and rapidly changing policies regardless of an individual's disposition towards ICT. Society was seemingly forced to reckon with any potential preconceived assumptions that may have hindered a desire to use technology creatively and productively and fully see technology use as a major source of information communication that impacted any opportunity for growth and development of capital. However, the mobilization and activation of humans in how ICT is used determines the users' maximized outcomes. The stratification of the health pandemic modified cultural assumptions around the need to use technology and varying forms of social media. From an ecological perspective, the increase in our need for human capital has a direct relationship with our need to build technocapital within homes, community, and education structures.

Recommendations for Future Research

Overall, the education system and society can benefit from further studies which address the consideration of social processes within institutions where Internet use and digital practices are deeply embedded. The need for technology access and understanding during COVID-19, led society to believe that it is nearly impossible to function without a basic ICT understanding and skillset regardless of identity and background. Therefore, more studies leading to interventions for access and improvement of Internet use and skills are valuable in minimizing structural barriers supporting inequality.

The COVID-19 pandemic came on unexpectedly and fast. Educators, administrators, students, and families had to quickly learn what they did not know about technology to practically survive. A deeper look and understanding of pedagogical practices during the pandemic and post pandemic seem warranted for the improvement of implementation of ICT in learning environments. Further research and implementation studies addressing the lived experience of students during COVID (connecting the uniquely intertwined home and school experiences) can further inform educational administrators and collaborators in education (i.e., students, parents, teachers, and other school staff) on the development of resources, lessons, and best methodologies to support academic and social success for all students, but possibly even more so for marginalized students. More quantitative and qualitative evidence-based information can aid in guaranteeing that ICT and forms of digital media are accessible throughout

society which could also allow for more diverse and inclusive creation, development, and establishment of resources (regardless of whether an individual is in an advantageous situation) to meet needs and support varying capital building opportunities.

Based upon findings, analysis, and conclusions from this study, it would be informative to consider following the youth's technological learning and engagement over time each summer in varying alternative learning spaces. Research shows that youth are developing forms of media literacy in their use of ICT that is extremely meaningful to their youth-centered social and cultural world. A longitudinal study which shows ways that culturally relevant peer-based learning expands technocapital may allow for stronger insight on observations for disrupting educational stratification and systemic/structural inequalities. It would be beneficial to develop pilot implementation study programs to assess and explore partnerships between schools, alternative learning sites, and community which supports the inclusion of values and beliefs on implementation of ICT to further develop technocapital for marginalized populations. The pilot program could allow for further tracking of youths' understanding of self in relation to race, gender, and social class to support efforts to ascribe characteristics to their developing identities and whether their belief about their identity influences the value they place on using ICT for academic and nonacademic activities.

Lastly, another consideration for future research is the development of a capital conscious curriculum with a culturally relevant pedagogical approach for marginalized middle school parents, students, teachers, and administrators

which supports the assessment, identification, mobilization, and activation of funds of knowledge and community cultural wealth unique to individuals and communities. The capital conscious curriculum could be created to provide ongoing assessment and implementation of ways to develop multiple opportunities for building capital based upon what is known and valued within an individual/group's culture in relation to other networks/systems associated with or relative to traversed ecological spaces. Evaluation of programs that use this curriculum annually, and over a period of 3-5 years, may provide additional insight into how to enhance and strengthen asset-based pedagogical models within and amongst alternative learning sites and school systems that educate marginalized youth.

Appendix A.

Child Assent Form

Project Title	Waltzing with Technology: An Ethnographic Case Study of Marginalized Middle School Youths' Experiences with Information Communication Technology.
What Is The Purpose of the Project?	I am Kenyatta Crenshaw, a PH.D Student from the University of Maryland, College Park. I am conducting a research project to understand what you think or believe about computers and other kinds of technology like cell phones or tablets. I would like to know how you use technology when you are in school and when you are playing with friends.
What Will Happen In The Project?	This project will take place while you are a participant in the summer learning program. If you choose to participate, you will be asked to share your thoughts about fun experiences and learning experiences you have had with computers, mobile phones, laptops, or tablets. In this project, you will be given a digital tablet to create journal reflections and share your thoughts. I will keep the information you share with me private. I will not give your name or any information to anyone that identifies you without your permission. A created name will be given to you for the study.
Will I Experience Any Discomfort Or Risks As A Participant?	I don't think that any big problems will happen to you as a part of this project, however: • It may take some time for you to understand how to use your digital tablet. • You will have to create a password for your digital tablet to keep your information private, in case the tablet is mistakenly misplaced or lost.
Are There Benefits For Being A Part Of This Project?	There are no direct benefits. However, possible benefits may include finding and improving ways to use technology to: • Interact with peers and others, • Learn more about cultures and your environment, • Find new ways to be creative and express yourself, and • Increase knowledge of portable technology use.
Do You Have Any Questions About The Project?	You should know that: • You can ask questions at any time. • You can talk to the researcher, your family or someone else in charge, before you decide if you want to participate. • If you do agree to participate, you can change your mind and withdraw from the study at any time without any penalty. • Your parent/guardian will be asked if it is okay for you to be in this study. Even if they say it's okay, it is still your choice whether or not to take part. • Your choice to stop participation in the research project will not effect your participation in the summer learning program. If you decide to stop taking part in the study, if you have questions,

	concerns, or complaints, or if you need to report an injury related to the research, please contact the researcher: Kenyatta L. Crenshaw 1112 Taliaferro Hall University of Maryland, College Park, Maryland 20742 kcrenscha@umd.edu 202-595-4822	
Do You Have Questions About Your Rights As A Participant?	<i>If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:</i> University of Maryland College Park Institutional Review Board Office 1204 Marie Mount Hall College Park, Maryland, 20742 E-mail: irb@umd.edu Telephone: 301-405-0678 <i>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</i>	
Statement of Consent	Sign this form only if you: • Are under the age of 18 • Have understood what you will be doing for this study, • Have had all your questions answered, • Have talked to your parent(s)/legal guardian about this project, and • Agree to take part in this research.	
Signature and Date	PRINT NAME OF PARTICIPANT	
	PARTICIPANT SIGNATURE	
	DATE	
	Signature of Researcher	
	Date	

Consent Form for Staff/Parents/Volunteer Participants

Project Title	Waltzing with Technology: An Ethnographic Case Study of Marginalized Middle School Youths' Experiences with Information Communication Technology.
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Purpose of the Study	This is a research project being conducted by Kenyatta Crenshaw under the faculty advisement of Dr. Robert Croninger at the University of Maryland, College Park. We are inviting you to participate in this research project because of your affiliation with the youth participants in a summer learning program. The purpose of this research project is to understand the ways in which students' utilize computer based and mobile technologies to make sense of and relate to the environments around them. Specifically, the study will explore how their engagement with computers has helped them to shape their imaginations; to discover their place in the scheme of things; to fashion networks of communication and affiliation; form identities; and otherwise to make use of the education fare presented to them in sites of formal teaching and learning.
Procedures	For this study, it is my desire to consult and interview you regarding your perceptions and experiences involving middle school aged youth (ages 9-12) within the summer learning program. My desire is to have an in-depth understanding about the ways in which middle school youth's perceptions, values, and associations contribute to their use of computers or mobile technologies (e.g., cell phone, ipads or tablets). The interviews will involve conversations that discuss your experiences and insights into the youths' life experiences, as well as, the role of the community program in the participants' learning, pedagogy, and civic participation. An example of a typical interview question is "With the utilization of ICT in the home, center, and/or classroom, are there boundaries that you have established with the student regarding virtual and/or physical space in relation to technology? If so, please describe. In what ways, if any, are they negotiated?" These conversations will always be optional and will generally take approximately no more than an hour each (1-3 times). Each interview will be audio recorded and transcribed. The interviews will take place at the summer learning program site and/or over the phone. Documentary evidence will also inform this study. Documents may include products generated by you in association with the youth that you wish to share, for example, lesson plans, articles, pictures, poems, etc. Any document materials that you would like to submit to the researcher will be converted to digital format and returned to you in the original condition. This information may serve as a record of informal or formal program experience, and may be used for future scholarly and educational purposes. All participants will be given pseudonyms for all recordings. I will not use your name or the community program's name or address on any resulting literature.
Potential Risks and Discomforts	There are no known risks associated with your participation in this research project.

Potential Benefits	The research is not designed to benefit or help participants in any way but to help the researcher understand your experience and role in association with youths' learning and engagement with technology at the summer learning program. We hope that, in the future, other people might benefit from this study through improved understanding of the impact of cultural influences on the use of technology in the education field. We also hope and believe that the study may generate a foundation of knowledge and information that can contribute substantially to the evaluation and enhancement of computer based learning programs supporting underserved populations.
Confidentiality	The identities of all participants will be held in strictest confidence. If we write a report or publish an article, your identity will be protected to the maximum extent possible. Information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law. The individual interviews will be recorded, based on the your discretion. Access to the recordings will be restricted to the researcher. The recordings will be stored on a password protected computer and a secure online database – Dedoose (http://www.dedoose.com/LearnMore/Security.aspx). The recordings will be destroyed five years after the completion of the study. The recordings will be transcribed, and your words may be quoted. If quoted, a pseudonym will be used to ensure that you cannot be identified in any way. Transcriptions of the recorded documents will be kept for a period of ten years in accordance with the University of Maryland requirements.
Right to Withdraw and Questions	Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator: Kenyatta L. Crenshaw 1112 Taliaferro Hall University of Maryland, College Park, Maryland 20742 kcrenscha@umd.edu 202-595-4822
Participant Rights	<i>If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:</i> University of Maryland College Park Institutional Review Board Office

	1204 Marie Mount Hall College Park, Maryland, 20742 E-mail: irb@umd.edu Telephone: 301-405-0678 <i>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</i>	
Statement of Consent	<i>Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You will receive a copy of this signed consent form.</i> <i>If you agree to participate, please sign your name below.</i>	
Signature and Date	NAME OF PARTICIPANT [Please Print]	
	SIGNATURE OF PARTICIPANT	
	DATE	

Handout/Letter to Accompany Parental Consent and Minor Assent Forms (Given at orientation and with recruitment announcement)

1112 Taliaferro Hall
University of Maryland,
College Park, MD 20742

Dear Parent,

My name is Kenyatta Crenshaw and I am a Doctoral Candidate in the College of Education at the University of Maryland, College Park. I am conducting a research project on the ways in which middle school aged youth utilize computer based and mobile technologies to make sense of and relate to the environments around them. I am specifically interested in how their perceptions, values, and associations contribute to their use of computers or mobile technologies (e.g., desktop/laptop computers, cell phone, ipads or tablets) to navigate their learning and social environments.

Attached you will find 1) a consent form for your child's participation in the study, and 2) an assent form for your child to sign if he/she is interested in participating in the study. These forms will provide you with more detailed information about what would be asked of your child if you choose to allow him/her to take part in this research. Please review these documents carefully. Prior to you and your child's signing of the assent form, I would like the opportunity to speak with you and your child to answer any questions you may have and to make sure that you have an understanding of the study. After we speak, please return the documents to me signed and initialed (please initial in the upper left corner of each page of the consent form and sign the last page) in the enclosed envelope.

I look forward to speaking with you. Please feel free to contact me at kcrenscha@umd.edu or on my cell at 202-595-4822.

Thank you so much for your time and consideration! I look forward to learning from your child's experiences!

Sincerely,

Kenyatta Crenshaw
Doctoral Candidate
University of Maryland, College Park
Department of Teaching, Learning, Policy, and Leadership

Parental Consent Form

Project Title	Waltzing with Technology: An Ethnographic Case Study of Marginalized Middle School Youths' Experiences with Information Communication Technology.
Purpose of the Study	This is a research project being conducted by Kenyatta Crenshaw under the faculty advisement of Dr. Robert Croninger at the University of Maryland, College Park. We are inviting your son or daughter to participate in this research project because your son or daughter will be a participant in a summer learning program. The purpose of this research project is to understand the ways in which students' utilize computer based and mobile technologies to make sense of and relate to the environments around them. Specifically, the study will explore how their engagement with computers has helped them to shape their imaginations; to discover their place in the scheme of things; to fashion networks of communication and affiliation; form identities; and otherwise to make use of the education fare presented to them in sites of formal teaching and learning.
Procedures	Your son or daughter will participate in a project that will take place over a period of six weeks while he/she participates in the summer learning program. During that time, the researcher will be collecting data using a variety of instruments and techniques: • a pre and post questionnaire which asks questions like – “what experiences have you had with information communication technology (e.g., desktops, laptops, ipads, tablets, cell phones)”; • weekly 45-60 minute audio recorded focus groups - in which from a peer perspective we will discuss activities and thoughts on using technology and how technology may or may not have helped or supported their weekly social/group learning experiences; • weekly 30-60 minute recorded individual interviews - in which participants will be asked questions like “How does this weeks learning and social experiences overall relate to who you are and what you would like to do? What would your friends think or say about this? What do you think your family members would think or say about this? What would your teacher think or say about this”; • daily observations of all participants on field trips, classroom and social experiences while a participant of the summer learning program; • document analysis of any handouts, instruction/curriculum given at site or field trips, and recordings or reflections that participants decide to share; • and audio/video recordings from the participants digital journal which will be discussed at individual interview. All interviews will take place at the summer learning program site. The researcher will seek the permission of your child to participate using a combination of these data collection instruments and techniques. In regards to mobile technology use of digital media, your son or daughter will be given a digital tablet for use during the study to access the Internet and to create a digital journal to share experiences relative to the study with the researcher. One digital tablet will be assigned to each participant. Your son or daughter will need to bring the tablet to the site each business day for proper use and data collection. If the tablet becomes lost or damaged, I will still try to engage with the youth about their experience through written and/or emailed reflections; as well as attempt to identify other communication technology that the youth may have access to for digital journaling and sharing of audio/video data.

	If your son or daughter happens to record anyone (audibly or visually) on the tablet that is not a participant of the study, I will not use the non-participants information in anyway. All participants will be given pseudonyms for all recordings and the community's program name or address will not be used in any resulting literature.
Potential Risks and Discomforts	Potential risks for participating in this research study are as follows: 1) Initially, your son or daughter might be a little uncomfortable with the initial use of the tablet device; and 2) if your son or daughter records personal information on a tablet that is mistakenly misplaced or lost. To minimize risks, the researcher will ensure that your son or daughter easily uses the tablets during training and password protects their device. This will keep concerns with technical aspects and unintentional sharing of recorded data to a minimum. I will also continuously work with the participants to help them understand the best practices and protocols for appropriate and safe communication when and if using any social media sites on the internet.
Potential Benefits	There are no direct benefits to participants. However, possible benefits may include improved practice in technology integration for learning, and improvement in her/his skills related to the use of portable technologies. We hope that, in the future, other people might benefit from this study through improved understanding of the impact of cultural influences on the use of technology in the education field. We also hope and believe that the study may generate a foundation of knowledge and information that can contribute substantially to the evaluation and enhancement of computer based learning programs supporting underserved populations.
Confidentiality	The students' identities will be held in strictest confidence. If we write a report or publish an article, the identity of your child will be protected to the maximum extent possible. Information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law. The individual interviews and digital journal entries will be recorded. The individual interviews will be audio recorded, and the digital journal entries will be audio or video recorded based on the youth's discretion. Access to the recordings will be restricted to the researcher. The recordings will be stored on a password protected computer and a secure online database – Dedoose (http://www.dedoose.com/LearnMore/Security.aspx). The recordings will be destroyed five years after the completion of the study. The recordings will be transcribed, and the words of your child may be quoted. If quoted, a pseudonym will be used to ensure that your child cannot be identified in any way. Transcriptions of the recorded documents will be kept for a period of ten years in accordance with the University of Maryland requirements. Potential concerns with a breach of confidentiality may occur with your child's participation in focus groups and use of social media sites; whereas, there is no absolute way to guarantee and ensure the confidentiality of personally identifiable information. Involvement in any data collection method by parent or youth is optional.
Right to Withdraw and Questions	Your child's participation is completely voluntary. You or your child may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. Your choice to end participation in the research project

	will not effect your child's participation in the summer learning program. If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator: Kenyatta L. Crenshaw 1112 Taliaferro Hall University of Maryland, College Park, Maryland 20742 kcrensa@umd.edu 202-595-4822	
Participant Rights	<i>If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:</i> University of Maryland College Park Institutional Review Board Office 1204 Marie Mount Hall College Park, Maryland, 20742 E-mail: irb@umd.edu Telephone: 301-405-0678 <i>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</i>	
Statement of Consent	<i>Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You will receive a copy of this signed consent form.</i> <i>If you agree to allow your child to participate, please sign your name below.</i>	
Signature and Date	PRINT NAME OF PARTICIPANT (Name of your child)	
	PRINT YOUR NAME (Parent or legal guardian)	
	PARENT OR LEGAL GUARDIAN SIGNATURE	
	DATE	

Pre/Post Questionnaire
(to be completed prior to/after interview process)

Date:

Participant/Code:

- 1) How old are you?
- 2) What are your interests?
- 3) Why did you choose to be a part of the study?
- 4) What school do you currently attend?
- 5) What schools have you attended?
- 6) What are your thoughts about school?
- 7) How long have you been a member of the youth program?
- 8) Do you have siblings or relatives that are current or past participants of the summer program?
- 9) How did you learn about the summer program?
- 10) What are your thoughts about the summer program?
- 11) What experiences have you had with information communication technology (ICT) (e.g., desktops, laptops, tablets, ipads, cell phones)?
- 12) Do others in your family use these types of technology?
- 13) Do you have access to these types of technology? If so, what do you use it for mostly?
- 14) Prior to summer learning program what did you use ICT for?
- 15) Has your use of ICT changed? If so, in what ways?
- 16) If you could use ICT, for anything in the world right now what would it be? How is this thought different than what you currently use it for?
- 17) What name would you like to use for your pseudonym?

Sample of Interview questions/Digital Journal Prompts

Individual Interview questions with middle aged youth

- 1) Tell me about your first experience with computer/mobile technology.
- 2) What has currently changed since your first experience with ICT?
- 3) Has participation at the summer learning program changed your attitudes and/or habits connected to technology? If so, how?
- 4) What does the summer learning program mean to you?
- 5) How do you ethnically identify yourself and why? What do you know and understand about your community? Who makes up your community?
- 6) What do you think and understand about how people in your community use technology (i.e., adults, peers, educators, etc.)?
- 7) Do you have any fears related to ICT use, if so what are they and why do you think those fears exist?
- 8) Do you access social media sites? If so how often and how do you use it?
- 9) What ways have you imagined using technology?
- 10) Did you use ICT in relation to this weeks topics of interest, if so how?
- 11) Did this weeks' use of ICT increase interest, make topic more challenging or fun?
- 12) How did you feel about what you were learning?
- 13) Do you think there are additional ways that you could you use your tablet this week or next to make your learning more interesting to you?
- 14) How does this weeks learning and social experiences overall relate to who you are and what you would like to do? What would your friends think or say about this? What do you think your family members would think or say about this? What would your teacher think or say about this?
- 15) Have you used ICT for purposes other than the intended use? If so, please describe.

Focus Group Interview Questions

- 1) How did you use technology within your community to learn about the theme for this week?
- 2) What are some ideas for how you could plan to use technology to learn about the theme for this upcoming week?
- 3) As it relates to the theme for this week, what social ways did you use technology within your community?
- 4) As it relates to upcoming things for this week, in what social ways might you use technology?

Interview questions with the parents/staff/volunteers

- 1) What name would you like to use as your pseudonym?
- 2) In what way(s) are you associated with the summer learning program, and for how long?
- 3) What would you say are your primary goals and roles for your programming with the youth?
- 4) I'm interested in understanding how youths' perceptions, values, and associations contribute to their use of computers or mobile technologies, what role do you believe this summer learning program plays in applying pedagogical methods to shape students learning and civic participation? What aspects of their identity and yours play a role in their learning and civic participation? Do you believe that these aspects of their identity relate to how they may use digital media civically in virtual and physical spaces?
- 5) Based on the changing ecology of the surrounding community, what are the most salient issues the youth participants are dealing with? What are the greatest opportunities that the use of technology could afford the youth?
- 6) With the utilization of ICT in the home, center, and/or classroom, are there boundaries that you have established with the student regarding virtual and/or physical space in relation to technology? If so, please describe. In what ways, if any, are they negotiated?

Examples of Digital Journal Prompts

- 1) Complete a short (audio/video/ written) reflection that provides information on who you are, your talents, your family, foods you like to eat, things you like to do etc.,.
- 2) Complete a short reflection that provides information (thoughts/feelings) and descriptors about your community, the community center, the people and buildings that make up the community. For example talk about what's your favorite place and why; what's a place of concern for you and why?
- 3) This week's session discussed _____. Use your device creatively to express your thoughts and feelings related to this week's theme. (This question can be used each week).

Sample Scripts for Recruitment

Recruitment of Youth Participants

“My name is Kenyatta Crenshaw. I am a graduate student in the College of Education at the University of Maryland, College Park and I am seeking participants for my research study. I am conducting a research study to understand how middle school youth may use computers or mobile technologies (e.g., cell phone, ipads or tablets). I would like to know and understand the thoughts, beliefs, and/or values, middle school youth like yourself, have in relation to computer/mobile technology and how you have or would use these technologies to relate to the places of which you learn, socialize and relax each day. I am also greatly interested in the wonderful experiences you will have to use these technologies as a participant of this summer’s youth program. If you choose to become a participant of my research, you will be asked to participate in conversations (both individual and group) about the life experiences (both social and learning) you have had with these types of technology and experiences where this technology has been or could have been fun, helpful, or challenging. These conversations will always be optional and will generally take approximately from 1.5-2 hours each week for the next six weeks while you are a participant of the summer learning program. As part of the individual and group conversations, I might ask you to provide some materials such as reflections and/or drawings to engage with you and learn from your experiences. You will be given a digital tablet to record your reflections that has both audio and video recording capabilities. You may choose to not participate at any time. The name and location of the community program will not be revealed in any of the resulting documents and your name will never be used. If you are interested in participating this research please speak with your parents/guardian and contact me at kcrenscha@umd.edu or at 202-595-4822.”

Recruitment of Staff Volunteers

“My name is Kenyatta Crenshaw. I am a doctoral candidate in the College of Education at the University of Maryland, College Park and I am seeking participants for my research study. I am conducting a research study to understand the ways in which middle school youth’s perceptions, values, and associations contribute to their use of computers or mobile technologies (e.g., cell phone, ipads or tablets). Since you are a part of the summer learning program and are associated with the participants, I would appreciate the opportunity to talk to you. If you choose to become a participant of my research, you will be asked to participate in conversations that explain your experiences and insights into the youths’ experiences as well as the role of the community program in learning, pedagogy, and civic participation. These conversations will always be optional and will generally take approximately no more than an hour each (1-3 times). You may choose to not participate at any time. The name and location of the community program will not be revealed in any of the resulting documents and your name will never be used. If you are interested in participating this research please speak with your parents/guardian and contact me at kcrenscha@umd.edu or at 202-595-4822.”

Appendix B

Links to Examples of Interview Transcripts

Staff (<http://hdl.handle.net/1903/30365>)

Student (<http://hdl.handle.net/1903/30365>)

Parent (<http://hdl.handle.net/1903/30365>)

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