

HOW URBAN YOUTH USE DIGITAL TOOLS
AT COMMUNITY TECHNOLOGY CENTERS
TO SUPPORT THE DEVELOPMENT OF CIVIC ENGAGEMENT PATHWAYS:
A MULTISITE, MULTICASE STUDY

by

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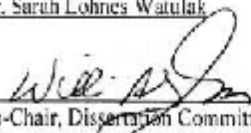
DISSERTATION APPROVAL PAGE

This is to certify that the dissertation prepared by Lisa Twiss, entitled How Urban Youth Use Digital Tools at Community Technology Centers to Support the Development of Civic Engagement Pathways: A Multisite, Multicase Study, has been approved by this committee as satisfactory completion of the requirement for the degree of Doctor of Education in Instructional Technology, in the Department of Educational Technology and Literacy.



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I dedicate this work to my grandfather, Guiseppe Piazza, and my mother-in-law, Toni Crawford.

ABSTRACT

How Urban Youth Use Digital Tools at Community Technology Centers to Support the Development of Civic Engagement Pathways: A Multisite, Multicase Study

Lisa Twiss

This study explored how urban youth used, and did not use, digital tools at two community technology centers (CTCs) to support the development of civic engagement pathways. Research has shown that urban youth lack the same opportunities as their wealthier peers to engage civically (Levinson, 2007). This lack is problematic given the benefits of civic engagement, specifically as it relates to positive youth development and the strengthening of our nation's democracy (Lerner, 2004). CTCs have been shown to be valuable and viable places where young people can develop positively in a variety of ways (Kafai, Peppler, & Chiu, 2007). The purpose of this study was to better understand how young people could use the technology made accessible to them through CTCs to acquire particular skills and behaviors that could support their engagement in civic activities. This study employed a qualitative, multisite, multicase methodology that used Bers's (2012) Positive Technological Development framework to describe how young people made use of their digital tools. The cross-case analysis illuminated the importance of the participants' content creations. Content creation supported the following pathways to civic engagement: the development of civic skills, namely civic knowledge, collaboration, and communication; community building; and the emergence of civic identities. This research provides a perspective not yet fully explored in the literature about the intersection between CTCs, urban youth, and civic engagement. The findings reveal that CTCs served as vital spaces for the development of civic engagement pathways for the urban youth in this study, suggesting that CTCs may play a role in addressing the civic engagement gap.

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CHAPTER I

INTRODUCTION AND CONTEXT

I don't want to sound cliché, but people say children are the future. If children aren't involved, then who's going to be involved? If we're growing up to not worry about our community or our city or anything, then by the time we get older and all the old civic leaders are dying out or are old, who's really going to do it? If we grow up with not a care about it, we're not going to care about it (“Aliya,” Interview, 2/12/16).

In April 2015, Baltimore, Maryland, became the focus of worldwide attention that sparked dialogue about race, poverty, and the lives of urban youth (Connolly, 2015; Marshall, Mmari, & Blum, 2015). The city’s “unrest,” as it was called, was documented through the media’s looping images of looters, fire, and 5,000 National Guard troops that overtook the streets. To some, like the editors of *Time Magazine*, these images were similar to those that came out of Baltimore following the 1968 assassination of Dr. Martin Luther King, Jr.; the magazine used a 1968 photo on the cover of its May 11, 2015, issue.

This decision by the editors of *Time Magazine* illuminates how, between 1968 and 2015, issues surrounding race still remain. Gaps between Whites and Blacks in employment, higher education, health rates, and economics continue to put those from low-income neighborhoods at a disadvantage (Irwin, Miller, & Sanger-Katz, 2014); most notably, the youth in these neighborhoods. In a Johns Hopkins study involving youth from the poorest neighborhoods in Baltimore; Johannesburg, South Africa; New Delhi, India; Ibadan, Nigeria; and Shanghai, China, Baltimore’s youth reported some of the

worst conditions in which to be raised (e.g., their perception of their neighborhood, their physical environment and their social environment) (Mmari et al., 2014). Mmari, the lead researcher, told Vocativ:

When you think about poor adolescents, you may instantly think of a child in Africa because there are poorer countries there, but it's not really the country that is important ... right here in Baltimore, we have kids who are much worse off than those in African cities (Kulze, 2014, para. 11).

These disadvantages are evident in the education system, incarceration rates, and food deserts in which many poor families live. Research contends these conditions have propelled the young people who live in these low-income neighborhoods (i.e., urban youth) to lag far behind their wealthier peers when it comes to opportunities to develop positively and to become civically engaged (Lerner, 2004). In other words, the majority of urban youth in Baltimore fail to experience “exemplary health or optimal development—*thriving*, if you will” (Lerner, 2004, p. xiv).

Like so many other cities around the world, Baltimore has yet to show its earnest support for effective positive youth development efforts. One example of this is the city's 2012 closure of 22 community recreation centers, which provided the young people of Baltimore safe and productive places to go. These closings terminated various programs, many of which involved city police officers and community leaders. In the absence of these centers, too many youth have been left hopeless, and some believe this hopelessness was a direct cause of the city's 2015 unrest (Reutter, 2015).

Shows like *The Wire* and *Homicide: Life on the Streets* present accounts of Baltimore's young people and the challenges they face. Although fictional, their

storylines are supported by research. According to the Centers for Disease Control and Prevention (2015), for example, Baltimore ranks among the top ten in the nation for STDs, and the homicide rate exceeded 300 during the years 2015 and 2016 (Rector, 2017). Additionally, a Harvard study recently found that for every extra year spent living in the poorest neighborhoods of Baltimore, one's salary was reduced by nearly 28% compared to the national average (Chetty & Hendren, 2015).

Civic engagement has been shown to support positive youth development and counter these negative effects of poverty. In other words, civic engagement supports young people's ability to thrive (Levine & Higgins-D'Alessandro, 2010; Youniss & Levine, 2009). Researchers such as London, Pastor, Servon, Rosner, & Wallace (2010) have found that youth can develop positively (i.e., thrive) through social and technical skills developed at community technology centers (CTCs). As such, this study explored the intersection between urban youth, civic engagement, and CTCs, focusing specifically on how young people could use digital tools at CTCs to develop civic engagement pathways. This chapter provides an overview and rationale for this work through the problem statement, the purpose of this study, the research question, the study's significance, my position as a researcher, and the theoretical framework employed: the Positive Technological Development framework (Bers, 2012). Chapter I concludes with the study's limitations and a chapter summary.

Problem Statement

An "abundance of evidence" points to a lack of opportunities for young people from low-income neighborhoods to "develop the skills and dispositions necessary to participate in civic life" (Hart & Kirshner, 2009, p. 107). As a result, these young people

are at greatest risk to not fully participate in their communities through civic engagement (Goodman, 2003; Gullan, Power, & Leff, 2013; Hick, 2006; London et al., 2010; Pinkett, 2003). The literature refers to this risk in a variety of ways including the *civic achievement gap* (Levinson, 2007), the *civic engagement gap* (Levinson, 2010), the *civic empowerment gap* (Levinson, 2010), the *civic opportunity gap* (Hart & Kirshner, 2009; Kahne & Middaugh, 2012; Levine, 2011), and the *participation gap* (Jenkins, Purushotma, Clinton, Weigel, & Robinson, 2009). Across each of these versions, the same underlying principle exists: Urban youth face inequities when it comes to opportunities for engagement in civic life. This is important because civic engagement has been linked to many positive outcomes. For example, young people can become more knowledgeable about their communities and how to access certain resources (Atkins & Hart, 2003) such as information about employment, skills training, financial aid services, and housing services, among others. Additionally, research has shown that youth civic engagement raises senses of competencies and self-esteem (Balsano, 2005) and establishes prosocial behaviors that last into adulthood (Youniss & Yates, 1997). These outcomes, among others, will be discussed in greater detail in Chapter II.

Purpose of the Study

This study's purpose was to explore how urban youth could use digital tools to support the development of civic engagement pathways through their participation at two CTCs. Many researchers, such as Lerner (2004), Putnam (2000), Delli Carpini (2000), Youniss and Yates (1997), and Levine (2011), believe that civic engagement can mitigate some of the detriments of living in poverty and can “buffer the deleterious effects of stress and crime” so often found in high-poverty areas (Hart & Kirshner, 2008, p. 103),

opening up the opportunity for youth to positively participate in the community and civic life around them.

As previously noted, CTCs are places that, for the past three decades, have been recognized by researchers as strong resources for urban youth (Barkhuus & Lecusay, 2012; Clark, 2003; Cole, 2006; Hick, 2006; London et al., 2010; Pinkett, 2003). Building on research in these areas of CTCs and civic engagement, I sought to specifically understand how urban youth used digital tools at CTCs to develop civic engagement pathways.

Overview of Urban Youth and Civic Engagement

To better understand the purpose of this study, it is important to recognize the current landscape of civic engagement in the lives of urban youth. This will be discussed much more in Chapter II; however, these points are worth making here so that the context of this study is clear. To start, urban youth have reportedly lower levels of civic engagement compared to their wealthier peers. One reason for this, as stated above, is because of the lack of opportunities to engage (Hart & Kirshner, 2009; Kahne & Middaugh, 2012). Urban youth were found to be 1.5 to 2 times less likely to engage in civic learning and/or service learning discussions compared to their wealthier peers, and when it came to technology use for the purpose of civic engagement, they were less likely to engage in higher level technology projects that aid in civic participation (Jackson et al., 2008; Ritzhaupt, Liu, Dawson, & Barron, 2013). Therefore, if opportunities to discuss civic issues in school or to participate in local civic events, for example, were offered to urban youth to the same extent as they are offered to more affluent young people, the argument is that urban youth would demonstrate equal involvement in civic engagement activities.

The literature on the civic engagement gap also suggests that urban youth feel “alienated” from their communities and generally have a lower sense of “political efficacy” (Bandura, 1997; Voight & Torney-Purta, 2013), thus reducing their likelihood to participate. Without a sense of ownership, these youth have little motivation to care about and/or take action with civic duties. Social trust (Putnam, 2007) is a key element in civic engagement, and many urban youth have not been afforded opportunities to build that trust in meaningful ways.

A different argument altogether in the literature is that urban youth are, in fact, civically engaged, but the tools used to measure their engagement do not recognize their most common civic engagement activities (Bell, 2005; Voight & Torney-Purta, 2013). For example, researchers have found urban youth to be more active in civic activities through their churches and what Sanchez-Jankowski (2002) call “civic subcultures.” Civic subcultures refer to groups of individuals (e.g., African Americans, Mexican Americans, American Indians) who have unique historical experiences and engage civically in their own specific ways. However, these activities are not always classified as civic engagement. In other words, compared to more traditional participation in school-based student government activities (which are dominated by more affluent white students), particular involvement in religious or cultural organizations is often overlooked.

This challenge to capture civic engagement practices among youth, poor and rich alike, also exists in the virtual world. Some researchers agree that after the 2008 presidential election, young people were more civically engaged than ever before, most notably through social media (Kwon, Wilcox, & Shah, 2014). Yet, despite the potential

advantages of technology, the literature suggests digital divides continue to keep poorer youth at bay (Jenkins et. al., 2009). Even if access to a computer or mobile device is possible, the speed at which information can be downloaded, as well as the know-how needed to meaningfully use the technology, still favors wealthier youth. In many communities, CTCs—face-to-face settings where technology tools are accessible, participation is voluntary, and mentors are available for training—provide urban youth access to technology tools and skills, and potentially, opportunities for civic engagement.

The Role of Community Technology Centers

As mentioned above, technological tools have been shown to be potential pathways for civic engagement. In particular, the use of social media through mobile devices has been highlighted as a popular way to engage in political conversations (Smith, 2014). This is good news for African American and Hispanic youth who report having equal access to smartphones compared to their white peers (File, 2013). However, a gap still exists between those who do and do not have access to other tools, such as desktop and laptop computers (Lenhart et al., 2008). This gap, known as the digital divide, “has shifted over the years in response to new technologies and the reduction of prior inequalities” (Shank & Cotten, 2013). CTCs have played an important role in the reduction of this inequality by providing access to desktop and laptop computers, specialized technology equipment, and training. For this reason, CTCs were purposefully selected as the setting of this study.

CTCs have offered young people a variety of technology-focused opportunities for more than 30 years. In a review of the 2,000-plus technology centers in 2010, London et al. noted opportunities ranging from basic computer operations to “practical skills” like

public speaking (London et al., 2010, p. 204). Other community technology programs have offered game designing (Buckingham, Sefton-Green, & Willett, 2003), physics stop-motion software training (Barkhuus & Lecusay, 2012), 3-D printing and robotics (Zaleski, 2014), and filmmaking (Rosales, 2013). CTCs such as The Fifth Dimension, The Computer Clubhouse and Youth Radio have bridged digital divides by providing access as well as instruction, and research has suggested they are key places for positive learning experiences (London et al, 2010).

The literature about CTCs, which will be detailed more in Chapter II, provides reason to believe CTCs are fertile grounds for the betterment of young people, particularly those young people who come from low-income neighborhoods and who have limited access to technology. This group has benefitted the most from participation in CTCs. For example, Camfield Estates, a CTC in partnership with Massachusetts Institute of Technology, provides young people “a greater appreciation of their strengths, and ... [gave] the community greater appreciation of its most basic assets, the skills and abilities of its residents” (Pinkett, 2003, p. 377).

As much as is known about the role of CTCs in other areas of positive youth development, little research exists about how technology use at CTCs might specifically provide pathways to civic engagement for urban youth. In light of the current state of urban youth, and recognizing that civic engagement has been shown as a contributing factor to young people’s ability to thrive, my overarching interest in this research was to examine how CTCs, and young people’s uses of digital tools there, might play a role in providing urban youth pathways for civic engagement.

Research Question

In response to the lack of the literature focused specifically on urban youth, civic engagement, and CTCs, this qualitative, multisite, multicase study aimed to explore the following research question: How can urban youth use digital tools at two CTCs to support the development of civic engagement pathways?

Significance of This Study

This study addresses gaps in the literature about the role CTCs can play in the development of civic engagement pathways for urban youth. To date, most of the literature about CTCs has focused on the specific technological and social skills acquired by participants (Barkhuus & Lecusay, 2012; Kafai, Peppler, & Chiu, 2007; Willett, 2007). However, only one study by London et al. (2010) included a specific focus on digital tool use at CTCs for civic engagement. According to London et al. (2010), “virtually none of the existing literature considers the broader impact of technology access on positive youth development outcomes such as civic engagement” (p. 200). This study, with its focus on civic engagement through CTC technology use, provided a unique perspective on a needed area: the promotion of civic engagement for urban youth through the use of technology.

This area needs greater attention for the reasons discussed above. In the largest context, civic engagement is important because it is seen as a necessity for liberty and freedom (Delli Carpini, 2000; Flanagan, Levine, & Settersten, 2007; Hart & Kirshner, 2009; Lakin & Mahoney, 2006; Lerner, 2004; Levine, 2011; Youniss & Levine, 2009). Without the opportunity and knowledge to participate in civic activities, certain groups in this nation will become powerless as their voices fade from national dialogue. These

disparities have already created “a gap that threatens the health of democracy” (Zaff, Youniss, & Gibson, 2009, p. 6), and a systemic inequality of representation in politics and policy (Delli Carpini, 2000; Foster-Bey, 2008). Lerner (2004) wrote that “power and prerogative [would reside] in the already-powerful” if more efforts were not made to create pathways to civic engagement at-risk groups (p. 17). The findings of this study contribute to the broader discourse about the nation’s future as a democratic society.

In a narrower context, this study contributes to the literature about CTCs and suggests that participants can benefit in ways beyond the skills development and social development often written about in the CTC context. The findings of this dissertation study showed that CTCs can also be places of civic engagement, most notably through the acquisition of civic skills, civic identities, and community building. Through this study, CTCs can be better understood as places that can encourage and support urban youth to use digital tools to address civic issues related to their lives and their communities, a concept that has yet to be fully developed in the current CTC or civic engagement literature. Additional recommendations for research, practice, and policy will be discussed in Chapter VI.

Researcher Position Statement

“If all teens are thought of as assets in the making, rather than problems waiting to happen, then not only our own families but also society as a whole could be transformed” (Lerner, 2007, p. 213).

Lerner’s statement, above, captures my position as the researcher of this study. I believe young people have tremendous potential, and in the absence of opportunities for them to put forth this potential, both the individual and the community will fail to benefit.

I have developed this position over my 20-year career as a teacher, most notably during my tenure as a public school teacher in urban schools. Below, I elaborate on the development of this position through my specific experiences with students.

Inside the classroom, I saw firsthand how well students responded to opportunities to meet teachers in one-to-one settings; their interests were piqued and their motivation increased when they were given individualized attention. Additionally, I saw how students' use of school computers to type papers (something many of them could not do at home) increased the sophistication of their writing. Finally, I saw how differentiating instruction (e.g., offering opportunities for oral reports vs. written reports) allowed students to demonstrate their knowledge in ways that increased the academic achievement for the entire class. In other words, when opportunities were presented to the urban students I taught, they were grateful for them and used them in ways that benefitted everyone.

Just as I provided opportunities inside the classroom, I did the same beyond the classroom. As a result, I was afforded multiple chances to see firsthand how invaluable these experiences became for my students. For example, as an Outward Bound liaison, I escorted students on weeklong sailing and hiking trips. Most of the students had never spent more than two days away from their homes, nor had they ever seen stars or heard silence in the way they did through these nature excursions. One student participant graduated high school and went on to earn a doctorate from Harvard University; he currently works as an administrator in a New York City public school. Years later, he told me how powerful that trip was for him in that it opened his eyes to a world beyond the only one he knew. Additionally, as the girls' varsity soccer coach, I led a group of

more than 20 players, mostly from low-income neighborhoods, to England for an international soccer camp. The majority of students had never been on an airplane before, and like those in the Outward Bound program, many of them claimed the opportunity to travel was life-changing.

Each of these experiences exemplifies my commitment to the belief that young people yearn for opportunities to succeed and, when afforded those opportunities, they can contribute in positive and meaningful ways. I position myself as a researcher and member of society who believes it is in everyone's best interest to be proactive with those youth who need the most support. We should no longer subscribe to the Deficit Model (Lerner, 2004) to understand our youth. In this model, young people are evaluated based on the bad behaviors they do not demonstrate (e.g., drug use, criminal activity, teen pregnancy). Instead, it is my position that we should consider youth as assets, and do what is needed to help them thrive and positively develop.

A second perspective informs my researcher's position: Technology can play a positive role in the lives of young people. As a teacher of both high school and college students, I have found greater motivation, creativity, and engagement among my students when technology is integrated into instruction. Within my first two years as a full-time teacher, I entered a master's program in educational technology because I recognized increased motivation among my pregnant teenage students when they were encouraged to use the computers. Their interest in technology prompted my own motivation to learn best practices related to digital tools. I earned my master's degree in 1999, and I have integrated technology into the lives of young people ever since. In the case of this

research, I held closely this belief that technology can play an important role in the positive development of young people.

Theoretical Framework:

Bers's Positive Technological Development Framework

This study employed the Positive Technological Development (PTD) framework as a lens for analysis. The framework has been shown to be aligned with the digital literacy movements and to provide additional psychosocial, civic, and ethical components (Bers, 2012, p. 9). More broadly, the focus of this framework is on the positive ways children use technology to better their own lives and the world around them. It is comprised of three components: individual assets, technology-mediated behaviors or activities, and applied practice (Bers, 2012). The individual assets are framed by Lerner et al.'s (2005) six "C's," including competence, confidence, character, caring, connection, and contribution; these make up the Positive Youth Development Framework (PYD). The technology-mediated behaviors build on these assets and specifically consider technology's role in their development; these behaviors include content creation, creativity, choices of conduct, communication, collaboration, and community building. The third component of this framework is applied practice, which refers to the specific way in which the technology is used, including the tool itself and the context of its use.

This study focused specifically on the participants' technology-mediated behaviors. These behaviors will be detailed much more in Chapters IV and V, where they are employed as a way to help explain the participants' specific uses of technology and how these uses emerged as themes across the cases. Table 1 offers Bers's (2012) definitions of

these technology-mediated behaviors and provides their links to the Positive Youth Development (PYD) assets (Lerner et al., 2005).

Table 1

Definitions of Technology-Mediated Behaviors from the Positive Technological Development framework and their links to Positive Youth Development assets

Technology-mediated behavior	Definition ^a	Positive Youth Development assets ^b
Content Creation	“Opportunity to engage users in computer programming or computer applications that engage them in working with text, video, audio, graphics, and animations. ... Children develop technology fluency Strong relationship between content creation and competence” (p. 11)	Competence
Communication	“Process of interchanging thoughts, opinions, or information by using technologies” (p. 12)	Connection
Collaboration	“Opportunity to work with others and to willingly cooperate a shared task” (p. 12)	Caring
Community Building	“Active stance toward using technology to enhance the community and the quality of relationships among the people of that community” (p. 12)	Contribution
Creativity	“Ability to transcend traditional ideas, rules, patterns, relationships, or interpretations to create and imagine original new ideas” (p. 12)	Confidence
Choices of Conduct	“Opportunity of making choices about our behaviors, explore ‘what if’ situations, take action in the digital world, and experience its consequences” (p. 12)	Character

^aAll definitions adapted from Bers, 2012. ^bAssets from Lerner et al., 2005.

In addition to relying on PYD, Bers also looked to Seymour Papert’s constructivist approach to support the PTD framework. Bers explained that constructionism “informs PTD by bringing to the foreground the C’s of content creation and creativity and their

strong relationship to competence and confidence” (Bers, 2012, p. 15). Given the nature of this study and its connections to youth development and young people’s constructions with digital tools, (i.e., the products they made using technology at the CTC), the PTD framework provided a meaningful and appropriate lens. Other researchers, too, have found this framework beneficial to understanding young people’s uses of technology (Cunningham et al., 2016). According to the Scopus Database in Towson University’s Cook Library, for example, Bers’s work has been referenced more than 169 times, suggesting the PTD framework has been vetted.

One example of the PTD framework’s application in research is in a case study about the experiences of college freshmen in the Active Citizenship through Technology program at Tufts University. As part of this program, students were asked to “design” and “inhabit” an online community within Zora, a virtual world (Bers, 2012). In one particular activity, participants were asked to create a dorm room, including decorating through posters and sports team regalia. These students gained confidence “in their creative potential” (Bers, 2012, p. 168), and in total, created 4,726 virtual objects. The PTD framework, here, allowed researchers to take note of positive outcomes that could promote civic engagement, including community building and communication (Bers, 2012). Other research with the PTD framework has focused on young people’s uses of robotics in the classroom, the use of Scratch games, and how participation in online virtual worlds can support pediatric patients with renal disease.

In summary, Bers’s PTD framework provided an appropriate lens for understanding the participants’ individual experiences with their technologies and the ways in which

these experiences supported, and at times did not support, participants' civic engagement pathways.

Definition of Terms

Civic engagement: inclination to act, and/or the action itself, in response to relevant and meaningful civic issues (Chung & Probert, 2011; Lerner, 2004; Levine, 2011; Youniss et al., 2002)

Community technology center (CTC): a physical building that provides access to digital tools and offers related training to, primarily, people who live in the local community

Inkscape: an online tool used by Kingston participants to practice their first design: a cloud that had "iCloud" written on it (<https://inkscape.org/en/>)

Makey Makey: a circuit kit that allowed users to turn any object into a keyboard or controller through the use of metal clips and mini circuit boards (<http://www.makeymakey.com/>)

Pathway: the route to or access to ("Pathway," 2017)

Positive: having a good effect; marked by optimism ("Positive," 2017)

Positive Youth Development: theory that focuses on youth, in particular at-risk youth, through consideration of their strengths and assets including competence, confidence, character, caring, connection, and contribution (Lerner, 2004)

Scratch: an online tool that allowed users to code and create games and videos (<https://scratch.mit.edu/>)

Tackk: an online tool where users could communicate and share items they created (<https://tackk.com/>)

Tinkercad: an online tool used to create 3-D designs (<https://www.tinkercad.com/>)

Urban youth: African Americans under the age of 20 who live in lower-income city neighborhoods

Limitations and Delimitations

Like all qualitative research, this study is not meant to be generalized beyond the seven cases researched. However, the triangulation of multiple sources of data collected through observations, interviews, and artifacts, and the rich descriptions that emerged out of this data, suggest the findings here may be useful for other like-CTC settings (Marshall & Rossman, 2011). This research focused on how seven young people used technology at two different CTCs for the purpose of exploring how these uses could support the development of civic engagement pathways. As such, it did not address the efficacy of the CTCs; their programs, instructors, or student achievement outside of the CTC; or their uses of technology outside of the CTC.

The research began in February 2015 and was completed in January 2016. I purposefully selected participants using a consent form that provided the information needed for entry into the study: participant's address must have been within the city limits and the participant and/or a parent or guardian must have granted permission. Information gathered about the participants' involvement in the CTC and the ways in which they used (and did not use) digital tools to support their development of civic engagement pathways provided a meaningful overview of young people, their thoughts and practices about civic engagement, and the role of technology in civic engagement. However, these cases cannot speak on behalf of all urban youth, CTC participation, and/or the uses of digital tools for the development of civic engagement pathways.

Chapter I Summary

This chapter focused on the lack of opportunities that currently put urban youth in a likely position to “fail to reach their potential as civic actors” (Hart & Kirshner, 2009, p. 109). At the same time, urban youth are at a disadvantage when it comes to meaningful technology use that can support the development of civic engagement. In addition, CTCs have been shown to play an effective role in the acquisition of technological and social skills, among other benefits. Yet, to date, no research has focused specifically on the role of young people’s technology use in CTCs to specifically develop civic engagement pathways. Therefore, I selected CTCs as the settings for this study. More information about the literature in these three areas (civic engagement, urban youth, and CTCs) is provided in Chapter II (Literature Review). Following the Literature Review, I describe the multicase, multisite research design employed in this study (Chapter III), the individual case analyses for the seven participants (Chapter IV), the cross-case analysis of emerging themes (Chapter V), and the recommendations for future policy, research, and practice (Chapter IV).

CHAPTER II

LITERATURE REVIEW

Introduction

Independently, youth civic engagement and CTCs are well-established areas of research. For example, ample literature exists to show how youth civic engagement is an important component of this nation's democracy, how it benefits young people in a variety of ways, and how opportunities for civic engagement are not always equitable - i.e., "the civic engagement gap" (Levinson, 2007). These aspects of civic engagement, as well as the historical context and the definitional issues around the term, will be detailed in this chapter.

Also included in this chapter is research around the role of community technology centers. For decades, CTCs have served low-income communities by bridging digital divides and providing young people a variety of opportunities (e.g. mentorship, hands-on experiences) for positive development. Despite technology's role in helping to mitigate the civic engagement gap, researchers argue that technology, alone, is not the answer to ... (Kahne & Middaugh, 2012).. For this reason, CTCs could be valuable and viable places for young people to develop civic engagement pathways. However, very little is known about how, exactly, young people's uses of digital tools at CTCs could support these pathways.

At the time this review was written, only one study specifically acknowledged CTCs as places where young people could develop positively specifically through civic engagement (London et al., 2010). Their findings were focused more broadly on positive youth development, not just civic engagement. Still that work provided valuable insight

and served as a reminder that much more needs to be known about these two areas (i.e. CTCs and civic engagement). London et al. described the paucity of literature in this area of CTCs and civic engagement in the following manner: “Virtually none of the existing literature considers the broader impact of technology access on positive youth development outcomes, such as youth voice, civic engagement, and social capital” (London et al., 2010, p. 42). The study presented in this dissertation addresses this need in order to better understand how young people can use technology at CTCs to development civic engagement pathways. This type of engagement is an example of a meaningful way to support young people’s positive development, which in turn supports this nation’s democracy.

Search Methodology

The methodology employed for this literature review relied on a Boolean Search of “community technology centers” AND “civic engagement” to see what relationships between the two existed in the current literature. This first search, using both terms in quotation marks, yielded only one result through the following databases in Towson University’s Cook Library: Academic Search Premier, Communication and Mass Media Complete, Education Research Complete, ERIC, Military and Government Collection, Psychology and Behavioral Sciences Collection, and Library Information Science and Technology Abstracts. The next step was to remove the quotation marks around the search terms; this returned four results. So few returns suggested that CTCs and civic engagement, specifically, have not yet been directly researched or written about together with that language.

Therefore, to cast a wider net related to both areas, I expanded search terms to include techn* and youth engagement. This search yielded 145 results. I then placed limits to retrieve peer-reviewed and current (<10 years) literature, which narrowed the list to 86 available readings. Out of these results, I gave preference (at least initially) to face-to-face practices over online civic engagement practices. Also, I gave more attention to research focused on urban youth and what is known about their civic engagement. Finally, with the exception of one reference from Canada and one from Great Britain, the literature selected for this review focused on young people from America.

Civic Engagement

Historical Context

Eleanor Roosevelt stressed the importance of youth civic engagement when she said,

Our children should learn the general framework of their government ... where it touches their daily lives and where their influence is exerted on the government. It must not be a distant thing, someone else's business, but they must see how every cog in the wheel of a democracy is important and bears its share of responsibility for the smooth running of the entire machine (cited by Boyle & Burns, 2012, p. 179).

Roosevelt provided an early indication of what has now become a widely popular and studied area: the civic engagement of youth. Yet it was not until decades later, at the end of the Cold War, that the general public became more concerned with youth engagement in civic affairs (Youniss et al., 2002; Lerner, 2004). This concern arose out of the uncertain and tense relationship between the United States and the then-U.S.S.R., as well as the globalization that increased in 1989 and in the subsequent years (Youniss et al.,

2002). Still, little research was conducted in the area of youth civic engagement until almost a decade after the Cold War.

Around 2000, researchers began to pay attention to the ways in which youth became more thoughtful and active in their communities' issues (Balsano, 2005; Bennett, Freelon, & Wells, 2010; Chung & Probert, 2011; Lerner, 2004; Levine, 2011; Middaugh & Kahne, 2013; Youniss et al., 2002.) Along with these researchers, Congress increased its focus on young people and their entry points for civic engagement. The Younger American Act was introduced 2001 to help build on young people's potential (Youniss & Levine, 2009). However, this bill never left the committee "because its sponsors were hard pressed to explain to their colleagues how strengthening young people's capacities would lead to a reduction in their problems" (Youniss & Levine, 2009, p. 13). Since then, volumes of literature have focused on how civic engagement positively impacts young people. For example, the *Handbook of Research on the Development of Citizenship: A Field Comes of Age* was published in 2010, containing 706 pages and 24 chapters written by 53 authors (Levine & Higgins-D'Alessandro, 2010) that highlight researchers' growing interest in the topic. In 2012, the U.S. Department of Education established youth civic engagement as priority in order to "strengthen the civic capacities of the next generation of Americans" (Voight & Torney-Purta, 2013, p. 198).

The 2008 presidential election drew a great deal of attention to the ways in which young people's civic engagement soared. According to the 2011 Report from The Center for Information Research on Civic Learning and Engagement (CIRCLE), that election "mobilized millions of young people to vote ... and three of the six clusters [i.e., their breakdown of demographics] of that year's data reported voter turnout rates to at or close

to 100%” (CIRCLE, 2011, p. 6). CIRCLE considered the following activities, in addition to voting, to be examples of civic engagement: donating to charities, discussing politics, volunteering, and using the Internet as a means of communication about political and social issues.

Today, much of the youth civic engagement research builds on the role of the Internet and social media (Bennett et al., 2010; Hamel, 2011; Jenkins et al., 2009; Kahne & Middaugh, 2012; Kwon, Wilcox, & Shah, 2014; Wells, 2014). In the book *Civic Life Online*, multiple authors explored the ways in which young people interact with digital tools in the contexts of social, cultural, and political topics (Bers, 2008; Levine, 2008; Rheingold, 2008). These virtual interactions further contribute to the definitional issues surrounding civic engagement. In other words, does a “Like” constitute civic engagement? What about a tweet or a social commentary note on a blog? Indeed, there is a lack of consensus in the literature around the definition of civic engagement and how it should be best understood and applied. These definitional issues are worth noting as future research, policies, and practices are developed around youth civic engagement initiatives.

Definitional Issues

In both academic literature and the larger Internet, the term civic engagement is considered through a variety of perspectives. For example, The American Psychological Association (2017) defined civic engagement as the “individual and collective actions designed to identify and address issues of public concern. It can include efforts to directly address an issue, work with others in a community to solve a problem or interact with the institutions of representative democracy” (para. 2). Ehrlich (2000) defined it as “working

to make a difference in the civic life of our communities and developing the combination of knowledge, skills, values and motivation to make that difference ... through both political and non-political processes” (p. 6). Washington State University’s Center for Civic Engagement’s website defined civic engagement as a “philosophy, a process, and a state of being relative to one’s place in community and society. It encompasses the lifelong efforts of individuals and communities to make positive change within society” (para. 1). Others in the field see civic engagement as “the feelings of responsibility toward the common good, the actions aimed at solving community issues and improving the well-being of its members and the competencies required to participate in civic life” (e.g., Lenzi, Vieno, Pastore, & Santinello, 2013, p. 45).

In spite of the varied definitions and perceptions of civic engagement, some generalities can be made across the literature. Perhaps the most important one is this: particular components, some of which encompass the factors discussed above (e.g., self-efficacy and social connectedness) are needed for young people to effectively participate in civic life. These qualities include civic knowledge, civic attitudes, civic skills, and civic experiences (Balsano, 2005; Flanagan, Levine, & Settersten, 2007; Youniss & Levine, 2009). Although the distinction between these qualities is not always clear, generally speaking, civic knowledge refers to information and experiences related to civic work (Balsano, 2005). Civic attitudes, according to Putnam (2007), include such elements as trust, tolerance, and fair-mindedness. Communication is a primary skill related to civic engagement (Ball, Procopio, Goering, Dong, & Bodary, 2016; Comber, 2005), and finally, civic experiences are the more explicit civic actions one takes. In the absence of these components, some researchers believe civic engagement is unlikely

among young people, in particular urban youth.

These differences in how civic engagement is defined suggest variations in the ways young people are viewed as participants in civic life. Furthermore, these differences shed light on the need to understand how young people themselves define civic engagement as it may provide insight into what motivates young people or what young people feel is important. For example, youth civic engagement has been associated with voting and political activism, community service, volunteer work, as well as the discussion of current events and government-related information (Youniss & Yates, 1997). Checkoway and Aldana (2013) found through their own study that young people's civic engagement was related to "grassroots organizing, citizen participation, intergroup dialogue and sociopolitical development" (pp. 1894-1899). Voight and Torney-Purta (2013) sought to better understand these definitional issues around youth civic engagement through a study of approximately 4,000 students from lower-income Tennessee middle schools. Their work, which resulted in a typology of civic engagement for middle school urban youth, was predicated on previous civic engagement literature that suggested young people's engagement should be considered through behavioral and attitudinal components (Flanagan & Faison, 2001; Levine, 2007). The researchers used school records and self-reporting surveys to capture civic behaviors and attitudes, and they found that within this particular sample of young people existed distinct groups of civic engagers (and non-engagers). Voight and Torney-Purta's (2013) study suggests youth (as civic engagers) could be labeled as civic moderates, social justice sympathizers, or social justice actors (p. 202).

The literature reviewed here focused on definitions provided by the researchers.

While this is valuable to understand the range of definitions, it is also problematic since young people's definitions are nearly absent from the literature on civic engagement. In other words, to fairly assess the ways in which urban youth are engaged, and to develop meaningful pathways for youth civic engagement, the literature should better reflect young people's own definitions of civic engagement and their understandings of what it means to be civically engaged. The present study takes into consideration the participant's understandings of civic engagement and how this does (and does not) play a role in their civic identities.

In the Digital Age

Civic engagement is currently being defined and explained by researchers through young people's uses of online tools. Referred to as digital natives, today's young people have been raised in a world where technology is all around them. Therefore, researchers have begun to take a closer look at what civic engagement means to young people through their uses of digital tools (Bennett et al., 2010; Wells, 2014). One example of this is "participatory politics" which refers to virtual exchanges that are "interactive, peer-based, and not guided by traditional institutions like political parties or newspaper editors" (Kahne & Middaugh, 2012, p. 52). Similarly, Jenkins et al. (2009) call the online environment a "participatory culture" that has "relatively low barriers to artistic expression and civic engagement ... strong support for creating and sharing ... informal mentorship" (p. xi). Within these online spaces and media spaces, researchers have found young people's civic engagement takes place through the following: voice (i.e., using media to share their messages) (Levine, 2011); affiliations (i.e., memberships in formal and informal groups whereby interests are shared) (Jenkins et al., 2009); interactive civic

messaging (i.e., the use of the Internet and mobile devices to communicate about civic issues) (Kwon, Wilcox, & Shah, 2014); and even through watching political comedy (i.e., watching shows like *The Daily Show* and *The Colbert Report* to learn about civic issues (cited in Bennett et al., 2010)). In each of these ways, young people have begun to exemplify civic engagement in ways not possible before.

Still, little is understood about the types of skills that may or may not develop as a result of digital engagement. For example, Wells (2014) found that while young people have access to information online, much of it is not youth-friendly and therefore may not afford the meaningful engagement some believe online environments offer. Additionally, some have found that these online tools actually encourage young people from lower-income homes, in particular, to “waste time” more often compared to their wealthier peers (Richtel, 2012). Research has found that children of parents who did not have college degrees were found to use technology more hours a week and for more entertainment purposes with less supervision (Richtel, 2012). These differences in how low-income youth spend their time online compared to higher-income youth is now recognized as another wave of the digital divide (Foster-Bey, 2008; Kahne & Middaugh, 2009; Lankshear & Knobel, 2008), and thus exacerbates what Levinson (2007) coined the “civic engagement gap.” In other words, the digital divide mimics the civic engagement divide which strongly suggests that the online environment, alone, cannot best equip certain young people to become civic engagers. As such, the face-to-face technology-rich environments of CTCs need to be more carefully explored as places to provide the skills and opportunities not always afforded by online engagement.

Pathways to Civic Engagement

Despite the differences in definitions and orientations of civic engagement, the literature does provide common themes in regards to the components most associated with civic engagement. For the purpose of this study, these components, namely social connectedness and self-efficacy, can be understood as pathways to civic engagement; in their absence, civic engagement may not be as likely for young people. Therefore, it is important to take these components into consideration if strides are to be made in the area of urban youth civic engagement.

Social connectedness. Lenzi et al. (2013) sought to understand how young people become civically engaged. Their work with 403 adolescents determined that civic engagement for youth was predicated on “neighborhood social connectedness” (Lenzi et al., 2013, p. 45). They found that the bonds young people felt with those living next door or on their blocks had a direct impact on their willingness to become civically engaged. More specifically, they learned that when young people identified “cohesive relationships between youth and adults, who are available to support them and represent positive role models,” their inclinations to become civically engaged increased (p. 51). Lenzi et al. (2013) found youth civic engagement was closely linked to personal relationships young people established in their neighborhoods, and through these relationships they may have become more engaged. These findings are consistent with other research that has shown young people’s pathways to civic engagement are dependent on their relationships with others in the community and/or in the group with whom they work (e.g., Duke, Skay, Pettingell, & Borowsky, 2009; Nygreen, Kwon, & Sanchez, 2006; Putnam, 2007; Shiller; 2013).

Self-efficacy. Some researchers have also found individuals' beliefs in their own potential to make change is imperative to meaningful civic engagement (Bandura, 1997; Chung & Probert, 2011; Rubin, 2007). Chung and Probert (2011) studied 129 African American youth in low-income areas of Trenton, NJ, to learn about the types of civic activities that might appeal to this population and that were already part of these participants' lives. Specifically, this study looked at two types of civic activities: volunteerism and political activism. These outcomes were measured according to Bandura's (1997) social cognitive theory in which the individual's belief that change is possible and that the "individual citizen can play a part in bringing about this change" (cited in Chung & Probert, 2011, p. 228) is critical. Interview data revealed that when young people had stronger beliefs about their potential as change agents, they reported a stronger likelihood to engage in both future volunteer work and political activism. This finding aligned with Rubin's (2007) work on civic identity, which suggests young people's own experiences need to be considered as an entry point for optimal civic learning endeavors (i.e., as the first step on a pathway to civic engagement). This work provided context for the development of particular interview questions that were aimed at understanding the participants' civic experiences.

Benefits of Civic Engagement

Efforts to increase civic engagement among young people should be prioritized by... (whom?), given the benefits associated with civic engagement. Today, evidence is readily available that shows correlations between civic engagement and positive youth development (e.g., Balsano, 2005; Delli Carpini, 2000; Duke et al., 2009; Lerner, 2004; Levine, 2011). In other words, when young people are civically engaged, they have been

found to have better mental health, higher academic achievement, and lower rates of teen pregnancy and drug use. Research has also indicated youth civic engagement can be linked to liberty and the future of democracy (Balsano, 2005; Checkoway & Aldana, 2013; Delli Carpini, 2000; Flanagan, Levine, & Settersten, 2007; Levine, 2011; Lerner, 2004; Youniss & Levine, 2009) and it can provide an avenue for young people to become participatory in their communities. This happens through acts such as volunteering, voting, increasing knowledge about current and local events, becoming entrepreneurs, and finding outlets for their voices. Many proponents argue that without young people's civic engagement, and in particular engagement from urban youth, democracy cannot be sustained. Instead, social Darwinism could prevail, suggesting "power and prerogative [would reside] in the already-powerful" (Lerner, 2004, p. 17).

The correlation between civic engagement and liberty is well-documented throughout the literature (Duke et al., 2009; Hart & Kirshner, 2009; Lakin & Mahoney, 2006; Levine, 2011; London et al., 2010; Nygreen et al., 2006). So, too, is the link between civic engagement and one's personal health and life trajectory. For example, "civically engaged youth tend to have an increased sense of their own competencies, be more internally driven to get involved in prosocial activities and have a higher self-esteem" (Balsano, 2005, p. 188). Young people who are civically engaged have also been found to have higher academic success compared to those who do not (Levine, 2011). Additionally, civic engagement encourages "higher internal locus of control and a higher level of comfort resolving social and interpersonal issues" (Balsano, 2005, p. 188). These benefits are long-lasting, argue Youniss, McLellan, and Yates (1997), who found that

participating in community service as a young person was a predictor of adult behavior, including voting and involvement with community organizations.

Positive Youth Development. The PYD framework (Lerner, 2004) is a common way in which civic engagement is described in the literature as a benefit to young people. This framework was mentioned in Chapter I as a foundational component of Bers's (2006) PTD framework. Lerner (2004) explained, "policymakers and practitioners are pleased when their actions are associated with the reduction of such problems ... however it is dispiriting for a young person to learn that he is regarded by adults as someone who is likely to be a problem for others as well as for himself" (p. 3). Bers's PTD framework also supports Lerner's contention that the evaluation of youth on their community service, academic success, and involvement in extracurricular activities would benefit the individual and society. Here, I provide an overview of the PYD framework to illuminate its use as a way to understand positive outcomes related to youth civic engagement.

By altering the lens and looking at the talents, interests, and strengths of young people, researchers have been able to better understand the development of healthy, self-confident, and contributing young adults. This occurred through what the Search Institute in the late 1990s referred to as young people's "assets." At the heart of PYD are the five C's: competence, confidence, character, caring, and connection. Later, Lerner (2007) added his belief that the culmination of the five C's leads to contribution, which he defined as "the desire and capacity to give back to those people and institutions that give to us" (i.e., civic engagement) (p. 183). When young people have been provided opportunities to learn the five C's, research has shown positive results (Lerner et al., 2005).

The most robust research around PYD has taken place with young people participating in 4-H programs. According to Heck and Subramaniam (2009), at least five different research studies over the past nine years have used the five C's framework to better inform 4-H programs and practices. Other researchers have used this framework, too, to understand the impact of technology on young people (e.g., London et al., 2010), understand the effects of an after-school program on Latino youth (e.g., Riggs, Bohnert, Guzman, & Davidson, 2010), and assess the impact of organized sports on young people (e.g., Le Menestrel & Perkins, 2007).

Divides in Civic Engagement Opportunities

The need to provide more civic engagement opportunities for urban youth is supported throughout the literature. Research shows this group of individuals is at a disadvantage when it comes to opportunities to “develop the skills and dispositions necessary to participate in civic life” (Hart & Kirshner, 2009, p. 107). This divide in civic opportunities that exists between poor and wealthy young people is referred to in a variety of ways. This includes the *civic engagement gap* (Levinson, 2007), the *civic empowerment gap* (Levinson, 2010), the *civic opportunity gap* (Hart & Kirshner, 2009; Kahne & Middaugh, 2009; Levine, 2011), and *the participation gap* (Jenkins et al., 2009). These terms differ slightly in their connotations. For example, the civic achievement gap (Levinson, 2007) refers to differences in civic learning outcomes such as civic skills and knowledge (Kahne & Middaugh, 2009), whereas the civic opportunity gap (Hart & Kirshner, 2009) is more about the differences in how young people gain access to civic engagement opportunities. Despite the differences, the common narrative through all of these terms is that, for a variety of reasons (e.g., parental involvement and

education, schooling, lack of mentorship) urban youth lag behind others in civic development. However, the literature suggests that above all else, the primary reason for this civic engagement gap is opportunity. Hart and Kirshner's (2009) extensive review of research in this area found that overwhelmingly, compared to their wealthier peers, young people from poorer neighborhoods are less likely to be offered the types of opportunities to engage in civic activities.

In recent years, community-based organizations (CBOs) have made strides in closing this gap (Shiller, 2013). Challenges still exist when it comes to civic education in schools, in particular lower-income schools, therefore, researchers and community organizers have looked to CBOs to bridge the civic achievement gaps in ways formal systems of education cannot (Shiller, 2013). Given that researchers should not ignore the important role technology plays in the lives of young people, especially when (as previously mentioned) some youth use technology to advance their civic engagement activity, CTCs could play a role in helping to mitigate the civic achievement gap. Below, I highlight the literature around CTCs, starting with the search methodology. Then, the historical context of CTCs as well as how CTCs currently bridge particular divides are detailed.

Community Technology Centers

Search Methodology

The literature about CTCs is as diverse and unique as the centers themselves. Not only do the centers range in their locations (from Oakland, California, to India to New York City), but they range in what Davies, Wiley-Schwartz, Pinkett, and Servon (2003) refer to as “three dimensions: their organizational type[s], their programmatic orientation[s], and their target population[s]” (p. 6). Some centers are stand-alone entities,

while others are part of a network; some centers serve primarily adults, but others serve young children; and some centers use specific curricula, while others are more open-ended.

Despite their individual differences, CTCs are described in the literature as physical places that are community-run and provide technology training, access, and opportunities for those (often lower-income participants) who may otherwise not have such contact with digital tools (Barkhuus & Lecusay, 2012; Buckingham et al., 2003; Cole, 2006; Davies et al., 2003; Felt, Vartabedian, Literat, & Mehta, 2012; Hick, 2006; Servon & Nelson, 2001). To focus on the specific purpose of this study, the literature reviewed was limited to those centers serving primarily lower-income youth in the United States, with the exception of one study in the UK and one study in Canada. Additionally, while some researchers have studied and written about public libraries in similar ways as they do CTCs, libraries were not included in this review.

Some literature about primarily online youth participation was discussed above, however it is not included here, even if CTCs were related to the participants' uses of online tools. This study focused on the physicality of brick-and-mortar buildings and the face-to-face affordances of those spaces. Lastly, I excluded literature that examined the ways in which CTC programs can be assessed. This study was not a program evaluation in any way, and therefore that literature was not relevant.

Historical Context

The first recorded account of an out-of-school center created for underprivileged youth was that of the Dashaway Club in Hartford, Connecticut, in 1860 (Cole, 2006, pp. 2-3). This club was established after three women found young, poor boys walking the

streets near their homes. These women invited the boys in, fed them, and gave them some positive attention. Not long after that first encounter, these women sought a local space to hold meetings for the boys; this became the first official Boys Club (Cole, 2006). From there, organizations such as the YMCA, 4-H Clubs, Junior Achievement, and Head Start flourished. In a recent estimate, more than 8.4 million school-aged children participated in after-school programs (Afterschool Alliance, 2013). These programs provided children food, safe environments, constructive and stimulating activity, and positive attention in order to maximize their potential as learners and contributors to society (National Research Council, 2000). Low-income families, especially, have relied on the opportunities not easily accessible without the help of community-supported programs.

One early example of a community program with a focus on technology and civic engagement occurred in 1968, when IBM created a job training program for low-income adults in Houston, Texas (IBM, n.d.). Through instruction about coding, the center fostered civic engagement by providing a variety of career skills intended to help local people find work in their communities.

Fifteen years later, in 1983, Antonia Stone created a CTC called Playing To Win. This center, located in East Harlem, focused on teaching urban youth to use computers in a way that helped them understand the value and importance of technological skills (Feuer, 2002). That center was the first of what is known today as the Community Technology Center Network (CTCN), the largest network of CTCs in the United States and internationally. Since its inception, the CTCN has supported the development of more than 2,000 CTCs across the nation (Kafai et al., 2007).

Present-day CTCs, such as the Fifth Dimension (started in 1986), Youth Radio (opened in 1992), and the Computer Clubhouse Network (which began in 1993 as one center and has since grown to more than 100 centers in more than 20 countries), continue to provide the same sort of emotional and behavioral encouragement as did the Dashaway Club in 1860. At the same time, they have offered a variety of technical programs, including digital storytelling (Hull & Schultz, 2002), radio programming (Soep, 2011), video game creation (Kafai et al., 2007), discussion of online communication practices (Buckingham et al., 2003), and reading comprehension (Bransford, 2001). The following section will provide more detail about the current state of research in the field of CTCs, organized by shared themes related to the focus and purpose of this study.

Themes Across the Literature

Research around CTCs varied in terms of the programs studied, the employed theoretical frameworks, methodologies, and specific results. However, three main themes were identified and will be discussed here: the positive experiences of those in attendance at CTCs; the motivation of young people to participate in CTCs; and the role of CTCs in bridging digital divides. Such divides include those around access, use, and identities shaped by formal learning versus informal learning. This literature provides a foundation for this study's purpose: it shows CTCs as places with great potential to support the development of young people's civic engagement pathways.

Positive experiences. Through the literature, it is clear that young people have had positive experiences at CTCs (e.g., Barkhuus & Lecusay, 2012; Buckingham et al., 2003; Hick, 2006; Kafai et al., 2007; London et al., 2010; Pinkett, 2003; Resnick et al., 1998; Servon & Nelson, 2001). While certain factors at CTCs can present challenges (Barkhuus

& Lecusay, 2012; Willett, 2007), such as irregular attendance and software programs that require a lot of time to master, research has demonstrated the experiences were overwhelmingly beneficial to both the participants and the centers' staff (i.e., volunteers, mentors, and instructors). Hick's (2006) participants at the Debra Dynes Family House CTC described the benefits of participation in a CTC. The mother of a student participant, for example, explained that the computers in her center were incredibly helpful for her son to complete his homework. According to the student's mother, "it is more important for my son to have access to the computer than to have supper tonight" (p. 59). This indicated how much the mother valued the experience for her son.

Barkhuus and Lecusay (2012) reported similar results regarding the positive experiences of young people at CTCs. Their young San Diego participants showed "inventiveness and enthusiasm" through their work at a CTC located in a low-income area of San Diego. Additionally, Goodman's (2003) youth video production efforts in New York City resulted in an increase in student skills, skills the students claimed they never had before (p. 90). Similar accounts of positive experiences were documented throughout the CTC literature, and although these accounts differ slightly in setting, content, or outcome, they all highlighted the benefits for participants.

Motivated to participate. The second shared theme among the extant literature on CTCs is that young people were motivated to participate in CTC programs. The following reasons emerged: the newest technologies and media often available at these centers, the nurturing environments, and the engagement that could be had with peers and adults who shared interests (Davies et al., 2003; Goodman, 2003; Herr-Stephenson, Rhoten, Perkel, & Sims, 2011; London et al., 2010). For most young people who visited a

CTC, it was the only place where they could access video equipment, game development software, or a fast Internet connection. Furthermore, participants in those studies consistently described CTCs as supportive, engaging, and relevant. For many young people, their local center might have been one of the few places where they felt their voices were valued. For this reason, they were motivated to participate. Goodman (2003) described this motivation as a result of the success and “personal accomplishment and empowerment” they received from their involvement at the center (p. 53). Also important to note is that participants were motivated because they recognized that their success was not just a result of their individual work. Rather, it was a reflection of the group’s cohesive effort (e.g., mentors and peers).

In the CTCs London et al. (2010) studied, the youth frequently described the connections they made with the older staff members who took on mentorship roles as some of the program’s most lasting positive impacts. One participant from the Bresee CTC in Los Angeles explained it this way: “Being a kid, you see a wall, and you’re afraid to cross that wall, but to see a person reach, it makes a difference” (p. 213). At another center London et al. studied (2010), this one outside of Fresno, CA, one young person reported, “The kind of people here ... you can talk to them. They will listen to you ... it gives you more confidence. They will push you” (p. 214). This mentorship inspired participants and provided additional motivation.

Bridging digital divides. The third theme found across the literature was that CTCs helped bridge digital divides. These divides, which put urban youth at greatest risk, included access to technology and use as well as identity development. According to Barkhuus & Lecusay’s (2012) research, CTCs helped bridge divides related to identities

because the work young people did in these centers supported their belief in themselves as experts in the technology field. Such work supported marketable skills that were applicable in the job market, as well as social networks within the community (Barkhuus & Lecusay, 2012; Goodman, 2003; Kafai et al., 2007; Pinkett, 2003; Willett, 2007). The Bronx Community Technology Center, for example, has had young people collaborate and work through the steps to gather and analyze information, identify problems, evaluate solutions, and make decisions (Bransford, 2001). In this way, CTCs have provided opportunities for young people to use technology in more advanced and meaningful ways that are often not made possible in the city schools they attend; CTCs help bridge divides. The question that drove the present study is this: how can CTCs help bridge the civic engagement divide?

Civic Engagement and Community Technology

Centers: A Gap in the Literature

As mentioned at the start of this chapter, the initial search for this literature review using “community technology centers” and “civic engagement” yielded one result: a study by London et al. (2010). Despite the fact London et al. (2010) did not intend to specifically learn about young people’s civic engagement practices at the five nation-wide CTCs they studied, they did learn that civic engagement was a positive youth development outcome. Their participants developed, both intentionally and unintentionally, “technology skills building, relationship building, youth voice, and civic engagement” (p. 42). This finding was encouraging in that it showed how CTCs can serve young people, in particular through civic engagement.

Additionally, London et al. (2010) provided a way to understand how technology did, and did not, play a role in this civic engagement. While technology was the reason participants first came to the CTCs, the technology skills they learned were not necessarily the most important reason they stayed. “Bonding” with peers and mentors within the CTCs and “bridging” with members and figures outside the CTCs (even people like President Bill Clinton, New York City Mayor Michael Bloomberg, and entertainer Bill Cosby) were among the reasons they continued to participate (p. 42). Furthermore, their findings suggest that the five CTCs studied provided opportunities for participants’ autonomy, leadership, self-esteem building, creativity, and voice development—all contributors to civic engagement.

London et al.’s (2010) work was valuable for this study in that it illuminated the appropriateness a focus on CTCs for civic engagement, as well as the importance of the face-to-face environment of the CTC in terms of its benefits beyond the development of technological skills. Their work also provided useful frameworks and methodologies that were considered throughout this study’s design; these will be discussed in Chapter III.

Chapter II Summary

This chapter provided an overview of the civic engagement and CTC literature. The absence of more research focused on the intersection of these two areas strongly positions the research and findings presented in this paper. In order to improve the lives of individuals, strengthen communities, and contribute to a strong democracy, it is essential that more be done to better understand how to support the development of civic engagement pathways for young people, in particular those young people who are caught in the civic engagement gap. The civic engagement gap, as pointed out in this literature

review, is detrimental to young people and the nation's democracy. While some literature shows potential optimism about online participation (Bennett et al., 2010; Delli Carpini, 2000; Jenkins et al, 2009; Kahne & Middaugh, 2012; Middaugh & Kahne, 2013), the virtual environment may not be able to provide all young people need in terms of the development of civic engagement pathways. Therefore, it is necessary to better understand the affordances of the face-to-face environment and how young people can use digital tools at CTCs to support the development of civic engagement pathways; the findings of this study offer insight into these areas. The methods used to arrive at the findings are discussed in the following chapter.

Chapter III

METHODOLOGY

Introduction

As discussed in Chapter I, previous research has shown that urban youth lack opportunities to positively develop through civic engagement (e.g., Checkoway & Aldana, 2013; Hart & Kirshner, 2009; Kahne & Middaugh, 2009). The purpose of this study was to explore how urban youth use digital tools at CTCs to develop pathways to civic engagement. The literature supported the notion that to become civically engaged, youth must overcome obstacles including access to resources, mentoring, and technical and social skill development; CTCs can help address such obstacles, but very little research has described the specific role of participants' technology uses at the CTCs to do this. To address this gap in the literature, I asked the following research question: How can urban youth use digital tools at community technology centers to develop pathways to civic engagement?

To answer the research question, I planned to explore the participants' uses of technology within a particular CTC setting, as well as their perceptions of civic engagement and their own identities as civic engagers. Given my interest in "understanding the meaning people have constructed" (Merriam, 1998, p. 6), a qualitative design was appropriate. In addition, I sought "a complex, detailed understanding" of how the use of digital tools at CTCs could support young people's civic engagement, and this was another reason to select a qualitative design (Creswell, 2007, p. 40).

Methodologically, a qualitative design was a good fit for research on youth and CTCs because it accounted for the uniqueness of the participants' individual experiences; rich

and thick description illuminated their individuality. Previous CTC research has shown the value of qualitative research for investigating similar topics, although not specifically for the purpose of youth civic engagement (Buckingham et al., 2003; Goodman, 2003; Hick, 2006; Pastor & Vasquez, 2011).

Below, I detail my rationale for the use of a case study methodology. I then include details about this study's selection of participants, the settings, data collection, data analysis, validation, and limitations.

Rationale for Case Study Research Design

As mentioned above, the following research question guided this study: How can urban youth use digital tools at CTCs to develop pathways to civic engagement?

Questions that ask “how,” according to Yin (2014), “are more explanatory and likely to lead to the use of a case study ... as the preferred research method” (p. 10). In addition to the research question, other characteristics define a case study, including a clear case boundary, real-life contexts, and particular types of data collection. Below, I highlight how these characteristics were present in this study.

An identifiable bounded case is one of the most commonly known characteristics of a case study (Creswell, 2007; Merriam, 1998; Stake, 1995). A case boundary is “a thing, a single entity, a unit around which there are boundaries” (Merriam, 1998, p. 27). This study was inherently bounded by the seven participants and their participation in programs at two CTCs. Within the cases, I focused on the participants' uses of digital tools in the CTCs and how those uses contributed to the development of pathways to civic engagement. This focus required multiple sources of evidence, as is expected in a case study (Yin, 2014). I relied on observations, interviews, and artifacts (e.g., the digital

products the participants created) derived from real-world contexts—another essential characteristic of the case study (Yin, 2014). In this study, young people naturally engaged with peers, the technology, instructors, and others in their CTCs. In and through these real-world experiences, I sought to understand how the seven participants used technology in two different CTCs to develop pathways to the real-world context of civic engagement.

Study Design

I employed a multicase, multisite study design that provided a cross-case comparison of seven participants at two different CTCs. Compared to a single-site case, the data collected at these two sites offered varied and unique perspectives, which helped produce more compelling interpretations and greater external validation (Creswell, 2007; Merriam, 1998; Yin, 2014). The following sections address the site selection, participation selection, role of the researcher, and data collection and analysis procedures.

Site Selection

This study took place at two different CTCs located in urban neighborhoods in a mid-Atlantic city, population approximately 620,000. I chose these two CTCs to showcase the varied ways their participants used technology while participating in different CTC programs, and to reveal the ways in which these uses could lead to pathways to civic engagement. Both CTCs were nonprofits; maintained high reputations among donors, participants, and members of the communities in which they were situated; and were financially supported by diverse groups and individuals. Although their missions and outputs differed, they both provided a multitude of opportunities for the young people

they served, and they both continuously developed new ways to impact their participants and the surrounding communities. Each center is described in detail below.

Yardsville Community Technology Center Description

The Yardsville Center was run by an organization founded in 2000 to help the city's young people tell their stories through media and become engaged with their communities. At the time of the study, Yardsville offered a number of different programs including ones that focused on graphic design and marketing, advanced media production, photography, public speaking and media literacy, and robotics. Five participants in this study—"Nicole," "Janelle," "Aliya," "Melanie," and "Tori" (pseudonyms chosen by the participants)—were enrolled in the program focused on design. Known as the Design Team, its goals were to teach graphic design and public speaking skills.

The Yardsville participants met in an office space in a building with multiple tenants. This building was located in the heart of an urban neighborhood that was undergoing a renaissance. After World War II, this neighborhood faced high drug use, crime, low high school graduation rates, and high unemployment. Around the time this research was conducted, a new vision for the area was identified, and the building in which Yardsville was located served as a beacon for both its neighbors and also the Yardsville participants, who regularly traveled an hour from their own corners of the city to this one. One of the participants told me that coming to this part of town was like a breath of fresh air. The restored brick, reclaimed wooden doors, large canvas photos, fresh paint colors, open beams, courtyard with fire pit and couches, and numerous bike racks contrasted with the places from which many of the participants came.

Additionally, the Yardsville participants had access to a kitchen/eating area where they were provided a free meal before each session. The kitchen featured a refrigerator, soda machine, tables and chairs, and notes posted around the area reminding people to clean up after themselves. In this area, the Yardsville participants were afforded opportunities to interact with professionals they would otherwise never have met. In addition to eating in the kitchen, participants sometimes went to the coffee shop or cupcake shop around the corner from the CTC. This was something many could not do in their own neighborhoods, both because of the absence of such places and the potential for violence that existed in public spaces.

The Design Team's meeting space within the building boasted the same hip feel as the rest of the building. Large areas of exposed brick, rich orange accent walls, and oversized original windows facing the main city street were a few of the most noteworthy design elements. So, too, were the handmade reclaimed wood counters, desks, and stools that served as the accent furniture. A smaller conference room, with a custom-built round wooden table and engraved chairs that were hung on the wall when not in use, was located off the main space. Also off this main space were a sound booth (as seen in Figure 1), an editing room, three individual office spaces, and the primary area where the students met for the majority of the time. When the study first began, the center had just moved from one side of the building's hall to the other; the directors told me they needed more space for their growth as an organization. As a result, during the first few weeks of the study, many boxes, construction materials, electrical cords, and file cabinets were out of place. Walls were being painted, windows treatments were being installed, and furniture was delivered weekly. The participants and the directors were, for that first

month or so, unsure about how they would finalize the arrangements. They worked together tirelessly to make the space a home for everyone there, and within weeks, the space came together in both a cozy and professional way.

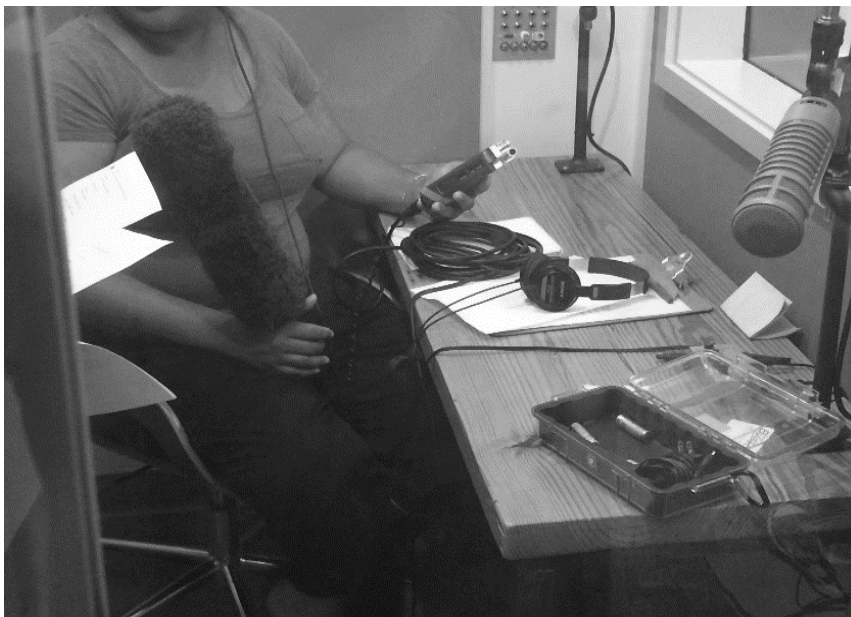


Figure 1. The Yardsville sound booth. This room was equipped with a microphone, headset, boom, recorder, and other tools needed to produce audio.

Most of the time, the participants worked in one area of Yardsville, as seen in Figure 2. This space was arranged with 13 desktop computers located on built-in desks around three sides of the room's perimeter. In addition to the computers, the room held a bookshelf and twelve to fourteen chairs with wheels. This room also had a green screen that hung from the ceiling and was pulled to the side when it was not in use. Different wall hangings came and went during the duration of the study. Some weeks, large Post-it paper hung from the walls. One week a corkboard was put in on one wall, and whiteboards were installed on another wall. From the beginning of February 2015 to the

end of May 2015, the physical space went through a variety of makeovers, including the replacement and repair of doors during two separate break-ins at the center.



Figure 2. Yardsville's primary workspace for the Design Team participants. This is where the participants most often used computers, brainstormed, and provided feedback to one another.

In summary, the Yardsville Center was an asset for its participants. This assessment aligned with the literature that asserted CTC spaces provided safety, comfort, and accomplishment (Barkhuus & Lecusay, 2012; London et al., 2010; Resnick, Rusk, & Cooke, 1998). First, its location served as an example of how a city neighborhood could improve when there was a vested interest, and this was especially refreshing to those participants who lived in neighborhoods where no vested interest existed. Furthermore, the building in which Yardsville was located provided common spaces open to all building tenants and users. This allowed for organic collaborations to take place between Yardsville participants and the building's tenants and professionals from the other nonprofit organizations that shared that building. Additionally, the physical nature of both the building and the Yardsville Center promoted sustainability. Most of the building materials had been repurposed or reclaimed, and this environmentally friendly architecture was not commonplace in many of the young participants' own homes or

neighborhoods; the atmosphere was a departure from their regular surroundings. Finally, the technological tools and equipment available to the participants in the Yardsville space afforded them opportunities to develop skills and relationships that promoted civic engagement pathways. This will be further explored in Chapters IV and V.

Kingston Community Technology Center Description

The Kingston Center was located in the same mid-Atlantic city as Yardsville. Unlike Yardsville, however, this site was in the heart of a thriving neighborhood that housed a variety of popular restaurants, bars, and shops. The neighborhood was just south of the city's financial district, and it was considered a desirable (and expensive) place to live for young professionals. However, urban blight could still be found less than a mile from the center's community, and many of the youth who came to this center—including the two participants in this study, “Epic Explosion” and “Tony” (pseudonyms chosen by the participants)—lived outside of the immediate, affluent neighborhood in which Kingston was located.

The CTC is located in a 5,000-square-foot space that previously served as a recreation center for the city. In 2012, this location was closed, along with 26 other city recreation centers, as a result of citywide budget cuts. The property remained vacant until it reopened in January 2013 as the Kingston CTC under the direction of two former city schoolteachers. They, along with other interested members of the community, developed the CTC's mission, which focused on maker activities and the use of technology for innovation, entrepreneurship, and career readiness. Programs at the Kingston Center were in high demand; according to the CTC's director, the number of youth enrolling in programs at the CTC grew from 470 to 2,500 in just one year. To accommodate these

numbers, the CTC had recently been awarded a furniture grant from IKEA to redesign the space.

According to its mission, the Kingston CTC, known as a “Maker Space,” was a place for young people to learn digital skills through hands-on making. The program I observed, the Maker Foundation Program, was developed to introduce students to popular maker topics (e.g., 3-D printing, game programming, website development, and interactive electronics). The Kingston students learned about these topics and were then expected to work on their own products using digital tools as well as materials and non-digital tools that could be found scattered through the space, such as screwdrivers, hammers, wire cutters, cardboard pieces, and nail files. My participants met and my observations took place in the main space, seen in Figure 3. This space was bright, open and conducive to collaboration and autonomy with its tables, chairs, couches, and various workstations.



Figure 3. Kingston’s maker space, where study participants gathered and worked. This photo was retrieved from Google Images.

The participants most often sat at their tables with other students while working on their projects. However, there were a number of specialized stations within the CTC's larger space. When students needed to 3-D print, they would go to the 3-D printing station, as seen in Figure 4. If students needed a particular tool (e.g., a wrench, nails, LED lights, hammer, or small motor), they were encouraged to go to the tool station, as shown in Figure 5.



Figure 4. Kingston's 3-D printing area. This area was complete with six machines, plastic printing material, and the various tools (scissors, screwdrivers, pliers) used for the printers and printing.



Figure 5. Kingston's toolboxes and workbench. This area in the Kingston CTC was stocked with a variety of tools and gadgets. Participants would freely visit this bench when they needed something.

The center also offered laser cutting, a presentation area, and a specific area for students to receive technical assistance from an instructor. During this study, students brought their computers to this area to be rebooted, carried over wires that needed duct tape, and brought up plastic 3-D printed objects that needed to be glued; one girl had a papier-mâché mountain that needed additional plaster and paint.

In addition to these spaces, the building also housed an office for the administrators, a smaller maker space for younger children (referred to as the Mini Maker Lab), and a kitchen area where the students were offered a free meal before the start of every session. The kitchen was adjacent to the larger workspace and had a refrigerator, microwave, chairs, and a few small, round tables.

In summary, the Kingston CTC space afforded participants unique opportunities to engage with technologies the participants would be unlikely to access anywhere else, such as 3-D printers, laser printers, circuit makers and LED light kits. Additionally, because of the center's open design, students had room to make and move around. This large work area, with access to a plethora of digital and non-digital resources, was key to exploring the many design options offered to the participants.

Participants and Sample Selection

The study's participants included five teenage girls, ages 14-18, from the Yardsville CTC, and two teenage boys ages 13 and 14 from the Kingston CTC. Chapter IV contains detailed descriptions of each participant. I used a purposeful sampling to find cases who could provide me the type of information I needed to help answer the research question (Patton, 2002). In this study, the people who knew the most about issues central to the case were the young people participating in CTC programs.

In February 2015, I explained the purpose of the study and handed out permission slips to approximately 11 students at the Yardsville Center and 20 students at the Kingston Center (See Appendix A for permission slip/consent form). Fourteen students across the two sites returned the permissions slips. A subset of the students who returned their permission slips were selected to participate in the study, using the following criteria:

- lived within the city limits;
- were willing to participate in at least three interview sessions and have me observe them and take notes during their time at the centers;
- parental consent of those under the age of 18.

After accounting for these criteria, I selected five students from Yardsville and three students from Kingston; one student from Kingston stopped attending about a month into the program, so her case was unable to be completed. This resulted in a total of seven cases for this study.

Role of the Researcher

This exploratory study was designed to learn more about the ways in which urban youth can thrive as civic engagers through their technology use at CTCs. As Lerner (2007) explained, when young people thrive, they “enter onto life paths marked by positive behaviors ... and by active participation in the communities (by civic engagement)” (p. 10). My role as a researcher was to discover how, if at all, this idea could apply to a group of young people’s technology use at inner city CTCs.

Prior to my researcher role at these sites, I played the role of CTC supporter. I had developed relationships with the directors from both sites through financial contributions and my participation in various community-sponsored activities at the CTCs. This involvement earned me a certain amount of trust before I took on the role of researcher, and paved the way for my entry into the field. However, I do not believe this influenced the participants’ willingness or unwillingness to share with me. Given the variety of relationships the CTCs had with various donors and volunteers, and the frequency with which outsiders came to visit the participants, I do not believe my status influenced or impacted the research in any way.

This said, I believe my relationship with the CTCs earned me certain freedoms to collect information and interact with all of the participants and staff once I officially took on the role of researcher. This freedom benefitted the study, as I found I could shift the

role a bit during the months I spent in the field. Specifically, at the outset of the study, I employed only direct observation, and did not interact with the participants. I spent the first few weeks at each site sitting separately from the group. From afar, I kept a researcher's journal and completed my observations and field notes. As the weeks passed, two trends occurred. First, a point of data saturation was reached. After approximately 12 hours at each site, patterns of student activity, technology integration, instruction, and interaction were noticed. These patterns remained consistent for the remainder of the study.

The point of data saturation was timely because the second trend that occurred allowed me to understand the participants from a different perspective. More situations started to present themselves that made it difficult to avoid participation with the students. For example, a Kingston participant asked me to play the Scratch game he created; the Yardsville participants invited me to participate in an icebreaker activity; and a Kingston participant needed my assistance to attach electric wires to his shoes, in order to get his Makey Makey to work. In these moments, my role shifted from observer to more participant-observer. This shift allowed me to better understand the participants' experiences with their creations as well as with the relationships they had established with their peers and instructors. I would also say this shift allowed the participants to feel more comfortable around me, thus opening more opportunities for them to share their thoughts and feelings about what they were doing at the CTC.

Data Collection Procedures

Research Procedures

To provide rich description, I collected several types of data at each site between February 2015 and May 2015, with follow-up interviews conducted for five out of the seven participants between January and February 2015. This data included interviews, observations, images, video, and artifacts. In this section, I provide a rationale and details about data collection for each data type. In addition to these data, which were included in the analysis, I also kept a researcher's journal to document my own questions and comments about what I saw. Although the journal was not included in the analysis, it provided me insight into areas such as the hierarchy (and lack thereof) between student and instructor, as well as issues tangentially related to the focus of this research. These issues included the participants' maturity, race, gender, life experiences, education, and technological advances at the CTCs and elsewhere. Table 2 shows the various data collected, the time frame in which it was collected at each site, and specific notes relevant to the data collection procedures.

Table 2
Data Collection Timeline

Time frame	Data collected	Yardsville center	Kingston center
February 16, 2015- May 28, 2015	Observations	Mondays & Wednesdays from 5-7 p.m.	Tuesdays & Thursdays from 4-6 p.m.
		Closed from March 2- 5, 2015, because of inclement weather	Closed from March 2- 5, 2015, because of inclement weather
		Interrupted the week of April 20, 2015,	Interrupted the week of April 20, 2015,

		because of city's unrest.	because of city's unrest.
March 2015-February 2016	Semistructured formal interviews	Yardsville participants were interviewed three times between March 2015 and May 2015. Follow-up interviews were conducted with five Yardsville participants between January 16, 2016, and February 16, 2016	Kingston participants were interviewed three times between March 2015 and May 2015.
February 23, 2015-May 28, 2015	Unstructured Interviews	Yardsville participants were part of unstructured interviews primarily while they worked in Yardsville or ate meals prior to the start of their sessions. I also attended two field trips with the participants, and captured interview data during these experiences outside of Yardsville.	Kingston participants were part of unstructured interviews primarily while they worked in Kingston. These interviews were often conducted while they sat at tables with non-participants, played video games, built objects with their hands, and/or ate meals at the start of the session.
February 16, 2015-May 2015	Artifacts (captured through photographs and/or video)	Websites Adobe Illustrator Adobe Photoshop Adobe Premiere Audio Recordings Paper & Pencil Drawings	iCloud Tinkercad Scratch Makey Makey Tackk

Observations

According to Yin (2014), observations allow the researcher to capture the “real-world setting of the case” (p.113) and provide a source of evidence for the research. For this study, direct observations and, at times, participant-observations, were used to gather data about the participants’ behaviors related to the ways in which technology served (and did not serve) as a pathway for young people’s civic engagement. Can you say why and when you moved from direct to participant observation? Just give a for example?

Per Kidder’s suggestion, the observations served “(1) a formulated research purpose, (2) [were] planned deliberately, (3) [were] recorded systematically, and (4) [were] subjected to checks and controls on validity and reliability” (cited in Merriam, 1998, p. 95). Observations at each site took place approximately twice a week starting on February 16, 2015, and ending on May 28, 2015. Yardsville participants met on Mondays and Wednesdays from 5-7 p.m., and I would normally arrive around 4:45 p.m. and start my observations while the students ate and socialized. The Kingston Center participants met on Tuesdays and Thursdays from 4-6 p.m., and I normally arrived at 3:50 p.m., since some students arrived as early as 3:30 p.m. During these months, the sites closed for a few days for various reasons including weather, vandalism, and the unrest that occurred in the city during spring 2015. Even with these exceptions, I spent more than 30 hours at each site during this study.

An observation guide adapted from Portland State University, n.d. (see Appendix B) was used during the observations. This guide incorporated certain principles from the theoretical framework employed in this study, the Positive Technological Development framework (Bers, 2006), and also allowed me to capture emergent behaviors not directly

related to the framework but also relevant to the study. During each visit, I routinely asked myself the following questions as I observed the participants.

- What technology is being used?
- Why are the students using this technology?
- How are they using it?
- Are the students creating something meaningful and/or personal to them?
- Could this technology or what they produce with it be seen as a pathway to their civic engagement? If so, in what way(s)?

The observation guide provided me some direction as I recorded my field notes at the sites. While recording my observations, I also found that I would regularly comment briefly on those things Merriam (1998) suggested, such as my “feelings, reaction, hunches, initial interpretations, and working hypotheses” (p. 106). I then turned these scratch notes into full field notes, usually within 24 hours, so that I could detail the events I saw and/or heard and better understand their possible implications. For the first two weeks, until the participants knew who I was and why I was there, I handwrote all notes in a notebook. Once I felt the participants understood my role in their space, I used a PC laptop to take notes.

Finally, during my observations, I also captured photos and video so that I could revisit particular moments from the study and review visual representation of the sites and participants. These digital images also provided unique perspectives, especially at busy times, when multiple students were walking, talking, or engaging with different technologies at the same time.

Interviews

This study employed both semistructured and unstructured interviews for both the instructors and the student participants. The interview is perhaps the most common and most important source of evidence in a case study (Creswell, 2007; Merriam, 1998; Yin, 2014), because through interviews, the researcher is able to gain access to the participants' thoughts and "obtain a special kind of information" (Merriam, 1998, p. 71). Through the interview, the participants and instructors themselves shared their thoughts and feelings about a variety of topics. For example, they discussed their experiences at the center, their relationships within certain communities, and their thoughts about different digital tools. This information was part of the triangulation process that helped confirm and validate my observations. All interviews were recorded and transcribed for analysis.

Semistructured interviews. I interviewed all student participants and one instructor from each center. The semistructured interviews with the instructors provided descriptive data, including the number of attendees in the programs, the types of programs offered, the relationships that exist between the CTC and the community, as well as their perspectives of how the center serves its young people in regards to technology skills and civic engagement opportunities.

Each student participant was interviewed a minimum of three times during the duration of this study, and the interviews ranged from 9 minutes to 40 minutes (see questions in Appendix C). The first interview took place within three weeks of the study's start and provided information about participants' motivation to participate at the CTC, the work they were doing at the time at the CTC, and any social issues that were

important to them. In this first interview, students told me why they came to the center and what they hoped to get out of the experience.

The second interview focused on the participants' thoughts about and understanding of civic engagement. I asked students to define the term, if they could. I also asked them to identify people they thought might be civically engaged and consider their own civic engagement; I asked them if they considered themselves civically engaged, or if they knew anyone whom they would consider civically engaged. For most of the participants, this second interview led to discussions about community and descriptions of what they thought of as their community.

The third semistructured interview was intended to reveal participants' thoughts and feelings about the projects they completed in the program. It was also meant to prompt participants to think and talk about the future of these projects and whether or not they saw the work they did as connected in some way to civic engagement. Furthermore, these interviews were meant to have participants unpack any ideas that may not have been clear to me in the first two interviews. For example, I asked students to revisit what they thought civic engagement meant to them and whether or not they felt more civically engaged after having participated in the program. Based on their definitions of civic engagement, I also asked students to clarify what "community" meant to them, a term they all used in their definitions of civic engagement. During this interview, I also asked participants to consider the types of technology-based projects they hoped to work on in the future.

Finally, members of the Yardsville site participated in a semistructured interview after the study was completed, between January 2016 and February 2016. This final

interview served as a means of member checking. The purpose of these member-checking interviews was to clarify questions I had about their data and to ensure accuracy by asking them to review and comment on the interpretations I had made up to that point (Creswell, 2007). Furthermore, I felt it was important to follow up on their thoughts and feelings about particular events that occurred in their cities months prior, as these events directly impacted their participation at Yardsville and their civic engagement opportunities. The Kingston participants did not participate in member-checking interviews, because I was unable to contact them after the study had concluded.

Unstructured interviews. The purpose of the unstructured interviews was to learn more about what the students were doing in real time (e.g., while they were actually using Photoshop or 3-D printing or sharing their ideas with peers). The unstructured interviews differed between Yardsville and The Kingston Center. At Yardsville, many of these informal conversations took place at mealtimes, prior to the official start of class sessions. Often they involved other students as well as mentors and instructors, and they could sometimes become personal. For example, one Yardsville participant told me that even though she was born a boy, she always knew she wanted to be a girl. Here, the unstructured interview facilitated discussions that might not otherwise have been opened. This information, which would have been unlikely to come out in the absence of interviews, was important to this participant's pathways to civic engagement; she wanted to use technology to help other transgender students. Additionally, since the Yardsville participants traveled to different locations away from the main CTC site as part of their Design Team activities, some of the unstructured interviews took place in entirely different settings (e.g., two different universities).

On the other hand, the unstructured interviews at The Kingston Center always took place at the table where the participants worked. As I took notes, I would sometimes ask clarifying questions. In these instances, I would either pull up a chair next to participants or kneel down beside them and have brief conversations. Unlike the participants at Yardville, the Kingston participants were more reluctant to chat. They often wore headphones and remained engaged with their tasks. This presented some challenges that will be discussed in greater detail during the Design Limitations section.

Artifacts

I took photos and videos to capture the students' projects at various stages of progress and at completion. These artifacts helped me consider the participants' work in light of what Bers (2012) referred to as content creation. In the PTD framework, content creation is essentially the opportunity to use digital tools (e.g., text, video, audio, graphics, and animations) to develop technological fluency and learn to problem solve (Bers, 2012, pp. 11-12).

The artifacts collected throughout this study include videos, animations, posters, pen and pencil drawings, audio clips, graphic designs, Scratch games, and 3-D printed models. These objects, both digital and non-digital, were "collected" (i.e., captured by video and photo) at various times throughout the study, once participants completed their projects. For example, every week, the Kingston participants worked on a new product. Therefore, I collected those artifacts every week. This timing differed from Yardville, where participants worked with partners on the same project for up to a month. Bers (2012) explained that it is through these content creation opportunities that youth develop

technological fluency. This fluency also revealed other behaviors related to civic engagement that helped direct the analysis and inform the findings.

Data Analysis

Observations, interview transcripts, and field notes were imported into an NVivo 10 program. The data analysis procedures I followed in this study were inductive and used open coding during both phases of the data analysis: the within-case analysis and the cross-case analysis. For each phase, I relied on the observations, interviews (i.e., transcripts and audio recordings), artifacts (both links to the actual artifacts as well as images/videos of those I could not access), and field notes in order to develop themes (Creswell, 2007; Merriam, 1998). More specifically, I compared the data with each other through multiple passes, and considered the similarities and differences. I then grouped particular data together to develop categories. Out of those categories, themes emerged. This iterative method of data analysis, coined by Glaser and Strauss (1967) as a constant comparative method, was first proposed as a means to develop a grounded theory. In this study, I employed this method in the same vein as other qualitative researchers whose intentions were not to build theory (Merriam, 1998) but rather to answer the research question.

Phase 1: Within-Case Analysis

As mentioned above, the data analysis procedures were carried out in two phases. The first phase was the within-case analysis. I used open coding to describe the interview, observational, and artifact data. Once I developed the initial, open codes in the first pass, I employed the constant comparative (Merriam, 1998) in the second pass. This method required a comparison of codes to search for commonalities and patterns among them.

During this second pass, I brought in the PTD framework (Bers, 2012) as an additional source for comparison. More specifically, I considered the technological behaviors as outlined by Bers to help me better understand the emerging patterns for the individual cases, and subsequently for all seven cases. New category codes were created as needed. For example, the open codes *peer-to-peer assistance*, *students testing each other's games*, *helping with digital pen*, and *brainstorming* were sorted together into a category called *collaboration*. A list of codes can be found in Appendix D. The data in this category all illuminated the participants' and instructors' willingness to "cooperate toward a shared task" (Bers, 2012, p. 12), which Bers defines as collaboration. Once all the data was coded in this second pass and I had developed categories (e.g., collaboration, community building, communication), I conducted a third pass of the data. This, the cross-case analysis (i.e., phase two) is detailed below.

Phase 2: Cross-Case Analysis

The cross-case analysis was an iterative process that relied on the constant comparative method to further explain how the participants used their digital tools to develop civic engagement pathways. Here, again, I referenced the PTD framework, as well as concepts and language borrowed from the youth civic engagement literature. For example, as mentioned above, collaboration emerged as a category in the within-case analysis. Across the cases, I noticed that the participants' collaboration, which according to literature about civic engagement is cited as a civic skill (Levine, 2008), developed specifically out of their content creations. In this way, one emergent theme in Chapter V is that content creation afforded the opportunity for participants to develop civic skills; collaboration is one of them.

Validation

According to Webster's Dictionary, validate means to "recognize, establish, or illustrate the worthiness or legitimacy of" ("Validate," 2017). Yet many qualitative researchers have espoused their own nuanced understandings about what, exactly, validation means in light of qualitative research (Creswell, 2007; Lincoln & Guba, 1985; Marshall & Rossman, 2011; Merriam, 1998). Here, I address issues of validation by borrowing from Creswell's (2007) perspective on validation, which most closely aligns with my own beliefs about validation in a qualitative context. For example, he saw validation as a process, as opposed to verification. In other words, to validate is to do all that is possible to assure the findings' accuracy according to the researcher and the participants. He believed validation was a "distinct strength of qualitative research" because of the thick description that comes out of the prolonged time in field and the relationships built between the researcher and the participants. Creswell (2007) suggested that "validation strategies" were important for researchers to employ as a means to document the accuracy of the research (p. 207). As such, below, I address components of my study through five of Creswell's (2007) validation strategies: prolonged engagement and persistent observation, triangulation, sharing of research position, thick description, and member checking.

Prolonged engagement in the field. I spent between 30 and 40 hours at each center, over the course of four months. This prolonged engagement and persistent observation at each center afforded me the opportunity to become very familiar with the settings and the participants. I built trust with the participants and the instructors, and as such I was granted access to data and to people. I also came to understand the different cultural

practices (e.g., at Yardsville no cell phones were allowed, and at Kingston students enjoyed their music and headphones).

Triangulation. The data collection was triangulated using multiple sources of data including interviews, observations, artifacts, and field notes. The recursive process used to analyze the various data provided me opportunities to corroborate my findings (Lincoln & Guba, 1985; Merriam, 1988; Miles & Huberman, 1994).

Researcher position. I shared my position as a researcher, acknowledging previous relationships I had with each CTC. Additionally, I provided my background and experiences as an inner-city teacher and current instructional technologist. In these ways, I made explicit and clarified the perspective and some of the assumptions I brought to this study and that could impact the inquiry (Merriam, 1998).

Thick description. Creswell suggested that thick description “allows readers to make decisions regarding transferability” (2007, p. 209). In Chapter IV, I describe each participant, including some physical descriptions as well as some personality traits. For all participants at Yardsville and Kingston, I provide rich descriptions of their participation. More specifically, I describe the specific ways in which they used technology, what digital products they made, and how the technology did, and did not, support the development of their civic engagement pathways.

Member checking. Member checking was used for five out of the seven participants in this study. For the other two participants, this was not possible because of scheduling conflicts. During member checking, I asked the participants to clarify questions I had about the data and to judge the accuracy of the story I told about them and the center (Merriam, 1998). I also asked the participants about certain findings and whether or not

my interpretations were, to the best of their knowledge, accurate. Each of the participants involved in the member checking agreed with my interpretations and made themselves available for future interviews.

Design Limitations

As mentioned at the start of this chapter, qualitative researchers are interested in real-world contexts and how people make meaning of their worlds. In these real-world contexts, limitations exist when it comes to research. For example, compared to Yardsville, Kingston proved to be a much more difficult site at which to recruit participants and interact with them. Out of the 20 students on average who attended the Kingston sessions, only four students returned permission slips, and only two of those four students met the criteria to be considered participants. I can only speculate as to the reasons for this, however, I would argue the students at Yardsville were a bit older, on average; they were mostly female, and therefore likely to be more talkative; and the work at Yardsville was more obviously collaborative and social, lending itself to interaction with others, as opposed to the more individualized work at Kingston.

Additionally, rarely did more than 11 students at a time attend the Design Team sessions at Yardsville; this made for an intimate group whose members knew one another well and could not avoid guests who sat in the room with them (e.g., me). Conversely, Kingston's program enrolled about 25 students, with an average of about 20 students in attendance each session. The space itself was significantly larger, and the Kingston participants were allowed to use phones, listen to music, and work more independently. Often, no empty seats were available at the tables where the Kingston participants sat, which also created physical limitations.

Chapter III Summary

A qualitative multisite, multicase study was best suited to explore this research question: How can urban youth use digital tools at community technology centers to develop pathways to civic engagement? Through this particular methodology, I collected data from seven participants at two CTCs. The data, collected from February 2015-February 2016 with between 30 and 40 hours spent at each center, included observations, field notes, interviews, and artifacts, as well as a researcher's journal.

The two-phased data analysis process relied on the constant comparative method (Merriam, 1998) where open codes were compared, in an inductive process, to arrive at themes. Throughout the first phase, the within-case analysis, I assigned descriptive codes in the first pass of the data. The second pass of the data included the referencing of the PTD framework (Bers, 2012) to provide a lens through which I developed explanations for the individual participants' pathways to civic engagement through their use of digital tools. These explanations will be discussed in detail in Chapter IV.

How these explanations compared and contributed to the emergent themes will be discussed in Chapter V, the cross-case analysis. This second phase of data analysis was also conducted through the use of the constant comparative method. Here, categories from each participant were compared and contrasted to each other, and the PTD framework's technology-mediated behaviors were again referenced. Additionally, I borrowed language from the civic engagement literature to best help illuminate how, as a collective group, the participants used digital tools at CTCs to develop pathways to civic engagement.

Chapter IV

WITHIN-CASE DESCRIPTIONS

The purpose of this multisite, multicase study was to explore the ways in which seven urban youth used digital tools at two CTCs to develop pathways to civic engagement. Pathways, a term ubiquitously used throughout the civic engagement literature yet not directly defined, is assumed to mean the entry points or means to access something—in this case, civic engagement. In this chapter, I discuss the ways in which participants used the digital tools made available to them through the CTC to, either intentionally or unintentionally, support their development of civic engagement pathways. Authors like Bobek, Zaff, Li, and Lerner (2009) acknowledge that the pathways themselves do not always lead to traditional models of civic engagement, such as voting, running for office, or reading the newspaper. However, researchers agree that civic engagement, in any of its forms (e.g., voting, community service, blogging about political issues), is not possible without pathways. In other words, the absence of opportunities to develop particular skills or to interact with people and information outside one's typical circle, for example, limits the likelihood of an individual becoming civically engaged.

This chapter includes seven case descriptions that highlight technology's role in the development of the participants' civic engagement pathways. I use Bers's (2012) PTD framework to describe the participants' various uses of digital tools, employing PTD's technology-mediated behaviors—communication, collaboration, community building, content creation, and creativity—to explain each participant's unique implementations of the technologies and to illuminate the variability in their uses. Finally, I use this framework to make connections between the participants' technology uses and the ways

in which they did, and did not, develop civic engagement pathways. Taken together, the cases represent a range of digital tool use as well as a variety of pathway developments. Cross-case themes will be examined in detail in Chapter V.

Each case is rooted in the data collected from observations, interviews, and artifacts developed by the participants through participation at their CTCs. Each case begins with a participant quote or researcher's field observation that draws attention to the participant's thought or action related to the CTC, technology, and/or civic engagement. Following that is a description of the participant, his or her participation at the CTC, his or her pathways to civic engagement described through PTD technology-mediated behaviors, and a case summary. The cases are grouped by CTC, starting with the five Yardsville participants followed by the two Kingston participants.

Aliya

Personally, the Yardsville CTC helped me single-handedly with everything I need to be successful in the future. Time management, networking, communicating, media skills to actually do the work. Not just that, but knowing how to story tell, knowing how to story tell digitally. Knowing how to do these things that will be necessary (Interview, 2/12/16).

Description of Aliya and Her Participation at Yardsville

At the time of this study, Aliya presented herself as a bright, driven, quiet, and mature 15-year-old who liked to write poetry and essays. She had a lovely smile, pretty braided hair, and warm dark skin. She lived with her Jamaican mom and Trinidadian dad in the city, and she had two older sisters with whom she had a strong relationship. This

relationship with her sisters prompted her to first check out the Yardsville CTC when she was only 11 years old. Once her older siblings started to attend, Aliya followed.

The first Yardsville program Aliya attended, with one of her sisters, was a Middle School Program, which partnered young people with different community groups, schools, and nonprofits and taught them how to use media to tell their stories and voice their concerns. Aliya explained that this program “asked hard questions” and got her “thinking at a really young age [about] things you need to consider and why these things are important” (Interview, 2/12/16). The digital skills were valuable to her; however, at that time, she was more impressed with how deeply she thought about social issues she had never before considered. She told me:

I didn't know anything. I didn't know what was going on around in my community. I was so sheltered in my own house, really, like that was my community. So it was really good for me to be aware of what was going on, because I didn't know there was so much (Interview, 5/20/15).

The next program Aliya enrolled in at Yardsville, at the age of 13, was the Mentoring Video Project. This program was designed to teach youth how to write, shoot, edit, and produce videos that would be shown to local and international audiences. As a participant in this program, Aliya worked on a video about human rights in her city, a topic about which she knew nothing. She and her sister also created a behind-the-scenes documentary after being asked repeatedly, “how do you make these videos?” She thought making this video would help people better understand the process students go through while in this program.

Two years later, at the age of 15 (and throughout the duration of this study from February 2015 until February 2016), Aliya was incredibly active at Yardsville. She was a member of the Design Team, along with the rest of this study's Yardsville participants. This program sought to teach young people advanced skills in graphic design, public speaking, and leadership. Aliya was also an apprentice for the new production company run by Yardsville. She told me that at least twice a week, on Mondays and Wednesdays, she was at the center from 12:30 to 7:00 p.m. "because the first four hours I'm working on some of the projects that we do for [Yardsville] Productions. Then as soon as that's over, I jump right into the attendance and Design Team" (Interview, 4/20/15). As a homeschooled student, Aliya has a flexible schedule.

In the Design Team program, Aliya worked on a variety of projects, including campaigns to promote better attendance for the city's pre-K and kindergarten students as well as high school students. The campaign promoting better attendance for younger students was built on an idea Aliya helped develop during the previous year's program. That group developed a story around Nate, a superhero who helps young children understand that even though obstacles may hinder them from getting to school on time, or at all, they can overcome those obstacles with help. The previous year's group made a coloring book that was distributed to the city's elementary schools, as well as board games and card games centered on the same story; this project is referred to in this study as the Be On Time campaign.

During the time of this study, the Design Team worked on different tasks. They wanted to develop an animated web series (i.e., a webisode) to bring Nate, as well as some new characters, into the digital world. Additionally, the team was asked by an

outside nonprofit organization to design advertisements about the importance of regular attendance and punctuality in high school. During this project, College World, Yardsville participants created ads that would appear on a website that provided information about colleges. Aliya and her peers researched the impact poor attendance and tardiness has on high school graduation rates and college acceptance rates, and shared some of this information through the ads. This work served as a public service announcement.

Aliya told me that she planned to remain active at Yardsville because she was incredibly interested in animation and graphic design:

That stuff [animation and graphic design] always appealed to me because I was always interested in digital art. I always wanted illustrative programs on the computer but never had it. The passion has always been there. That's always what I wanted to do (Interview, 2/12/15).

Yardsville provided her the experiences and opportunities needed to follow her passion. Likewise, she repeatedly suggested that her time at Yardsville raised her awareness not only of technology tools, such as Adobe Photoshop and Illustrator, but also of the issues of concern that motivated her and her peers to use digital tools (e.g., the impact of low attendance, suspension rates for Black students, train safety). As such, she had plans about how to make others more aware of similar issues. For example, in the future, Aliya planned to make a video to raise awareness about suicide. She also hoped to bring awareness to the idea that young people must become more involved in their city.

Pathways to Civic Engagement Through Participation at Yardsville

It was clear that the projects Aliya worked on at Yardsville played an important role in the development of her understanding of what it means to be engaged in the community. The center itself established a variety of pathways, or means, for Aliya to think and/or do something about issues meaningful to her and her peers—to become more civically engaged. Aliya's pathways to civic engagement were developed through her use of particular technologies to develop different content creations. In particular, her participation at the CTC supported the development of civic engagement pathways in three prominent ways. First, the web-based animations and the online advertisements Aliya created provided her opportunities to learn more about her city and its needs. Second, these projects required Aliya to engage in work that required her creativity (e.g., her unique approaches to problem-solving and using technology in nontraditional ways to make new products). They also gave her a platform whereby she learned how to share her ideas and perspectives with others, many of whom also care about youth, design, film, and social justice. Lastly, Aliya's use of digital tools connected her to her peers as well as those outside Yardsville; this is referred to in this study as community building. Specific examples of these pathways, framed by the PTD technology-mediated behaviors content creation, creativity, and community building (Bers, 2006), will be discussed in the following section.

Content creation. Aliya developed her content creations around civic issues that directly affected the city's young people. During this study, the Design Team focused on the epidemic of poor attendance that, according to the outside group that asked for assistance, negatively affected thousands of local families each year (Observation,

4/1/15). The content Aliya created around this issue included a webisode (i.e., a short, animated online video) and a web advertisement. These projects provided her opportunities to learn more about the correlation between poor attendance and high school dropout rates. In turn, those students with poor attendance are less likely to attend college; this was new information for Aliya.

Aliya's involvement in creating this content came out of two different requests. One organization approached the Yardsville Design Team and asked them to expand on the previous year's attendance campaign for pre-K and kindergarten students. This resulted in the Be On Time campaign. The other request was from a local business owner who operates a website focused on information about colleges; he asked the Design Team to attract the attention of high school students. This project was known as College World. Both campaigns were meant to highlight the direct relationship between school attendance and students' futures. Additionally, a train company asked Yardsville participants to brainstorm ways to let young people know of the dangers related to their actions near train tracks. After a number of local accidents and deaths, the train company needed help with their safety message.

Aliya came to Yardsville with a certain set of skills, which made some of her technology-related tasks easier to complete. For example, when she needed to provide statistics (about graduation rates, attendance rates, reading rates, etc.), she knew how to navigate online resources to locate this information. However, Aliya initially did not know why these statistics were important or how they impacted the lives of so many of her peers. But because of the content Aliya was asked to create at Yardsville, she learned about the issues and their importance within her community so she could make her

products most relevant and appropriate for their intended audiences. This was the case with the high school attendance advertisement she developed for the college-focused website.

In addition, Aliya's content creations helped her develop pathways to civic engagement because the digital tools made it possible for her to share her message with everyone who saw both attendance campaigns, both locally and outside her immediate community. She most frequently used tools such as Adobe Illustrator, Adobe Photoshop, video and digital cameras, sound equipment, green screen technology, and research websites, and she was quite confident in navigating them. For example, Aliya demonstrated her abilities through her Photoshop projects, which required an array of technical skills. She used the digital camera to take photos, which she then uploaded into Photoshop, edited, added text to, and mashed up with other media (e.g., music, voice). When unsure of how to accomplish a task with one of the tools, she would reach out to her peers or find her answers either on YouTube or through help documents. Aliya felt competent as the person to whom her peers and instructors went to for information about Photoshop. Her instructors and mentors often asked her to complete a variety of technical tasks, sometimes while other students worked on other parts of a project. For example, when Aliya's peers finished the audio recordings for the animated series, Aliya was the one asked to "pull it all together" (Observation, 5/18/15). This meant she traced over and imported hand-drawn images, created animations, produced slides, and manipulated multiple sound clips. She mostly used the software programs Adobe Illustrator and Premiere for this work, and while a few adults taught her the initial navigation of the programs, she taught herself how to accomplish many of these tasks at Yardsville.

It took Aliya a few weeks to complete the tasks related to the animated video, but she did finish everything, and the team shared the video with the public online. This content creation served as a way for Aliya to get to know the audience she needed to address (3- to 5-year-old inner-city students), and it also served as a way for her to share her message with the community. In the absence of this CTC and its work around particular civic issues, Aliya would not have had the opportunity to share her perspectives about these issues. In addition, the ways in which Aliya learned to share her perspective were just as important. She learned how to do this professionally, and independently as well as collaboratively. Aliya exemplified technological fluency through her content creation; this fluency supported her confidence about how to use digital skills and ultimately address civic issues in meaningful ways.

Creativity. Aliya repeatedly demonstrated creativity both in the terms of the process of creating the content mentioned above, and in terms of the final products. Bers (2012) defined creativity as “the ability to transcend traditional ideas, rules, patterns, relationships, or interpretations and to create and image original new ideas, forms ...” (p. 12). These projects required Aliya to engage in work that harnessed her creativity, including her unique approaches to problem-solving and using technology in nontraditional ways to make new products. According to Burgess, Foth, and Klæbe (2006), creativity is a contributing factor of civic engagement.

Aliya was encouraged to learn more about strong design elements throughout each Design Team session. The instructor, who had a BFA in graphic design and a MA in social design from a prestigious art institute, taught the Design Team how to use colors, fonts, images, and spacing. Through strong instruction and frequent hands-on practice,

Aliya took seriously the importance of design and exemplified this in various situations.

Aliya also thought about and used her technical skills in creative ways. Below, I highlight two specific examples of her creativity: first, the way she designed a web advertisement, and second, how she brainstormed through an app prototype.

The web advertisement project was targeted to an audience of high school students and its purpose, according to Aliya, was to connect the young people to either a “blog entry or video talking about the importance of attendance and how it affects your grade and how it affects your chances of graduation” (Interview, 4/20/15). During one of the project brainstorming sessions, Aliya explained that her “Be here get there” ad would contain different images, including photos that she planned to take with her camera. At the time of this session, she had only stock photos of White children at desks posing with their hands raised. She told the group she planned to hold her own photo shoot to obtain the exact photos she had in mind.

In the weeks that followed the initial feedback sessions around the participants' College World ideas, when Aliya shared just her slogan and stock photos, Aliya worked to create the exact image she wanted for her advertisement: a high school graduate holding a diploma. First, she created the diploma from scratch. She took hours to find the exact font, the exact spacing for the gold seal, the right border, and the most appropriate color. The diploma looked so official, the other students joked about using it for their own graduations. To add authenticity, Aliya borrowed a graduation gown and pieces of regalia for her model (another Yardsville participant) to wear. After these elements were in place, Aliya set up the photo shoot with the green screen, Yardsville's digital camera, and lights. Figure 6 shows the photo at this stage. Aliya took the photos and directed the

entire photo shoot, exuding confidence about her plan and how to execute it. Upon completion of the photo shoot, she searched the photos and found the images she liked best. She then she imported them into Photoshop and added an image of a school in the background. This created the illusion of a graduate in front of her high school.



Figure 6. Aliya’s diploma. Aliya created this entire look for her web advertisement.

Another illustration of Aliya’s creativity was through the video game app idea she proposed the previous year and started to develop during the course of this study. Her storyline ideas showcased her creativity as well as the ways in which she planned to use the technology. She explained, “the app is supposed to be like Super Smash Brothers ... that’s what inspired us visual-wise.” The idea of the game was that the player ran through the city, trying to get to school on time (Interview, 4/20/15). Aliya went on to say that the game idea would be good for young kids who could not read because she wanted to have

Nate (the game's main character) speak to the players about the importance of school attendance after they completed each level.

For this project, Aliya became the lead developer and used this opportunity to articulate her ideas; she let her imagination take hold. She imagined the game would use different levels of completion, and students would have to navigate through a house and a neighborhood to get to school. There might be a flying level and “maybe a bonus underwater puddle level” (Interview, 5/20/15). As Aliya and her peers talked through the levels of the game, they discussed the obstacles Nate, the main character in the game, would have to overcome (e.g., the alarm clock not working, no food for breakfast, missing the bus, can't find a shoe, traffic, etc.). They also brainstormed different ways to move Nate around, such as using a touch screen or moving the phone. To capture all of their work, Aliya created a Google Doc on her phone. She felt like there was too much to remember and she wanted to make sure they didn't forget anything (Observation, 5/11/15).

The team had not finished developing the app by the conclusion of this study. However, Aliya looked forward to its completion, in particular since she and one of her Yardsville mentors applied for a grant to help support the work on it. The grant writing experience, along with the other projects she worked on at Yardsville, made her think more deeply about the use of resources, design elements, and specifically how to get young children “inspired” and “engaged” in school. That process also forced Aliya to be creative with her plan and consider how to best market it to the donors.

Aliya's peers and instructors recognized her creativity in a variety of ways. For example, Aliya's peers were so impressed with the diploma she made for the high school

attendance project, they all wanted to use it for their own graduations; this became a robust discussion during one of the sessions. Also, Aliya was one of three students selected to represent youth voices at a citywide meeting about issues surrounding the arts budget in the schools.

Community building. Another pathway that supported the development of Aliya's civic engagement pathways was her community building. Both as a Design Team participant and as an apprentice for the Yardsville-run production company, her participation at Yardsville afforded her opportunities to take an "active stance" to use technology to "enhance the community and the quality of relationships among the people of that community" (Bers, 2012, p. 12). Below, I highlight how the affordance of digital tools and Aliya's use of them supported the development of relationships both within Yardsville and beyond its walls.

Aliya felt strongly about the relationships that she built at Yardsville:

That's one thing I'm really grateful for, because I've made a lot of good friends through [Yardsville] because it's a lot of people my age. Also, there's a lot of mentors that if you ever need help with anything, even if it has nothing to do with media, like if it's anything personal, anybody around the office will help you out, no problem. There's a lot of support here (Interview, 5/20/15).

She developed these relationships primarily through the content created at the center, including the two attendance campaigns discussed above. These projects encouraged interactions with both peers and mentors, which helped form trust and friendships. Even outside of the actual content creation, the Design Team instructor helped strengthen the participants' relationships by facilitating activities (e.g., icebreaker games), in which

Aliya always played an active role. Additionally, Aliya shared meals with her group twice a week. Prior to the start of the sessions, free food was provided in the café area of the building where the participants met.

Furthermore, Aliya expanded her community as a result of the digital content creation. During the project process, her Yardsville group took field trips, including one to a local university where they met with college students to learn about various school-to-prison pipeline-related resources. The group also held celebrations to share their videos and graphic designs with family and friends, and participated in fundraising events whereby they had to meet with adult donors from the city and talk about their experiences with Yardsville. In the years prior to this study, Aliya was selected to travel to Europe, to Seattle, and twice to California to speak on behalf of the work she did at Yardsville. Her trip to Europe specifically required her to discuss the injustices that face youth and the types of action that can mitigate this worldwide issue.

Aliya's Case Summary

Aliya's civic engagement pathways were developed most notably through her content creation, creativity, and community building. These pathways were especially valuable given that prior to her involvement at Yardsville, Aliya, as a homeschooled student, had felt a bit isolated and unaware of many issues, including "human rights ... littering, recycling, attendance, suspension, why it's important for kids to grow up in a family. ... Train safety" (Interview, 4/20/16). Until she started to attend the center, she did not have as much civic knowledge, and she did not realize her potential as a change agent. Therefore, her face-to-face interactions at Yardsville were critical to the development of her pathways. During one of our interviews, she shared that she would not have been able

to even sit with me had she not had opportunities to meet and talk with strangers as part of her Yardsville experiences.

The findings suggest that the content creations, as well as the creativity and community building that were part of the process, were important contributors to Aliya's civic engagement pathways. For example, the content forced her to learn more about particular civic issues. In order to create the most professional and effective product about attendance, it was important for Aliya to know information about attendance. At the same time, to develop the content, she needed room for creativity. This creativity supported her self-efficacy as she demonstrated a strong ability to think and problem solve from a design and technical perspective. Aliya's expertise with digital tools provided her confidence that she could gain employment, go to college, and make a difference in the world (Interview, 2/12/16).

Finally, Aliya made connections between her work at Yardsville and its potential to have effects after and beyond her Yardsville participation. Community building served a valuable role in the development of her civic engagement pathways, especially since she was a homeschooled student. She was provided opportunities to meet others in her city, state, country, and world with similar interests and passions related to youth issues and design. Additionally, within her Yardsville group, she developed relationships and experienced social trust with peers and mentors, a key component to civic engagement.

Janelle

They've got me involved in a lot of stuff. I was on the radio three times just being here. I really got to voice my opinion and people got to hear and understand what it was like being a teenager in [my city] (Interview, 5/20/15).

Description of Janelle and Her Participation at Yardsville

At the time of the study, Janelle was a confident, 18-year-old senior in high school who was anxiously awaiting graduation. She was an easygoing, friendly, and engaging African American young lady with long black hair, braces, and a sweet smile. I saw Janelle every Monday and Wednesday from 4:30 to 7:00 p.m. during the Design Team meetings. She came to Yardsville as both an intern and as a participant on the Design Team. As a senior with enough credits, she did not have to stay at school the entire day. Rather than “going home, going to sleep, or going home and doing god knows what,” as she explained (Interview, 1/13/16), she decided to accept the internship offered to her. As an intern, she helped around the office (e.g., she answered phones, typed, filed, etc.). During the hours of the Design Team program, she was a participant. She worked on the attendance campaigns for young children, a DVD cover for a student-produced video about school-to-prison pipelines, and a public service announcement-like advertisement designed for a website intended to promote the importance of attendance for high school students. In addition to these projects, Janelle was asked to participate in various activities that were sponsored by Yardsville and required her to speak to audiences other than the ones at Yardsville, including two radio spots and acting as a panelist in front of hundreds of people at a local university-sponsored event. The digital content creations related to these activities, as well as the activities themselves, played important roles for Janelle’s development of civic engagement pathways. These will be discussed in more detail below.

Pathways to Civic Engagement Through Participation at Yardsville

When I first asked Janelle what she thought civic engagement meant, she asked me, “Do you mean like civil? Interaction with the community?” After being asked to reflect further, Janelle suggested, “I think it is taking initiative to make a change in your community or to interact with your community” (Interview, 3/30/15). During a follow-up interview 10 months later, Janelle defined civic engagement as “Just being involved ... in community projects, volunteering ... just doing anything to try to better the community” (Interview, 1/13/16). Through her participation at Yardsville, Janelle was given tools to make the world a better place. This was made possible most notably through the content she created, her collaboration, and her communication. As will be detailed below, Janelle, like Aliya, created content that was particularly centered on civic issues such as young people’s school attendance and the school-to-prison pipeline. These creations supported pathways to civic engagement in that they required her to become aware of these particular issues.

Another way in which Janelle’s pathways were created was through collaboration. Collaboration is a civic skill that requires negotiation and tolerance, and Janelle regularly collaborated with others on each project. Additionally, Janelle used communication as a way to directly engage with her community, both through the radio waves and through an in-person panel engagement. This was a unique opportunity that afforded her the chance to share her messages in person with an audience of more than 200 people, as well as on a radio show that could have been heard by thousands of people.

Finally, community building played a role in the development of Janelle’s civic engagement pathways. This occurred through her meeting new people outside of

Yardsville, as well as the ways in which her relationships with peers and instructors inside Yardsville were fostered. Each of these technology-mediated behaviors, content creation, collaboration, communication, and community building played an important and distinct role in the ways in which her civic engagement pathways were developed.

Content creation. Janelle's content creation supported her development of civic engagement pathways in the sense that, like Aliya, she needed to learn about particular civic issues in order to create products that best conveyed the messages at hand. For example, regarding to the school-to-prison pipeline issue, Janelle was part of the team that designed a cover for a DVD about the disproportionate suspension rates between African American and White students. Out of this content creation, Janelle learned about civic issues she did not know about beforehand (e.g., racism related to suspensions, how suspensions lead to a greater likelihood for incarceration). In other words, these products supported Janelle's acquisition of knowledge related to civic issues, and, in ways that she explained to me, they made her more reflective about how she and her peers need to change certain aspects of society: "As I started to become aware of things that were going on in my community and problems that people were facing, things start to feel some kind of way ... I started to listen a lot more and pay attention" (Interview, 1/13/16). She told me that teenagers, in general, tend to be stuck in their own worlds, but "as you mature," she explained, "you grow to know it's not all about you all the time. The world didn't start when you were born." Through each of Janelle's content creations, including her work around attendance, college admissions, train safety, and the calendar for the city's public school system, she was made aware of civic issues and had to practice negotiation and

problem-solving with others, which will be discussed next as part of her collaborations and as additional contributors to her civic engagement pathways.

Collaboration. Like most of the Design Team members, Janelle collaborated with at least one other person for each of the content creations she completed at Yardsville. This included two attendance campaigns, one aimed at younger children and another one aimed at college-bound high school students. Through both of these projects and others, Janelle and her peers worked together to “willingly cooperate a shared task” (Bers, 2012, p. 12). Below, I provide one specific example of Janelle’s collaboration and how it contributed to the development of her pathways to civic engagement.

When the Design Team was asked to create a webisode about the superhero who saves young children from being late to school, it was up to the participants to decide what, exactly, they wanted to contribute to the content. One particular day, while in the midst of this project, the Design Team spent almost 90 minutes together considering a variety of aspects of this project. The group collaborated on a number of topics, including superhero and villain names; how they could make T-shirts and clocks with the superheroes on them and make money to be invested in future events; turning this webisode into a game that young children could play on their school computers; and how they could thoughtfully develop new characters’ superpowers to appeal to users (one character might appeal more to African Americans and one character might appeal more to girls). This collaboration resulted in new characters, a blueprint for a game app, rough drawings for the superheroes, and potential storylines.

During this collaboration session, Janelle served as a moderator and informed two outside guests about the purpose of the project. This session afforded Janelle

opportunities to negotiate, listen to feedback, and care about others' ideas, important factors to civic engagement that emerge out of collaborative practices. In this way, this experience serves as one example of how Janelle's use of digital tools to create content served as a way to support pathways to her civic engagement.

Communication. Another way Janelle developed pathways was through the various communication opportunities presented to her through her participation at Yardsville. As a PTD technology-mediated behavior, communication is the “the process of interchanging thoughts, opinions, or information by using technologies ... (Bers, 2012, p. 12). Janelle's reputation as a strong communicator at Yardsville landed her an opportunity to share her personal thoughts and feelings with the entire city and beyond. Below, I illuminate two examples of how communication supported Janelle's pathways to civic engagement, particularly opportunities for her voice to be heard on the radio and for public speaking that emerged from her connection to Yardsville. Worth noting here is that in each of these examples, Janelle's communication was more reliant on the face-to-face interactions afforded through her participation at Yardsville.

Communication served as a pathway to Janelle's civic engagement when, as a participant on the Yardsville Design Team, she was asked to work with a reporter from NPR on a story about the city's mass transit system and its role in students' school attendance. Janelle was asked to be the student whom the reporter would follow for a day. Janelle told me the reporter commuted with her to school one morning to better understand the challenges related to the bus system. During that process, the reporter exposed the fact that even though Janelle lived only 10 minutes from the school she attended, it could take her almost an hour to get there. Janelle and the reporter hoped her

story might shed light on the fact that the buses could be one reason why so many city students are late or absent. This story spread the message to the community, while at the same time helping Janelle to understand that the issue was important to others beyond her peer group; it was important enough that NPR wanted to do a story about it. Janelle recognized that it was an opportunity to “in a way, being engaged in my community” (Interview, 3/30/16). She saw how her voice about her own city public transit experiences might help shed light on the problems with the system, and maybe as a result of the news story, spur change. After this experience, Janelle was also invited to submit an essay to NPR to be read on-air, on the topic of her city’s unrest in April 2015. Once Janelle wrote her essay, she used the sound studio at Yardsville to record and produce the piece, and then sent it to the NPR station to be aired.

Another example of how Janelle’s face-to-face communication skills provided a pathway for civic engagement was when she publically spoke in front of hundreds of people at a local university. The topic was the inequality of suspension rates between White and Black K-12 students. During that time, the students worked on a cover for a DVD that focused on this issue of suspension rates and was produced by another Yardsville group. With its cover, this DVD was distributed to schools and other nonprofit organizations interested in the topic. According to the instructor, the goal of this project was to have the state use the materials as part of principal-training sessions, and then have the principals use them for in-school trainings.

The event took place at a local university where hundreds of people gathered to watch the Yardsville video, then hold a question-and-answer session with the panel members about what needs to be done to address the unfair treatment of Black students over White

students. Her speech was well received by the group. According to Janelle, despite her nerves about public speaking, the panel experience was another opportunity for her to learn to communicate and become prepared to engage in ways that could improve her city:

Things are the way they are because people are stuck in their same ways. No one wants to change. Everyone just wants everything to stay the same. Maybe if you were pushed out of your comfort zone, you'll [sic] be willing to try new things” (Interview, 1/13/15).

About communication, Janelle told me the following:

This is becoming like a technology world now. Mass media is taking over the whole world. You can communicate with people from all walks of life with technology, so just getting the word out there and getting what you're trying to say or what you're trying accomplish out there through media ... that's a big impact (Interview, 1/13/16).

Through her participation at Yardsville, both within the center as well as beyond the center’s walls, Janelle was afforded multiple opportunities to do just this: communicate with people.

Community building. Janelle was also afforded opportunities to build community both within Yardsville and outside it. These opportunities occurred through the icebreaker activities initiated by the Yardsville instructor and participants, field trips to local universities, meetings with visitors who came into the center, and meals shared with the rest of Design Team before each session. Each of these activities strengthened relationships in Yardsville and beyond; they also developed Janelle’s social trust, which,

according to Putnam (2000), is vital to civic engagement. In this way, community building supported the development of Janelle's civic engagement pathways.

One specific example of Janelle's community building was when she attended a meeting with the city's then-public school CEO. A handful of Yardsville participants (Janelle, Tori, and Aliya) went to this meeting, held in a city school, to learn more about the future of arts in their public school system. During this experience, Janelle and her peers had the chance to meet others who cared about this issue and the wellbeing of the city's youth. They listened to parents and teachers speak on behalf of the students, and they heard administrators explain the financial predicaments related to funding particular programs. According to Janelle, the CEO "danced around a lot of the questions" (Interview, 3/25/15). However, she was introduced to new people, and she broadened her understanding of issues related to school budgets and politics; her participation at Yardsville afforded her this opportunity to build community and develop this pathway to civic engagement.

Upon Janelle's return to Yardsville, this experience continued to build community among the Yardsville participants. The topic at hand, the city's schools and art programs, was relevant for the group, and the participants seemed to bond over their frustrations about so many city schools closing their doors. Likewise, the students were upset about their school system's policy to allow county students to attend city schools.

During one conversation about public schools around the city, students discussed which ones would close down. One student in the group said her cousin was supposed to go to [School A], but now he has to go across town. "And that school has been around forever," she said. Shortly after that, Janelle told the group that the CEO of schools

“danced around a lot of the questions.” Specifically, she said, he never answered why the city’s magnet art school has such a high enrollment of students from outside the city. She then asked the group, “how are city kids supposed to compete with other kids outside the city?” Another student in the group replied, “it’s not fair at all” (Observation, 3/25/15).

The group went on to discuss how county students have more money for music lessons and testing, for example. Therefore, they were more likely to have the grades and talent to be accepted at the art school. Together, the participants discussed these issues and shared their thoughts and feelings about the implications of certain policies for the city’s youth. Community building provided Janelle a pathway to civic engagement, both through her attendance at the meeting as well as through bonding with her Yardsville peers about the meeting’s content.

Janelle’s Case Summary

Janelle developed pathways to civic engagement through her participation at Yardsville. This participation included the content she created within the Yardsville (e.g. her Adobe projects), as well as the opportunities to meet guests who came to the CTC. At the same time, Janelle’s participation at Yardsville also included opportunities for her to practice communication skills beyond the center’s walls (e.g. her NPR appearances, her work as a panelist, and the field trip she and her Yardsville peers took to a university). When we spoke after she left for college and was not in the Yardsville program, she told me that she missed these opportunities. Specifically, she explained that compared to her time on the Design Team, when they would talk about civic issues and be involved city meetings and projects, once she went away, it was “kind of hard to have those kind of conversations” (Interview, 1/13/16). She went on to tell me that while at the time she

thought it was boring to attend some of the meetings she was asked to attend with Yardsville staff, she saw how valuable they were and how much more engaged and impactful she felt during that time. Furthermore, she understood how the public speaking skills she gained were going to benefit her for the rest of her life.

Melanie

I feel like [Yardsville] helps us express ourselves and if everybody got a chance to use technology to express themselves, people wouldn't be as angry because they would feel like people actually listen to them. ... Everybody needs someone to listen them ... and a lot of people don't have that. Technology can help people do that (Interview, 1/16/16).

Description of Melanie and Her Participation at Yardsville

When asked why she wanted to participate at Yardsville, Melanie said it was because she wanted to “be part of something ... part of the community ...” (Interview, 3/30/15). She also wanted to use the technology she heard about from Nicole, one of her best friends and a fellow Yardsville participant. Melanie enjoyed using technology. She told me that when she was younger, she used the computers at McDonald's, where her family held managerial positions, to help make posters for the restaurant. This interest in technology, coupled with her desire for community and time to spend with her friend, brought her to Yardsville.

Melanie spent about five hours a week at Yardsville. She did not live near the CTC, but she found rides or took the bus across town. According to Melanie, the travel time was worth it. Just being in the Yardsville neighborhood, she said, made her feel good: “There are a lot of colors, and it's really vibrant ... lots of art ... really pretty. Every time

I'm riding down the bridge to get here, I just get really happy ...” (Interview, 5/11/15). The neighborhood surrounding Yardsville contrasted starkly with the neighborhood in which she lived. Melanie told me that her community was not bad, but it was also “not the best.” While her neighborhood’s positive attributes included diverse cultures and ethnicities, the crime, drugs, and unreliability of her neighbors meant she looked forward to one day living in a different neighborhood within the city.

At the same time, Melanie recognized the importance of community. She talked about the need for block parties and community centers, for example, where people could “bond” and just “come together” (Interview, 1/16/16). If people from the community could spend safe and quality time together, Melanie believed, the feel of the neighborhood could change, and maybe drug use and crime would decrease.

Because of the real-life challenges she faced in her own neighborhood, she found the projects she worked on at Yardsville to be relevant and important (e.g., human rights, school-to-prison pipeline). She was an active participant in the campaigns about suspension and the importance of school attendance, and she worked on a video that focused on the city’s unrest that took place during the time of this study. Melanie felt her efforts on these projects helped her city, but more so, she said these projects helped her: “I didn’t know half of the stuff ... it’s teaching me new things every day” (Interview, 3/30/15). Below, I explain how this new information contributed to her civic engagement pathways.

Pathways to Civic Engagement Through Participation at Yardsville

When I first asked her if she had ever heard of the term civic engagement, or if she knew what it meant, Melanie responded no. When I asked if “civil engagement” made

more sense to her, she asked, “Like engaged in the community?” (Interview, 3/30/15). She explained that the only people she knew whom she would consider civically engaged were at Yardsville, including herself. At Yardsville, her pathways to civic engagement were supported mostly through her content creation, communication, and collaboration. For example, Melanie helped make board games, video games, posters, and websites that immediately addressed issues facing her and her peers in the city, and she cited these creations as examples of her civic engagement. Through such content creation, Melanie learned about new issues relevant to her and her peers and felt connected to her city in ways she had never felt before. Additionally, Melanie’s pathways to civic engagement were developed through communication, such as the video she made about the youth voice during the city’s unrest. This project required Melanie to meaningfully and effectively communicate her ideas in order to make the greatest impact on the audience; the video was shared online. Finally, Melanie’s collaboration with her peers supported her negotiation and problem-solving skills, both of which are associated with civic engagement. Specifically, Melanie worked with Nicole on the campaign for high school students. This project inspired them to collaborate around a specific font and slogan, and together they worked to convince the larger group of their ideas. Below, these examples of content creations, communication, and collaboration are further described to illuminate how Melanie used digital tools at Yardsville to support the development of her civic engagement pathways.

Content creation. As in the cases of Aliya and Janelle, Melanie, too, learned about civic issues related to the content she created for Design Team projects. Prior to these content creations, Melanie admitted she knew very little about some of the issues and

would not have necessarily selected them herself as topics of interest (e.g., attendance, suspension rates). However, “when they bring [these issues] to my attention, it interests me ... I never thought about it beforehand” (Interview, 3/30/15). She explained that she never knew parents could be arrested if their children missed too much school, for example. Such information (e.g., court cases, laws, solutions to this problem) arose as Melanie developed ideas around the attendance campaign for the younger children. When she developed ideas around the attendance campaign for high schools students, she was also surprised to learn of the correlation between attendance and college admissions. Lastly, her content creations also supported her new knowledge around inequalities related to suspension rates for Black students versus White students. As Melanie created the web advertisement for high school students, developed ideas around the attendance campaign for younger students, and shared resources about school-to-prison pipelines, she was introduced to new civic issues, laws, and solutions to community problems.

Collaboration. Yardsville relied heavily on collaboration. Out of the four months I spent there, I observed students working in isolation only two or three times. Most of the time, students shared ideas with one another, typed together, drew together, compiled audio and visuals together, and discussed issues that ranged from train safety to colleges to spring break plans. Melanie was very much a part of these collaboration practices. Like the other participants mentioned earlier in this chapter, Melanie did not work in isolation when it came to the content creations. Most of the time, Melanie worked with others, and often, the instructor asked Melanie to help her peers navigate the coloring tools in Adobe Illustrator. Only once did I see Melanie initially express disinterest in collaboration when the instructor requested her help. Somewhat jokingly, Melanie told the instructor she had

a lot on her plate and the instructor should stop asking to “use her services” (Observation, 5/18/15). Within moments, however, Melanie sat next to the other student and assisted her with the task. Below, I provide another specific example of her collaboration with Nicole on the College World advertisement.

Melanie and Nicole worked together very closely on College World, the advertisement geared toward college-bound students and the importance of attendance. To start this project, Melanie and Nicole researched colleges, reading and discussing such aspects as acceptance rates, costs, majors, locations, and demographics. Although it was not directly related to their task, this research opened their eyes to information about colleges they had never before considered. As they did this, the girls took particular interest in the fonts used on the colleges’ websites and considered how those fonts might best convey their message about the importance of attendance. This led Melanie and Nicole to research different font choices, as seen in Figure 7. They also drafted their own fonts, as shown in Figure 8; they wanted to create a completely original design.

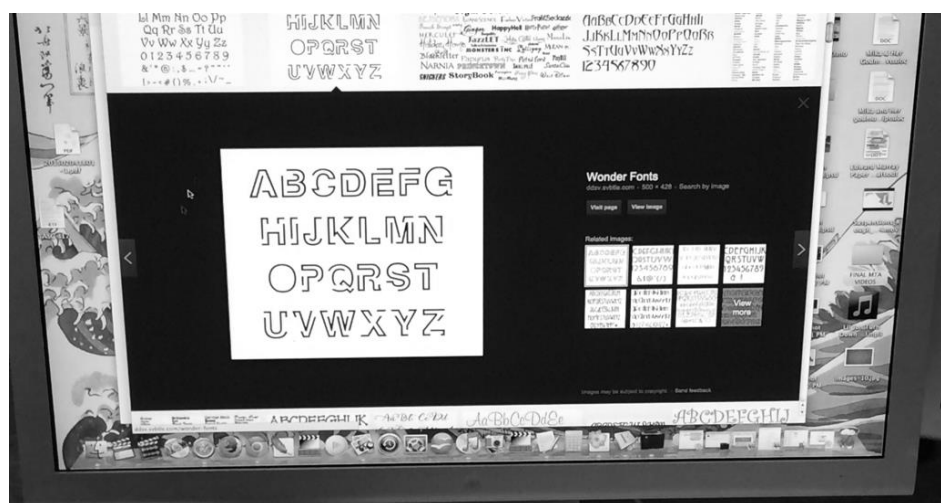


Figure 7. A lesson on fonts. Melanie and Nicole researched various font choices for the College World project.

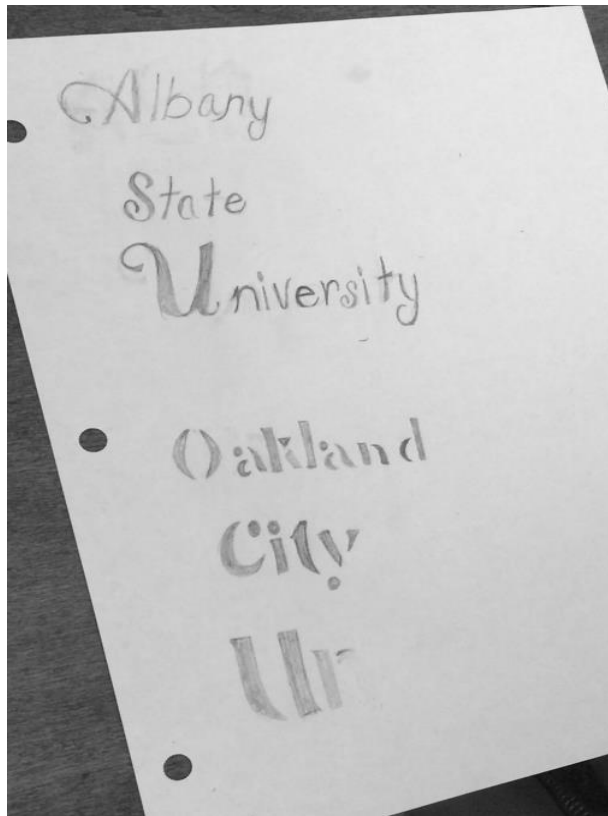


Figure 8. Melanie and Nicole designed their own fonts. They gathered ideas, then created their own font for the College World project.

While the girls simultaneously researched colleges and font options, they also discussed what they had learned at Yardsville about the relationship between attendance and student success. This conversation led to other discussions about how to best turn this information into a slogan that would appeal to their audience of high school students who want to go to college.

Together, Melanie and Nicole landed on the slogan “When you attend, your options bend.” The instructor was not convinced when the girls first shared this idea with her. Below is an excerpt from my observational field notes that highlights what took place

after this initial exchange about Melanie and Nicole's slogan; the process became even more collaborative based on the group's feedback.

The instructor opened the discussion to the group. Other students said they understand what the girls meant, and some of them agreed that it does rhyme. Other students thought it was a bit of a stretch, and that it only rhymes when you use the [city's] particular accent these girls are using. This large-group chat then led to a discussion about synonyms and dictionaries and the use of a thesaurus. It also led to the mentioning of a few rhyming websites (such as rhymezone.com). Even with all this talk, the girls said they were going to stick with their slogan; they did not want to let go of it despite the group's hesitation. Melanie and Nicole continued to work together and talk about their next steps to make the slogan better (Observation, 2/23/15). From here, Melanie and Nicole conducted more research about words that rhymed. In the end, both girls argued in favor of the slogan and eventually won the approval of the group.

This collaborative process helped Melanie and Nicole accomplish the following: they developed their own font for the project, became more informed about the colleges they were interested in attending, learned new rhyming patterns, and convinced their Yardsville peers and instructors their slogan was good, despite initial disapproval. Each of these accomplishments, which involved the use of digital tools, supported Melanie's civic engagement pathways because they required negotiation, a respect for and caring about others' thoughts and ideas, and the articulation of her own argument to the group, all critical skills related to civic engagement.

Communication. One example of how Melanie's communication supported her civic engagement pathways was when she was invited to be part of a video series focused on

the unrest that took place in the city during the time of this study. An outside organization approached Yardsville to interview young people and find out how they felt and what they thought about the events and what they might mean to the city's youth. This interview afforded Melanie the opportunity to communicate with others by sharing her message via a video posted on Yardsville's website. Here, Melanie explains:

Me and one of the other students at [Yardsville] made a video talking about how we felt about the riots and if it really helped or if it hurt and what we think should change and everything. The fact that people actually watched it and got to hear what we had to say, I feel like that kind of ... It might have affected some people, maybe some people actually listened, maybe some people didn't; but for those that it did, it could have really changed ... it could have impacted somebody in some kind of way (Interview, 1/16/16).

Initially, Melanie was nervous about being interviewed on camera. She did not like public speaking, so the idea of her face and voice being broadcasted to a large number of strangers did not appeal to her. But after one of the instructors assured her she could do it with some preparation and practice, she agreed (Observation, 4/30/15). One way she prepared was to respond, in writing, to the specific questions she would be asked on camera (e.g., do you think it is important for young people to be involved in the city's affairs? How do you think the media handled the events in the city?). Her ability to articulate her thoughts and communicate them through this video serves as an example of how her use of technology supported her pathways of civic engagement.

Another key element of Melanie's communication required her skills with the recording technology. Melanie was required to use professional-grade audio equipment

as part of this production. She learned how to manage sound interference (e.g., a helicopter flew overhead during the shoot, which created a real-world troubleshooting scenario) and video recording settings. Figure 9 shows Melanie operating the microphone and headset. She also used a boom mike during filming. These hands-on digital tools were necessary for her to communicate a message that, in part, stressed the need for African Americans to come together and change the media's portrayal of young Black youth. She also used this video as a way to encourage others to find their voices and make positive changes.



Figure 9. Melanie on set, using audio equipment as she worked on the video about the city's youth.

Finally, it is worth noting that this project required both the face-to-face environment as well as the virtual environment. The face-to-face interaction was necessary for Melanie to shoot the video and gain hands-on experience using the digital tools, while the virtual environment helped her disseminate the video. In both environments, communication helped her to learn the technical skills and share her message with others, supporting her pathways to civic engagement. As a result of this work, Melanie hoped people would, in her own words, “come together” and “build each other up” (Interview, 1/16/16).

Melanie’s Case Summary

Based on what Melanie shared with me about where she lived, how infrequently she interacted with those in her neighborhood, and how little she knew about civic issues, it was apparent that Melanie’s participation at Yardsville played a significant role in the development of her civic engagement. More specifically, Melanie gained opportunities to create content that allowed her to learn about and address important issues (e.g., challenges for young kids to get to school, the dangers of play on the train tracks, how to encourage more students to apply to college, the media’s role in distorting the truth about young African Americans). Additionally, Melanie’s communication with her video production allowed her to share her message with others. Finally, her collaboration with Nicole supported her negotiation skills and her ability to work with others to respond to feedback (e.g., when she and Nicole had to work together to argue their point against the group’s disapproval of their slogan). In these ways, Melanie’s content creations, communication, and collaborations strongly supported the development of her civic engagement pathways.

Nicole

[Yardsville] makes me want to ... make my voice heard within the whole city, to everybody. It makes me want to make videos or just talk and give my opinion about what's going on and what's right and what shouldn't happen. Things like that. It made me want to speak more (Interview, 5/11/15).

Description of Nicole and Her Participation at Yardsville

When I first met Nicole in February 2015, I could tell from her smile that she was optimistic and kind. She was 16 years old at the time, and she liked to dance, draw, and volunteer. She also enjoyed time spent with her mom, dad, godmother and two brothers, one of whom was also an active participant at Yardsville. She first joined the Yardsville Design Team to earn community service hours and, as she put it, “to gain an experience that I never had or never been able to do in school” (Interview, 3/30/15). She enjoyed her participation at Yardsville, and it was obvious her peers and instructors enjoyed working with Nicole, as well.

Yardsville was somewhat of a home away from home for Nicole. Her mom worked across the hall from Yardsville, and her best friend Melanie was also a participant, so this made the center a fun and convenient place for Nicole to spend time, usually at least six hours a week. During those hours, she frequently partnered with Melanie. Together, they brainstormed and pitched ideas, used Adobe Photoshop to import digital images, and attended Yardville events, such as family get-together nights. Nicole admitted that as much as she liked the technology-driven and public speaking projects she and the others worked on at Yardsville, she had no interest in graphic design as a career. Rather, she

planned to study hematology and possibly keep Yardsville-like work “on the side” (Interview, 3/30/15).

Nicole spoke about the need to strengthen neighborhood relationships, young people’s attitudes, and her city’s overall reputation, and she believed this would require more communication. When asked how communication could strengthen communities, she described a vision of

older people with younger people ... communicating about their future ... what they want their city to look like ... what kind of life they want to live and how to do that. Uplifting conversation, so inspiring conversations, getting them to do things, to actually do things (Interview, 1/16/16).

Nicole’s participation at Yardsville provided her to the tools and experiences to potentially facilitate such conversations.

Although Yardsville provided Nicole a multitude of opportunities to support her civic engagement, which will be detailed below, it is important to note that she was active in a variety of civic and volunteer activities prior to her attendance at Yardsville. For example, Nicole told me that she and her family regularly volunteered with an organization in Florida that provided vacations for families with children who had life-threatening illnesses. She also used to volunteer at a camp for children with disabilities. Furthermore, she said she would sometimes help out at her mom’s office and feed homeless people on Saturdays. But “other than that,” she told me, “I don’t really consider myself civically involved” (Interview, 3/30/15). Unlike the other participants in this study who identified far fewer examples of civic engagement activities and still considered themselves to be civically engaged, Nicole seemed to frequently participate in civic

activities but did not see herself in that way. It was not until she considered more closely how she and her Yardsville peers worked together to create meaningful and relevant content that she reimagined herself as an engaged young person. Examples of this work are detailed below.

Pathways to Civic Engagement Through Participation at Yardsville

Nicole did not initially see herself as civically engaged. After some prompting, however, she did identify ways she civically engaged through her work at Yardsville, including the campaign on school attendance and train safety. Her content creations around these campaigns made her more aware of civic issues. Additionally, her collaborations with Melanie and others supported her civic engagement pathways in that she learned how her individual contributions were needed to complete projects, like the attendance campaign for young children. In addition to content creation and collaboration, Nicole's community building supported the development of her civic engagement pathways. Her participation in the icebreaker activities, field trips, and meetings with various people outside Yardsville illustrated how her participation at the CTC helped Nicole build community; this led to her feelings of connectedness with the group. Below, I detail how these experiences supported the development of Nicole's pathways to civic engagement, most notably through content creation, collaboration, and community building.

Content creation. The process of content creation supported Nicole's civic engagement pathways. For example, her projects required her to learn about the issues at hand, many of which were previously unknown to her. This included her new realization about the impact of student attendance on one's future, as well as the information she

learned about colleges through her work on the web advertisement (Interview, 3/30/15). She said this project also informed her about college tuition. “I never really looked into too many states, but it surprised me which [states’ tuition costs] were higher than others” (Interview, 3/30/15). This is an example of how Nicole’s content creation (in this case, the web advertisement for high school students) provided her an opportunity to learn about pertinent issues relevant to her and high school-aged peers.

Another example of how Nicole’s process supported her civic engagement pathways is how it led to discussions around civic knowledge. One of these discussions was about the city’s mass transit system and how it presented obstacles for young children and parents who tried to be punctual in arriving at schools. The group had additional conversations around access to clean clothes and food, and the challenges that face families who need to establish morning routines, as they developed the Be On Time campaign to promote young children’s school attendance. Like the other participants, Nicole was also exposed to new knowledge around school-to-prison pipelines as she and her peers worked on the content for what they called an Info Playlist—a list of resources that provide information about a number of factors (e.g. disparities in special education programs for White students vs. African American students) that lead to higher drop-out rates and suspension rates for African Americans.

Nicole’s content creations also supported specific technical skills; for example, she spent many hours navigating Adobe Photoshop. As shown in Figure 10, one of her primary responsibilities for the Be On Time campaign was to convert hand-drawn pictures into digital images. This process required Nicole to gain an intimate knowledge of the digital tools. The first few times she converted images, Nicole required some

assistance, mostly from Tori, another study participant. However, Nicole eventually became proficient with Adobe Photoshop and worked quickly. This skill came to mind when Nicole said she could make posters as a way to make others aware of issues in her community. Although she did not actually make the posters, she talked about she could use her skill with Adobe products to create those posters.

Collaboration. Another component in the development of Nicole's civic engagement pathways was collaboration. Specifically, Nicole collaborated with other Design Team members to develop each of her projects, such as the web advertisement on which she worked with Melanie. This project required the girls to work through their word choices and design issues together, as well as to convince the larger group of their slogan's value.

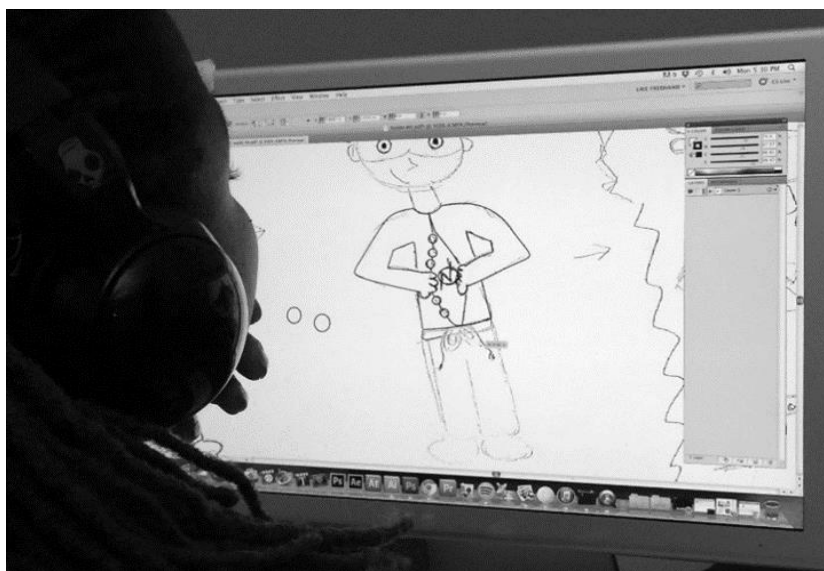


Figure 10. Nicole working in Adobe Photoshop. She traced over a drawing completed by another Design Team student.

In addition to collaborating with Melanie on the College World project, Nicole worked with the large group on assigned tasks around the Be On Time webisode. Some participants wanted to write scripts, while others wanted to act, draw, edit the recordings,

or produce the final video. The Be On Time project depended on each participant's contributions. As shown in Figure 10 above, one of Nicole's tasks was to use the digital drawing tools in Adobe Photoshop to replicate the drawings and add color to them; they would eventually become animated in the webisode. She enjoyed working on this task, and she felt confident with the work she eventually passed to her peers for the animation and production stages.

Community building. Nicole's participation at Yardsville provided her opportunities to build civic engagement pathways through community building. These opportunities included the group's frequent icebreaker activities, visits with members of the community (e.g., individuals from some of the city's nonprofit organizations), and field trips to two local universities. This sense of community was important to Nicole. She told me of her vision for her city,

It's important having communities actually coming together. You could have block parties or anything, just something where everybody supports each other, or just volunteering as a community or as a neighborhood together and providing a better way for our children to do different things (Interview, 1/16/16).

Nicole's participation in Yardsville icebreaker activities and mealtimes, for example, afforded her opportunities to bond with those at the CTC and to work together to better her community in unique ways.

One icebreaker activity that strengthened the group's trust was called "Don't Touch the Lava." Nicole and her team members were active participants, despite their initial hesitations. The purpose of the activity was for the team to work together to cross the center's courtyard without touching the grass. Figure 11 shows the group trying to use

the cardboard, the only resource they had to help them to get across. Nicole was always enthusiastic about these types of activities, and this day was no exception. She and the others discussed their options, benefitted from almost 30 minutes of trial and error, physically relied on each other (e.g., holding hands, lifting each other across the grass, sliding the cardboard together), and talked constantly to figure out how to accomplish the goal. Throughout this activity, the participants laughed, literally held on to one another, and encouraged one another.



Figure 11. “Don’t Touch the Lava.” Nicole and others participated in an icebreaker activity meant to strengthen the group’s relations.

Nicole’s community building extended beyond Yardsville when she and the others went on field trips, were introduced to individuals and organizations from outside Yardsville who came to the CTC to speak about different projects, and participated in

fundraising and family events that included a variety of people from the city where Yardsville is located. One specific example of how community building occurred with individuals outside of the CTC was when a group of university students came to Yardsville and worked with the Design Team on the Info Playlist about the school-to-prison pipeline. While this project introduced the Yardsville participants to new knowledge around civic issues, it also fostered relationships between them and the university students. For example, the university students played a game with the Yardsville students, shared their school experiences, and talked about their social lives (e.g., music and movies). In this way, Nicole expanded her social network and she was able to interact with people who shared similar interests; this has been shown to be a contributing factor to the development of civic engagement pathways (Putnam, 2000).

Nicole's Case Summary

Nicole's participation at Yardville included the technology-mediated behaviors of content creation, collaboration, and community building, which contributed to her civic engagement pathways. As pointed out in Chapter II, the literature has suggested that when young people have opportunities to acquire civic knowledge and collaborate with others, they are more likely to become civically engaged (Larson, 2007). Through her content creation around attendance and the school-to-prison pipeline, for example, Nicole learned about issues relevant to her and her African American peers, who often face greater challenges when it comes to school attendance and academic achievement. Nicole also had the opportunity to collaborate with peers and instructors on different projects, such as the Be On Time webisode and college website advertisement. These opportunities supported her skills around negotiation and teamwork. Finally, Nicole built

community within Yardsville (e.g., through icebreakers) as well as beyond the CTC (e.g., when university students came to Yardsville to discuss the Info Playlist project).

Although Nicole had prior experience with civic activities, she claimed her time at Yardsville provided her unique opportunities that inspired her to remain civically active in the future.

Tori

[Yardsville] has enabled me to go out and help other students who probably are struggling with it [Adobe Illustrator] or who probably want to go into the field, but are too scared because they're not understanding it or they're not getting it. But luckily, [Yardsville] showed me and I can help them and show them how to do it (Interview, 1/20/16).

Description of Tori and Her Participation at Yardsville

At the beginning of the study, Tori presented as an 18-year-old young man. Over the course of the study and in the months that followed, Tori transitioned from male to female. Because of this timing, I was not quite sure which pronoun to use when I wrote about Tori. When we met, her physical appearance was unique and a bit ambiguous. She had pretty blue dreadlocks and piercings, and she was well-dressed; her look and conversation topics (e.g., she would sometimes talk about fashion, hair, and nails) were not typical for an 18-year-old boy. Yet, Tori's peers and instructors used "his" and "he" to refer to her, and Tori often used male pronouns to refer to herself in our interviews from February to May 2015. While this confused me, I did not feel comfortable enough to ask Tori for clarification, so I also used male pronouns in my notes about Tori.

It was not until I conducted my follow-up interview with her in January 2016, approximately eight months after the initial study period, that I felt our relationship was such that I could ask directly about her gender and preferred pronouns. She told me that the months I spent at Yardsville coincided with the exact timeframe she became earnestly interested in transitioning from male to female. Only a few weeks prior to our January 2016 meeting, she fully committed herself to this process, and on the morning of our final interview, she went to the doctor and officially started her hormone replacement therapy.

When she walked in the city café where we met that day in January 2016, she beamed with happiness. Her hair was longer, her eyelashes were thicker, her lips were fuller and red, and she carried a purse. She was a young lady. Tori told me how happy and relieved she was to know her outer physical appearance finally matched the inner person she had felt like for years. She explained that from the time she was young, she knew she was different and she knew the challenges involved:

and then you know your parents don't want you to go that way, so they tend to put you with ... like if you're a girl trying to turn lesbian, they're going to put you with a lot of girls toys and priss you up. If you're a guy becoming gay, they're going to put you with a lot of boy toys to try out some basketball and stuff that they do (Interview, 1/16/16).

It is important to describe Tori's transition here because it was clear that her identity as a transgender person played an important role in her participation at Yardsville and her thoughts about future civic engagement. To start, she felt comfortable at Yardsville; people treated her with respect there, and she trusted those around her. As someone who was "different," Tori especially valued this feeling of acceptance. At the same time, she

learned the technological skills necessary to help others who, like her, have been the subject of bullying and misunderstanding. She told me that she hopes to become a documentarian and use the videography and design skills she learned at Yardsville to promote love and acceptance.

Tori played an important role in my entry into the Yardsville site. On the first day of the study, I was nervous the students would not want to talk to me. Two students—Tori and Janelle—immediately put my nerves to rest by bringing me into their discussions about spring break, prom, graduation outfits, and college plans (topics typical for students four months away from high school graduation). At Yardsville I most often sat next to Tori and Janelle, and they were always quick to include me and let me know what was going on that day, both at the center and in their own lives. Tori was a bit shyer than Janelle; however, as I got to know Tori, I learned a great deal about her life and the pathways that were created for her through her involvement with video production, her attendance at Yardsville-sponsored events, her interaction with members from the community, and how she bonded with her peers at Yardsville.

Tori was motivated to attend Yardsville because she was looking for something to put on her college resume. She was selected for an internship at Yardsville based on her knowledge of Adobe Illustrator, and, like Janelle, participated as both an intern as well as part of the Design Team. As a Design Team participant, she worked on the attendance campaigns for pre-K, kindergarten, and high school students; as an intern, she helped the Yardsville students and staff use Illustrator. Furthermore, after the Design Team program ended in May 2015, she accepted an apprentice position with the Yardsville Production

Company. As an apprentice, she edited and produced client-based videos. For example, a health care company hired Yardsville to create an advertisement.

Tori learned how to use Illustrator at her public city high school, a magnet school for technology. There, she was introduced to graphic design tools and given the opportunity to become certified in different programs (e.g., Word, PowerPoint, Excel). She chose Illustrator, but the certification process wasn't easy; she found the test, which assessed her knowledge of the locations and functions of various buttons, to be difficult. She explained, "they didn't ask you to draw anything because not everybody's like that good" (Interview, 1/20/16). In this way, she would argue the certification process had less to do with practical applications and was more focused on the navigation of the tools. It wasn't until she started to attend Yardsville that she better understood how these tools could be used for real-world applications, such as the animation and web advertisement projects she and her Yardsville peers worked on during the course of this study.

In addition to her regular Monday and Wednesday shifts between 4:30 and 7 p.m., Tori also attended three Yardsville-sponsored events outside the center. During this study, she attended a February 2015 town hall meeting about keeping arts in the public city schools; she went to a local university to support Janelle, who spoke on a panel about disproportionate suspension rates for Black students; and she went to another university where she worked with college students to create an Info Playlist of resources about suspension rates and other school-related inequalities, as described in Nicole's section of this chapter. Overall, Tori was a very engaged participant at Yardsville.

Pathways to Civic Engagement Through Participation at Yardsville

Initially, Tori was unfamiliar with the term civic engagement. Even after hearing another participant define it as “interaction with the community,” (Interview, 3/30/15) Tori reiterated the fact that she had not heard of the term. When I affirmed for Tori and the other participant that “interaction with the community” is part of the civic engagement concept, I asked what she thought that phrase meant to her. She responded shyly: “Responsible, but also being courteous to your neighbors that live around you. If you’re going to a place after school ... and you don’t have to do stuff to wreck their property” (Interview, 3/30/15). When I asked her if she thought of herself as civically engaged, she hesitated: “In ways, yes, but not all the way.” Compared to the others, Tori spoke about her engagement in a more personal way, more one-to-one. She explained that she was courteous to people (e.g., she did not ruin neighbors’ yards) and she didn’t “judge people by their cover” (Interview, 1/20/16). For Tori, civic engagement was more about mutual understanding and respect, and she found these elements at Yardsville. Tori explained that at Yardsville, “everybody has open arms” and “they really do care” and “they’re not going to give up on you as quickly as other people will” (Interview, 1/20/16). Yardsville supported her and helped her believe in herself. At the same time, her participation at the CTC afforded her opportunities to develop pathways to civic engagement, most notably through her content creation, her community building, and her collaboration. For example, like the other participants described above, Tori was made more aware of issues around attendance and the school-to-prison pipeline. She also learned more about the city’s arts budget and statistics around bullying. Civic knowledge is an important component of civic engagement, and Tori’s content creations supported

the acquisition of this knowledge. Additionally, Tori's collaboration at Yardsville contributed to her civic engagement pathways in that she learned how to work with others, compromise, and support her peers' and instructors' digital skills, mainly using Adobe products. In one instance, Tori's assistance became so valuable to the group that the instructor called her "Mr. Illustrator" (this was before Tori transitioned). Her expertise made her a natural member of each group to support their work. Finally, community building played a role in Tori's pathway development. As mentioned above, she met new people whom she felt respected and encouraged her. She was also able to work with various individuals who had invested in the city's urban youth. Below, I detail these technology-mediated behaviors, content creation, collaboration, and community building, to show how they contributed to Tori's pathways.

Content creation. For Tori, content creation played a role in the development of civic knowledge and her technical skills. Through her participation at Yardsville, Tori discovered a gap in her knowledge regarding community-related issues. For example, Tori was asked to represent Yardsville at a town hall meeting in her city about the school board's proposed cuts to the arts programs in the city schools. Tori admitted she knew nothing about this problem prior to being asked to attend the meeting, and that she and others "don't know what's going on half the time ... so it's nice to hear" about city budgets and how they affect the arts programs in public schools (Interview, 1/20/16). In this way, she gained civic knowledge. Tori also gained new civic knowledge when she and her Yardsville peers worked on a DVD cover about bullying, and when she worked on content around the school-to-prison pipeline. This content creation, in particular, required Tori to watch and listen to university students present information about African

American special education students in K-12 settings. These presentations focused specifically on the different levels of support for White students versus African American students; according to the university students' discussion, White students received more comprehensive care. This led to the argument that African American men in particular were more at risk of incarceration, since according to the university students, a high percentage of incarcerated individuals had been diagnosed with learning disabilities. This, too, was new information for Tori.

Tori's content creation also supported the development of her civic engagement pathways because of the technical skills she gained. For example, Tori's participation at Yardville gave her hands-on experience with video production, sound-clip creation, the use of a sound booth, and the manipulation of digital images and video. Each of these tasks involved the most current tools. Up to that point, she had only used Apple's Final Cut Pro, but Yardville introduced her to Adobe Premiere, which, according to Tori, was an "eye-opener" and exciting to use. She told me that she could use these new skills to make commercials: "Commercials will raise awareness ... they're good things to grab people's attentions" (Interview, 3/9/15). At the same time, she believed she learned the skills she needed to be a documentarian and tell the stories of LGBT students. These examples highlight how Tori's content creation supported the development of her civic engagement pathways by making her aware of civic knowledge and by providing her hands-on experiences with digital tools that she could use to engage civically in the future.

Collaboration. The relationships, video production tools, and skills to use those tools were not the only elements that contributed to Tori's civic engagement; collaboration,

too, supported the development of her civic engagement pathways. The instructor explained to me that one of the main goals of the Design Team was to teach students about the entire process of design, including the need to understand their audience and research the related problems. She said of the students about their products, “they need to come up with more than one idea, and they need to get feedback on that idea, and they need to continue to refine it” (Interview, 5/29/15). I observed Tori and her peers at Yardsville regularly discussing principles of digital design (e.g., the use of font, color, images) as well as software programs that were used by professionals at the time of this study (e.g., Adobe Premiere); these discussions always took place in a group, and students always shared their ideas with one another. Through these collaborations, Tori learned more about and shared responsibilities for video production, the creation of sound clips, the use of images, and script writing. Not once did she work in isolation.

One of projects on which Tori collaborated with the entire group was the Be On Time attendance webisode. Tori was part of the team that wrote the animation’s script. However, before she and the group wrote the script, they considered the story’s settings, characters, plot, and resolution. They brainstormed together to write out and talk through the ideas. For almost every product, the Yardsville Design Team community shared their ideas so they could have the greatest impact on their young audience. Often, Tori took notes at the board during group brainstorming sessions and helped facilitate collaborations around the projects.

Beyond the specific roles she played on Design Team projects, as the resident Adobe Photoshop expert, Tori was often called on to collaborate with others and support their use of technology. Specifically, Tori helped Janelle use the digital pen when Janelle

worked on the web advertisement; she assisted Melanie and Nicole when they were unable to connect lines in their Photoshop drawing; and she supported another Yardsville member, Jessica, in animating one of her objects for the College World project. In each of these instances, Tori listened to her peers' intentions and helped them navigate the technology. The opening quote of Tori's section highlights the importance of her collaboration for the support of others' work, which ultimately contributed to the development of her civic engagement pathways.

Community building. In addition to content creation, Yardsville opened doors for Tori to meet new people and build new relationships. According to Bers (2012), the technology-mediated behavior community building “has a strong relationship with an orientation to contribute to society by using and inventing new digital tools to solve social problems” (p. 12). Tori built community with her Yardsville peers through their content creations (some of which are detailed above); their shared meals before the start of Design Team sessions; and icebreaker activities such as “Don’t Touch the Lava,” the number game, “The great winds blow,” and “nothing is better than ____” (students filled in the blank). These activities allowed Tori, like the other participants, to get to know her peers in unique and fun ways.

Tori also built community with people who were not part of Yardsville, including guests from nonprofits, the city school system, local universities, and independent small businesses. Two guests, for example, talked to the Design Team group about entrepreneurship and the importance of believing in oneself. One of the guests was born in Colombia, and he explained his journey as an immigrant to becoming a college graduate and, eventually, founding his own company. The other guest spoke to Tori and

the group about the importance of education and internships. These guests also discussed techniques and technologies related to design; for example, the owner of the website that hosted the College World ad spoke about animations and the effective use of hyperlinks. These community-building opportunities contributed to Tori's civic engagement in that they provided opportunities for her and the others to see what is possible with regard to careers and applications of digital skills.

Community building also supported Tori's civic engagement pathways in that it allowed her to participate in conversations about civic issues with people outside her normal circle. Below is an excerpt from my observational field notes on the day the two guests described above visited the CTC.

For almost the past 35 minutes, the two speakers engaged in a conversation with the group. The conversation began with the one woman asking the students questions about how they thought they could impact the negative images/thoughts/opinion of young African American students. She asked them about [the] media's role in perpetrating the racial divide, and she wanted to know how [Yardsville] might be able to combat such negativity.

During this exchange, Tori was one of the only participants to speak up. She said, "We need to stick together to get our message out." Tori also supported and agreed with the ideas her peer (Melanie) shared about creating a website that only showed the "good things kids do in the city" (Observation, 4/15/15). The open discussion around the guests' question was made possible because of the open attitudes and honest exchange of ideas that exist when there is social trust (Putnam, 2000)—a critical component of civic engagement.

Tori greatly valued this community building. She told me she could talk to the instructors anytime, about anything; she could use the equipment and computers to edit her own films, when the time came; and she could continue to learn more about her own city as long as she continued to work with Yardsville. In fact, she specifically told me she planned to keep in touch for a long time because, “when I make my documentaries,” she said, “I want to donate and give back to every organization that helped me, because they were very good organizations” (Interview, 1/20/16). The way she spoke about Yardsville, suggested a comfort and trust with the people she met. These examples of community building highlight the support Tori was given at Yardsville. This support, both in terms of social trust (Putnam, 2000) and “connectedness” (Lenzi et al., 2013), is a contributing factor to civic engagement.

Tori’s Case Summary

Tori’s pathways to civic engagement were supported through her content creation, collaboration, and community building. Through each of these technology-mediated behaviors, Tori developed dispositions and skills that may have already influenced her future aspirations to be a documentarian. In other words, her motivation to engage civically seemed related to her confidence around her videographer skills. Initially, she came to the center because of extrinsic motivation: to earn service-learning hours and add something she thought would look good on her college applications and resume. When she and I first spoke about her motivation to attend Yardsville, she never mentioned her transgender identity and/or the ways in which she planned to use technology to help others who experienced the same challenges she had faced as a transgender person. In this way, I believe her content creation, collaboration, and community building at

Yardsville supported an intrinsic motivation to build on the civic engagement pathways that were initiated while at the CTC.

Epic Explosion

Well, I can use some 3-D printing to help me quicker. It will solve the problems by making inventions. It will be a big help. We could have an emergency thing.

Like a wristband. Let's say that, connected to the computer. It could see your heart rate or something (Interview, 5/26/15).

Description of Epic Explosion and His Participation at Kingston

When I first met Epic Explosion at the Kingston CTC, he was a shy, small 13-year-old African American boy with a warm smile. A regular attendee, he was one of the quieter participants and usually kept to himself. He often sat at the same table each session and primarily interacted with the same boys. From my observations, he did not appear to be wild or frenetic, and thus I found his choice of “Epic Explosion” as his pseudonym to be an interesting one. After a few weeks, though, I began to see a pattern. The digital characters he made, the videos he watched, and the types of games he played and wanted to create all had the same theme: violence. They all involved some sort of weaponry, blood, and hitting or killing. Most of his work included a sword of some type, some blood, and conflicts between robots and aliens. In this way, the name Epic Explosion represented his affection for (at least virtual) force and aggression. While I did not see this in his real-life personality, his digital life at Kingston reflected a different persona.

When I asked Epic Explosion why he wanted to participate in Kingston’s Maker Program that included 3-D printing, game and web design, and interactive electronics, he

said he wanted to “make better stuff” like “comic strips ... 3-D printers and games” (Interview, 3/12/15). He explained that at home, he liked to draw comics by hand, but he thought using the computer would allow him to do more with the animations and design. Additionally, Epic Explosion wanted to learn how to make robots and flying helicopters. He told me he once belonged to a robotics club, so he knew how to program a bit, but overall, he did not feel confident with his website coding or game programming skills, and sought to improve them while in the program.

Although he did not have the opportunity to make the helicopter he spoke about during the time of the study, Epic Explosion learned how to use a graphic design software tool, Inkscape, to create a robot that was imported as a character in his Scratch game. He also used a program called Tinkercad to 3-D print a mouse-like object that he used in conjunction with his Scratch game and a Makey Makey set. With each new content creation, Epic Explosion demonstrated new competencies related to technological fluency and grew more confident and thoughtful about how his new skills could one day be put to use outside of Kingston.

Additionally, Epic Explosion met new people through his participation at Kingston. He told me, “If I didn't come, I probably wouldn't be friends with them” (Interview, 5/26/15). This connection to people he would otherwise not have had the chance to meet was important in the development of civic engagement pathways because his social network expanded, particularly to include others who shared his interests; this is an important component to civic engagement (Larson, 2007). As a result, community building emerged as the behavior that most supported the development of Epic Explosion's civic engagement pathways. I also noted and identified other behaviors as

ways in which his civic engagement pathways could have been developed, and will discuss these below.

It is important to note that of all of the study's participants, Epic Explosion's pathways to civic engagement were the least obviously connected to civic engagement. He was not able to articulate a definition of civic engagement, nor did his use of technology (e.g., his creation of weapons, bloody robots, and aliens) reflect the most civic attitudes. Furthermore, no evidence existed to support a development of, or shift in, Epic Explosion's civic identity.

This said, below I present data from Epic's participation and experiences at Kingston and stress their role in the support of "routes to..." (i.e. pathways) civic engagement pathways. The literature reminds us that in the absence of opportunities, civic engagement is not as likely for urban youth compared to white, middle class youth. Therefore, these pathways are still included to highlight the ways in which his participation at Kingston was valuable for its potential to open up opportunities for eventual civic engagement.

Pathways to Civic Engagement Through Participation at Kingston

Epic Explosion was the only participant in this study who could not articulate a definition of civic engagement without a great deal of assistance; his initial response was "probably something to do with computers" (Interview, 4/16/15). I asked him to consider the word "civic" and think of another word that resembled it; he responded, "cyber?" After I inquired about his understanding of the word "civil," Epic Explosion responded, "a civilization probably. Being nice in a civilization ... like doing their traditions. ... When people from other countries meet up together" (Interview, 4/16/15). I suggested

that civic engagement has to do with working toward a common goal to fix a problem in a community, and asked him if considered himself or anyone he knew civically engaged. Epic Explosion's examples focused on helping: He identified "people on TV though who help a lot," and reported, "I helped my brother complete a video game once ... and helped my friend take apart a computer, too" (Interview, 4/16/15). He also told me that through his advisory class at school, he picked up trash and cleaned snow off people's cars. Finally, when asked to identify issues he would fix, using technology, if he were able, Epic Explosion proposed salient ideas directly linked to his neighborhood community. He described how he could create trash cans using the 3-D printer to fix the littering he sees around his neighborhood, and how he could relieve crowding on the city buses by creating some type of double-decker bus using a machine. Epic Explosion also suggested creating a helicopter that could bring supplies to people who are hurt.

Although Epic Explosion did not have the opportunity to develop these items, he was afforded opportunities to practice technical skills that could, one day, support these creations. These skills included coding and 3-D printing, for example. According to Kahne and Middaugh (2009), urban youth have been shown to be less likely to have opportunities either at home or school to use technology in these ways; Epic Explosion also told me this was the first time he had the chance to use digital tools such as the ones he used at Kingston. In this way, his content creations exposed him to new technology and technological applications. Furthermore, Epic Explosion was introduced to new means of communication. He learned about Tackk and Scratch, and how, through those tools, he could share his work with others outside Kingston. Lastly, Epic Explosion's participation in the Showcase event supported this community building, and thus

supported the development of civic engagement pathways. Below, I will explore each of these technological behaviors: content creation, communication, and community building.

Content creation. Epic Explosion's content creation, itself, did not directly align with civic issues (as did the content at Yardsville). Nor did he articulate any direct link between his content creation and civic issues. However, the processes and skills around the creations are recognized here as ways Epic Explosion developed civic engagement pathways. In other words, his content creations afforded him opportunities to learn technical skills, such as 3-D printing, that could support intentional civic engagement in the future. The first item he 3-D printed was a small quilt square like the ones shown in Figure 12. To create this content, EE learned, through a lot of trial and error, how to use the software Tinkercad. He also needed to understand the 3-D printer itself; the instructors explained the various components to all students.

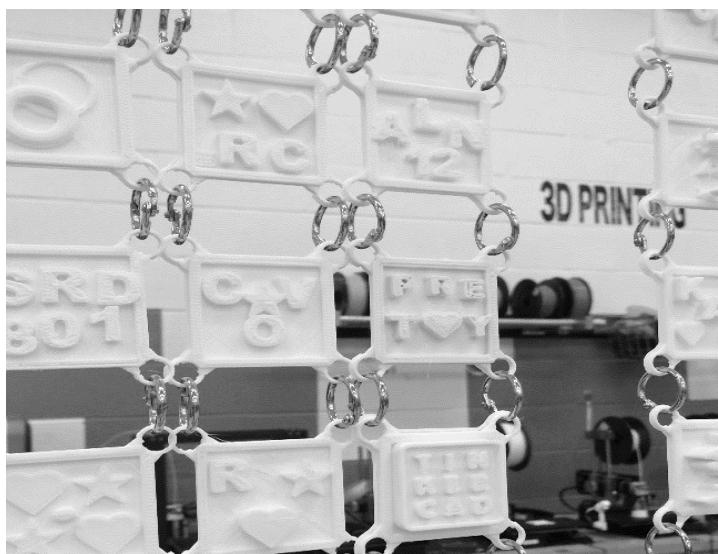


Figure 12. 3-D printed quilt squares. This was the first 3-D printed project Kingston participants completed.

While his 3-D printed items were not aligned to civic issues, Epic Explosion did say that 3-D printed trash cans could mitigate the littering problem in his neighborhood. This statement suggests he made connections between the possibilities of his digital tool use and its role in the future.

Many of Epic Explosion's other content creations required multiple layers of technical knowledge. For example, before he created his Scratch game, he used Inkscape to develop a character for it. Figure 13 shows his character, named "Fallen Bandit." When asked about this character, Epic Explosion responded with excitement. He was thoughtful about how to equip the robot with "interactive weapons ... that makes [sic] cool sounds" (Interview, 5/26/16). His voice was noticeably animated when he explained his vision for the robot, complete with the gauntlet; he could not wait to scare other people with his games. He admitted, "I want to scare myself, too. It's going to be awesome" (Interview, 4/16/15). He felt accomplished and proud of his work, and always looked forward to how he could build on each project.



Figure 13. Epic Explosion's Fallen Bandit. He created this character in Inkscape and then imported it into his Scratch game.

As just mentioned, Epic Explosion's content creations brought him a sense of accomplishment and competency. This was most evident during the final week of his participation at Kingston, as he prepared for the final Showcase event, which I will explain in more detail in the community building section below. However, with regard to content creation, it is important to note that Epic Explosion pulled together the various technical skills he practiced throughout his time at Kingston. Here are two excerpts from my observations of the session before the Showcase event:

[Epic Explosion] is working on a few different tasks right now ... He wants his character to stand up on its own, so he wants to 3-D print a thicker version.... He also needs to figure out how to thread a piece of string through the 3-D printed bow. I asked him what was going to do. He said he just wants to "think about the whole idea for a second" before he puts holes into anything (which is what he was thinking about doing for a brief moment).

[Epic Explosion] is now using Scratch to record his voice. His idea was that when someone touches his character, a particular sound will be made.... [Epic Explosion] decided to glue some aluminum foil to his "Orc bandit" (Orc is like an ogre), and that's where he will attach the Makey Makey (Observation, 5/26/15).

During this 70-minute period, Epic Explosion demonstrated his ability to think through problems (e.g., the 3-D printed items were not the right thickness) as well as work through the technological steps (e.g., using Scratch to record his voice). Bers (2012) argued that content creation supported competency, an important trait for those who wished to contribute to society (Lerner, 2004).

Communication. Epic Explosion's participation at Kingston afforded him opportunities to communicate in ways that were new to him. More specifically, Epic Explosion was introduced to digital tools that allowed him to communicate with individuals outside the Kingston CTC. One tool made available to him was Tackk. This was a website where people can post images of content creations, both digital and non-digital, and comment on and ask questions about one another's work. Additionally, Epic Explosion and his peers at Kingston were required to use Scratch, an online space where people could create and share games. Communication was an important part of Kingston's creation process. During one of the sessions, the instructor said, "If you don't share it, it doesn't exist" (Observation, 2/19/15).

For Epic Explosion, this idea of sharing online was new. He told me it "surprised" him to see his work online. He liked to see people's comments on his Fallen Bandit Inkscape project, as shown in Figure 13. He shared this content on Tackk, and although he admitted he did not check the comments often, he liked doing so (Interview, 4/16/15).

Additionally, Epic Explosion was taken with the idea that others could see his game and its Fallen Bandit character on Scratch, as shown in Figure 14. On Scratch, individuals could ask Epic Explosion questions about how he made the game. Likewise, he could have asked others how they made their games. During my time with Epic Explosion, I did not see him use this feature on Scratch, but he was made aware of its potential to be a communicative tool, like Tackk. These websites' features were new to him, and they supported the development of his civic engagement pathways by opening new ways for Epic Explosion to think about communication.

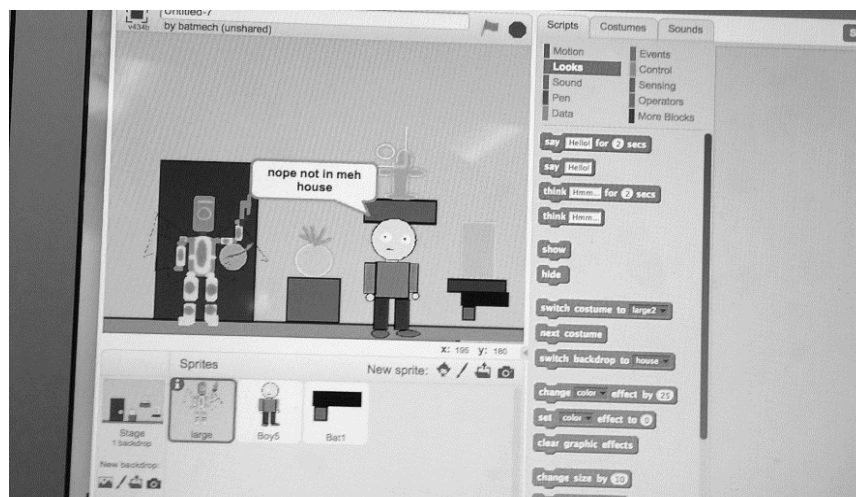


Figure 14. Epic Explosion's Scratch game, into which he imported his Fallen Bandit character.

Community building. Community building is a key factor in civic engagement. Research has shown that in the absence of social trust, civic engagement is not likely (Putnam, 2000). I would argue that Epic Explosion's participation at Kingston allowed him to build community with his Kingston peers as well as with people outside of the CTC. This became evident as I watched his interactions with people at Kingston evolve. As the weeks passed, I noticed that Epic Explosion asked questions more frequently and seemed more playful with those around him. Although he was initially shy, over time I noticed a shift in his willingness to ask for assistance; for example, when he was stuck on his Scratch game, when he could not get the Play-Doh connectors to work with his Makey Makey, and when he needed to file down his 3-D printed object. I also noticed a growing number of interactions between him and the other participants with whom he sat (Observation, 3/24/15). For example, he and his peers started to watch "Five Nights at Freddy's 1, 2, & 3" videos. Epic Explosion told me this was a popular online game predicated on the goal to have Chuck E. Cheese's-like robots kill kids, then stuff their

bodies into animals that play musical instruments. While these videos were not part of the Kingston curriculum, they seemed valuable to Epic Explosion and the participants who watched along with him. They laughed, gasped, and talked about strategies for manipulating the robots. The shared experience of watching the videos about the game brought together these young people who had not, up until that point, interacted much at all.

Community was also built between the instructors and the participants, primarily through the instructors' own making. The instructors modeled maker behaviors (e.g., trial and error, having fun, being creative) and worked side by side with the participants. On one occasion, I noted, "These instructors are doing themselves. Right now, the two instructors are building tables so that they can create double-decker 3-D printer stations" (Observation, 5/5/15).

In other instances, the instructors played with the new laser printer, built shelves, flew remote control helicopters, painted cardboard, glued LED lights, and helped a student create a papier-mâché volcano. In each of these examples, the instructors and participants became more equal, and thus built community around these shared experiences.

Epic Explosion's participation at Kingston also afforded him the opportunity to connect with people outside of the Kingston CTC. On two occasions, visitors came to Kingston to speak to the participants. In one instance, two men from an outside nonprofit organization told the students about an opportunity to participate in a workshop on how to make paper speakers. Epic Explosion did not show much interest in the workshop, but this visit introduced him to others who participated in the broader maker community, of which Kingston was a part. Similarly, when a student from a local art college came to

speak to the group about her work with 3-D printed faces that could move, Epic Explosion saw how this maker community expanded into higher education and potential jobs. Throughout each of these examples, Epic Explosion met people that, according to him, he would have never met unless he was at Kingston. He was introduced to new ideas and possibilities.

Finally, in late May 2015, Epic Explosion participated in the Showcase event, which the general public could attend for free. Epic Explosion chose to share the product that took him the longest to make and that could become interactive. As he explained, the

weapons [will be] set up, and you can choose weapons ... choose when you hit them ... there's going to be [different] backgrounds, too and people can choose certain characters to interact with. If they touch that person, they can ... do something or make sounds (Interview, 5/26/15).

Epic Explosion chose to integrate multiple technologies for this project: 3-D printing, Scratch, Inkscape, and Makey Makey connections. In the weeks leading up to the Showcase, I observed more interaction between Epic Explosion and his peers and instructors compared to any other time. At the Showcase itself, Epic Explosion was happy and proud of his project, and although it did not work exactly the way he wanted it to, he was able to show off some of the 3-D printed characters and his plan for the Makey Makey connections. When people asked questions about how a particular piece would work, he was confident in his explanations. He wanted people to touch the characters and play with the bow that took him so long to make. Even though Epic Explosion was shy, he welcomed the chance to engage with those who stopped at his station, and he was excited to show off his work, as shown in Figure 15 (Observation, 5/28/15). No one from

Epic Explosion's family was able to attend the Showcase, so he was also excited that I could be there to take pictures and celebrate all of his efforts.

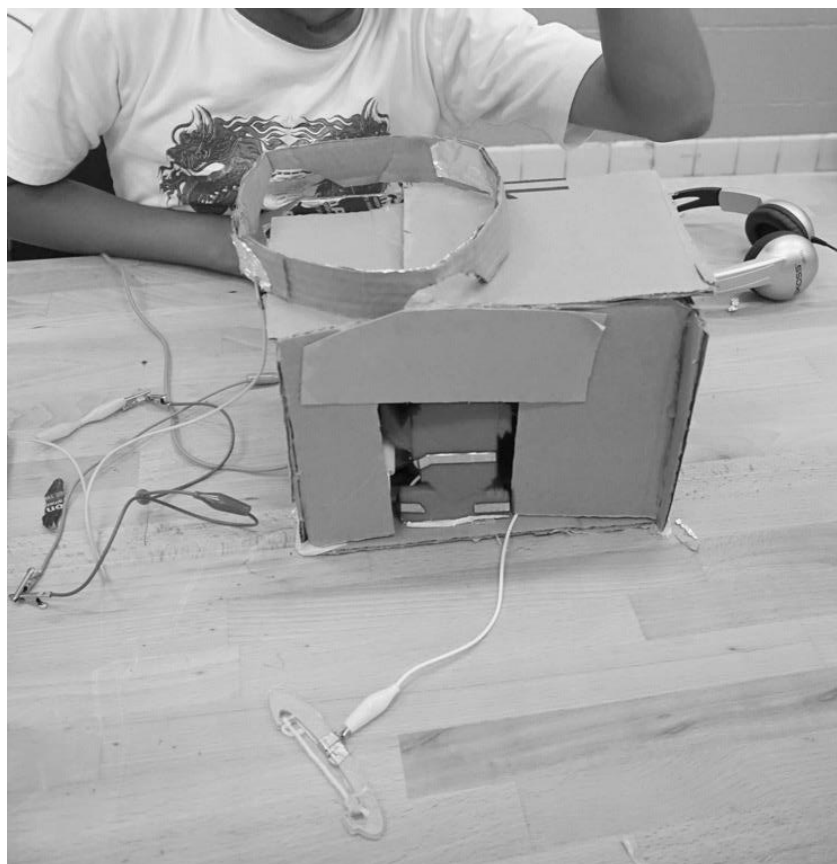


Figure 15. Epic Explosion's final Showcase creation. This content creation was a combination of 3-D printing, Makey Makey, Scratch, cardboard, and tin foil.

Epic Explosion's Case Summary

Epic Explosion's participation and uses of digital tools at Kingston allowed him to develop pathways to civic engagement in three primary ways: content creation, communication, and community building. His content creation provided him opportunities to learn new technical skills and apply those skills in sometimes-complex ways. Epic Explosion shared his work using Tackk and Scratch, new communication

tools for him; this sharing was valued highly at Kingston. Finally, he met and worked with people he would have been unlikely to meet without participating at Kingston.

Worth repeating here is that each of Epic Explosion's products—the games, 3-D printed objects, and graphic images he created at Kingston—involved some type of violence: blood, fighting, weapons, etc. This observation is noteworthy given that this choice of content was unique among the cases, and in many ways contrasted with the types of ideas at the core of civic engagement. Bers (2012) identified a particular PTD behavior that speaks to the issue of how young people use technology. In other words, for what purposes are the tools being used. She refers to this as choices of conduct. I did not interact with Epic Explosion outside of Kingston, so I do not know if his tendency to create violent games and watch violent and scary videos translated to his life in school or at home. But according to Bers (2012), a relationship has been shown to exist between “choices of conduct and character” (p. 12). This could be true for others, but I would argue that for Epic Explosion, another, more plausible relationship exists between his gender, age, and typical young boy interests, which involve violence and scary “stuff” (a word Epic Explosion often used). Within Kingston, I never observed any behavior that suggested his technological choices of conduct mimicked his personality; he was not physically or verbally abusive in any way.

Despite his choices of characters, Epic Explosion's content creation allowed him to explore new technical skills. His communication and community building, too, provided opportunities that support the development of civic engagement pathways, most notably through the new tools he used and the new people he met. Epic Explosion's participation

at Kingston prepared him to engage civically, although he did not give any indication whether or not he may actualize these skills for future civic engagement.

Tony

“I should say [I] adopted another community that I have now ... a new set of people. New set of thinkers ... and minds” (Interview, 4/16/16).

Description of Tony and His Participation at Kingston

Tony was a 14-year-old boy in ninth grade who, at the time of this study, attended an inner-city public magnet school that specialized in fashion design, architecture, and graphic design. He told me he came to the Kingston CTC and enrolled in its Maker Program because of his interest in graphic design and creating digital products.

Tony was a hard worker who stayed focused on these projects every Tuesday and Thursday from 3:45 to 6:00 p.m. Each session, Tony maturely followed the center’s procedures. He would sign in, drop off his backpack in the designated area, eat the day’s free meal, log on to Kingston’s website to learn the day’s tasks, and get started with his project. He usually settled into the same chair at the same table, and once he turned on one of the center’s computers and put on his headphones, he immediately fell into what Csíkszentmihályi (1975) called “flow”: the fullest engagement in an activity that is rooted in intrinsic motivation and absorbs the participant in meaningful and challenging ways. When Tony was in this flow, I felt uncomfortable interrupting him to ask questions about what he was doing; the responses he gave me while he worked, and his interview responses, were somewhat curt, and he rarely elaborated beyond what was asked of him.

When I asked him what he most looked forward to creating by the end of the program, he said, “a downloadable app game that I could play on PC or mobile device

such as a tablet” (Interview, 3/12/15). Tony did not have the chance to develop this app game; however, he did complete a number of other projects that pleased and excited him, a few of which will be discussed in greater detail in the content creation section below.

Pathways to Civic Engagement Through Participation at Kingston

Tony was the only participant in this study who, when asked if he knew what civic engagement meant, was quick and confident to say “yes.” He said civic engagement meant “engagement in your surrounding city” (Interview, 4/16/15). Tony suggested “community clean up” and “restoration of the neighborhood” as examples of civic engagement, and he considered himself civically engaged because of work he did to clean up his own city neighborhood. For example, he cited a time when he and his father helped shovel his neighbors’ driveway after a big snowstorm; this was an example of his engagement with his community, a community he described as “diverse, intertwined, close, helpful” (Interview, 5/7/15).

In addition to his neighborhood community, Tony spoke about the Kingston community. He said that he “adopted” Kingston, and although he knew some familiar faces from his previous and current schools, he recognized new ways of thinking as he engaged in content creation at Kingston. Tony developed a variety of technical skills through his content creations, including 3-D printing and circuit development. Additionally, he was afforded the opportunity to show his creativity with digital and non-digital tools. Creativity has been identified as a civic skill (Burgess, Foth, & Klaebe, 2006), and the processes Tony went through as part of his content creation illuminated how his creativity emerged out of his uses of digital tools. Collaboration, too, played an important role in the development of Tony’s civic engagement pathways as he created his

content. Tony, his peers, and his instructors collectively brainstormed, problem-solved, and experimented. More specifically, Tony's collaboration with others on his final Showcase project supported his idea to use Makey Makey circuits with online video games and helped make it successful. Finally, this collaboration led to Tony's feeling that Kingston was one of his communities. He liked the idea that he could talk about technology, coding, and design with people who understood and also enjoyed those topics as much as he did. Tony's understanding of the "new thinking" and "new minds" he found at Kingston highlight the ways in which his pathways to civic engagement were most strongly developed: through community building. This will be detailed through his interactions with others at Kingston, as well as through visitors to the CTC. Below, I highlight Tony's content creations, creativity, collaboration, and community building as the technology-mediated behaviors that supported the development of his civic engagement pathways.

Content creation. During the course of this study, Tony created five different products (i.e., content creations). As mentioned previously, content creation has been shown to afford young people the opportunity to develop competence, according to Bers (2012). In the same way Epic Explosion's content creation did not specifically align with civic activities, neither did Tony's. However, Tony's work with Inkscape designs, 3-D printed quilt squares, Scratch, and Makey Makey developed his competence to use these particular digital tools for future engagement, if he chooses. In this way, his content creations supported the development of civic engagement pathways.

Specifically, Tony developed technological fluency in graphic design through Inkscape, 3-D printing with Tinkercad, coding with Scratch, and circuit building with

Makey Makey. He initially learned to use these tools independently of one another; however, as the weeks passed, Tony's content creations reflected overlapping usage. For example, his final Showcase product used Makey Makey as the means to control an online game Tony selected specifically for the purpose of two people playing against each other. Also, Tony used Inkscape designs for his Scratch games, then used an Inkscape design for his 3-D printed objects.

According to Tony, he had some prior experience working with digital images and graphics. However, although he went to a public city school focused on design, the tools he used at Kingston were unlike any he had used at home or at school. Tony's exposure to these tools offered him the opportunity to develop new competencies around digital tools and, as is highlighted in the next section, develop his creativity.

Creativity. To create and engage in the ways discussed above, Tony relied on Kingston's activities as outlets. For example, throughout the program, he kept brainstorming lists in Microsoft Word to consider his options for the different projects; he was the only participant I saw do this. Tony's creativity seemed to push him to be a problem solver.

One example of this was when Tony needed to create controllers for his Scratch game. He decided to make bracelets for players to wear, rather than have the players simply hold objects in their hands. He thought the bracelet idea was unique as well as practical, and the controllers he created took what was a one-person video game and turned it into a two-person game. This exemplified Tony's desire to be creative and not feel limited by what already existed. To make the bracelets, he first used Play-Doh. However, that did not work because the Play-Doh fell apart and would not stay on his

wrist. Next, he tried aluminum foil. He made large bracelets with the foil, then small bracelets, and he asked those around him to try them on to see how well they fit (Observation, 5/5/15). He worked extremely hard over the course of many days to get the bracelets right.

Similarly, for the video game project, Tony needed to think creatively. To create the final project he demonstrated at Kingston's Showcase event, he wanted to connect his 3-D printed objects to Scratch. He used Tinkercad to make his 3-D object; then, he used a number of technological materials and non-technological materials that included a free online game, Play-Doh, duct tape, Makey Makey connectors, and aluminum foil. Tony reflected on his use of some of these materials to create his final product, the interactive foot-controlled game seen in Figure 16.

I had an idea to make a controller ... I thought about it and slept on it. It had come around to either a hand or arm controller, like where it might be on my wrist ... or footpads. Footpads ... [were] the best. I asked for a cutting board ... Exacto knives ... box cutters, and I took a large piece of cardboard and cut out my rectangular pads, wrapped them in tinfoil, and then I lined them with tape One of the screws in the table, because that was conductive and we connected it to that and then it worked wonderfully (Interview, 5/28/15).

Tony's content creations at Kingston afforded him opportunities to develop creativity and approach problems from a variety of perspectives using a variety of tools; this is an important step in tackling civic issues. It's important to note that although Tony's creativity was invaluable in each of these projects, so was the help of his peers and

instructors. Tony's collaboration, another technology-mediated behavior that supported the development of his civic engagement pathways, is discussed below.



Figure 16. Tony's final Showcase creation. Tony used a variety of digital tools to make this product that was enjoyed by many guests who came to the Kingston Showcase.

Collaboration. Initially, the role of collaboration in the development of Tony's civic engagement pathways was not obvious. My observations at Kingston focused more on the independent nature of most of Tony's work rather than the times he collaborated on a "shared task" with others (Bers, 2012, p. 12). For example, Tony sat at the same table each time, and although others sat there as well, most of the students wore headphones and spoke very little to one another. Whole-group instruction was rare; students were expected to log on to the website each session, read the day's instructions, and move at their own paces. This meant there were many instances when students simultaneously worked on different projects.

Despite this situation, collaboration emerged as an important technology-mediated behavior that played a vital role in the development of Tony's civic engagement pathways. As the quote at the opening of this case shows, Tony's time at Kingston introduced him to new people with whom he could communicate about and collaborate on shared interests and goals. "You want to give back to the community you learn from," one instructor said about the importance of communication and collaboration even beyond Kingston's walls (Observation, 2/19/15).

Inside the CTC, peers and instructors had their own methods of collaboration, often brief and structured exchanges related to the student's current project work. As a result, Tony and his peers were rarely off topic. If a student needed to know how to code something or why the printer didn't work or when to connect a particular cord, the instructors shared answers with few tangential discussions. These collaborative moments were meaningful and efficient within the context of the students' work and goals, and as a result, the students were able to move ahead.

For example, when Tony's Scratch game would not work, he raised his hand to let the instructor know. The instructor came over and showed him one or two quick fixes to get the game up and running. This interaction took no more than three minutes. Moments later, the boy who sat next to Tony also needed help. Both Tony and his neighbor wore headphones, but when the boy looked Tony's way and pointed to the screen, Tony took off his headphones and walked the boy through the issue (Observation, 3/26/15). The boy seemed thankful, Tony seemed pleased with himself, and then, they both immediately put on their headphones again and continued working on their own projects.

Another instance when collaboration played a role in Tony's connection to the Kingston community was when he wanted to link a computer video game to external foot controllers he made out of Makey Makey tools. Tony needed help, and two or three different adults come over to help figure out the problem. As they spoke, Tony and the adults surprised themselves with what they learned. For example, they figured out they could wear their shoes, whereas they had all initially assumed they would need to remove them. They learned the person who played the game did not have to hold the object that grounded the electrical current. They also learned Tony could put the duct tape in places they never thought would have worked. As they talked, some of Tony's peers came over and started to play around with the materials. This group then figured out the floor itself could be a conductor, which helped Tony tweak his project to make it more user-friendly. These conversations took place as the boy next to Tony held a cord, another person handed him duct tape, and another person pressed the buttons on the computer. During this time, someone asked Tony a question, and Tony replied, "I just need to figure it out" (Observation, 5/28/15).

As he figured it out, Tony made the decision to allow two people to play his game at once, rather than just one. He explained, "now that I have the feet controller ... it becomes two-player with my controller because it will be one person to do the attack button and another person to do movement" (Interview, 5/28/15). His idea to change the game design resulted from the collaborative nature of the making process, which encouraged other students to ask their peers questions and collaborate even more. For example, when I asked Tony about his Makey Makey project (i.e., the two-person game shown in Figure 18), he told me another Kingston student asked him how he built his

game. Apparently, this student's game would not work, and he sought Tony's advice. Tony told me, with a bit of smugness, "He saw how mine worked and he wanted my design" (Interview, 5/28/15). This made Tony feel accomplished and reinforced the importance of collaboration for problem-solving. Additionally, these moments of collaboration opened Tony's mind to others' ways of thinking and doing, a character trait that has been deemed a necessary part of civic engagement (Hart, Atkins, Markey, & Youniss, 2004).

Community building. As stated previously, community building contributes to civic engagement, most notably because of the social trust element (Putnam, 2000). Tony considered his Kingston peers and instructors to be another community; in fact, he was the only participant in this study to identify the CTC as a community. This was because, according to Tony, the people at Kingston were like-minded. At Kingston, he found a group of people with whom he could talk about design, technology, and making. This was interesting given the fact that Tony attended a design school, but he did not describe his school in the same way he described Kingston. Tony's community building at Kingston was a result of the ways in which he interacted with the other participants at the CTC, namely through their collaborations at their tables and their sharing of ideas and meals. At the same time, Tony's participation at Kingston facilitated community building because of the introductions to local individuals who also shared a passion for making and who were interested in the Kingston students' work. Community building within Kingston, as well as the community building between Kingston and others outside the CTC, contributed to Tony's civic engagement pathways. I highlight several examples below.

As previously mentioned, the Kingston participants sat together at tables, usually with the same people each session. Sitting this way for four hours a week allowed individuals to get to know one another in unique ways. In addition to specific collaborations around their content, participants shared music, videos, and stories. Additionally, the students often ate together prior to the start of the sessions; one of the city's nonprofit organizations provided free meals. Finally, the informal interactions between the instructors and the participants (e.g., when the instructors played with the tools and remote-controlled helicopters, as discussed in Epic Explosion's case description) further facilitated relationship building among the Kingston team.

Tony was also present at Kingston when the outside guests came to speak to the Kingston participants. These speakers included a man who came to recruit interest in an upcoming workshop about making speakers, and a young woman who shared the 3-D printed motion-activated face she made at the local art college. In each of these instances, Tony's participation introduced him to new people. Likewise, for the final Showcase event, Tony met parents, donors to Kingston, teachers, and neighbors. As individuals approached Tony's project, he welcomed the opportunity to talk about the process he went through. He was also happy to have guests and participants explore his product and play the game using the foot controllers. In this way, his interactions with members of the community were not only verbal (i.e., he spoke to the people), they were also physical, in that he had to connect the players to the game itself. These examples highlight the opportunities made available to Tony to expand his social network and recognize the wider community of individuals who were interested in Kingston and the work the Kingston participants did.

Tony's Case Summary

Tony's technology-mediated behaviors at the Kingston CTC helped him develop different pathways to civic engagement. While specific content traditionally associated with civic engagement was not directly addressed, Tony's content creation, creativity, collaboration, and community building equipped him with experiences and skills that the literature has shown to support pathways to civic engagement. The instructors at Kingston pushed its participants, Tony included, to reflect on and share their work. This reflection was evident when Tony talked about having to "sleep on" one of his ideas about using a remote controller for his Scratch game (Interview, 5/28/15). In this example, Tony's reflection came as part of his content creation. Reflection does have a place in civic engagement (Putnam, 2007), and although this incident did not directly impact community issues, I believe it suggests Tony's use of digital tools at Kingston equipped him with particular skills that support the development of civic engagement pathways.

CHAPTER V

CROSS-CASE ANALYSIS

Introduction

In Chapter IV, I detailed the seven cases of this study through the lens of the PTD framework. There, I used Bers's (2012) technology-mediated behaviors—collaboration, communication, community building, content creation, and creativity—to uncover the various ways in which each participant uniquely used technology to intentionally, and unintentionally, build pathways to his/her civic engagement. This chapter looks across those independent experiences and illuminates how, when taken collectively, those behaviors help us better understand how young people's technology use in the CTCs supported their preparedness to act, or the action itself, in response to civic issues (i.e., their pathways to civic engagement). In particular, the cross-case analysis revealed the participants' pathways to civic engagement were supported through the process of making their digital products, or in some cases, by the digital products themselves. In this way, participants were afforded unique opportunities at their CTCs through their various content creations. These findings are explained below through the following emergent themes: the development of civic skills through content creation, namely civic knowledge, collaboration, and communication; community building through content creation; and the emergence of civic identities through content creation.

The first theme to be explored here centers on the participants' uses of digital tools to support their civic skills. The literature has suggested that urban youth are at risk for not learning civic skills (Hart & Kirshner, 2009; Lerner, 2007), which are essential for participation in the democratic process. Yet as mentioned in previous chapters, increased

levels of civic skills have been shown to result in greater political participation (Cohen & Chaffee, 2013) and community involvement (Rogers, Winters, Perry, & LaMonde, 2015). Findings from this study show that participants developed civic skills through the process of content creation as well as through the creations themselves. The most notable civic skills include civic knowledge, communication, and collaboration. The different approaches taken by the participants to collaborate and communicate, in particular, highlight the various ways in which civic engagement pathways can be developed.

One related, and significant, finding is that despite many of the Yardville participants' assertions about the importance of social media as a communicative tool for civic engagement purposes, communication practices within Yardville were void of social media. This contradicts much of what the literature has suggested about social media's role in young people's civic engagement activities (Bennett et al., 2010; Kwon et al., 2014; Smith, 2014).

A second theme that emerges from the data is that community building was enabled, at least partially, through the participants' content creation. Research has shown that the more opportunities typically disenfranchised youth have to positively interact and network with others to build social trust, the more likely they are to participate in civic activities (Clark, 2003; Dutta-Bergman, 2004; Hart et al., 2004; Putnam, 2007). In the context of their programs, participants used a variety of technologies to create content with their peers in the CTCs. At the same time, much of the content was developed because of requests from organizations or individuals outside the CTCs; these organizations wished to have the youth perspective. These community-building practices can be explored through the lens of bonding and bridging social capital (Putnam, 2000).

Putnam defined bonding as the bringing together of people with a like-mindedness or shared interest or purpose, and he defined bridging as the connections of different social networks. In this study, bonding refers to the community building that took place within the centers, and bridging refers the community building that took place between the centers and other individuals or organizations outside the CTCs. Findings from this study support previous research on the topic, and show that the participants in this study were part of community-building practices as a result of their CTC content creations.

Finally, the third emergent theme explores the participants' understanding of civic engagement and their own potential as civic engagers. Researchers agree that a young person's civic identity is essential to moving individuals into the action stage of civic engagement (Youniss & Yates, 1997). Findings suggest that the content creations were critical in the development of the participants' emerging civic identities. Some participants developed their emerging civic identities through the civic knowledge and civic skills they were privy to through their content creations at the CTCs (as explored in Chapter IV). Through their civic knowledge and community building, all five of the participants from Yardsville developed self-efficacy about their potential to be change makers. For those students, in particular, their emerging civic identities supported pathways to their civic engagement.

Data Analysis and Emergent Themes

Before further elaboration on the findings, the data analysis section included in Chapter III is expanded here, and additional information about the specific inductive data analysis process that guided the development the themes presented in the cross-case analysis is provided. The research question—how can urban youth use digital tools at two

CTCs to support the development of civic engagement pathways?—drove the two-phase data analysis (Creswell, 2007). The first phase of analysis focused on the individual case descriptions. There, I passed through each participant’s set of observations, interviews, and artifacts twice and created open codes. In the first pass, codes were primarily descriptive of the content. For example, the first pass of Janelle’s data included multiple frequencies for codes such as “public speaking,” “sharing her idea with the group,” and “radio work.” In the second pass, I analyzed these codes using the constant comparative method (Merriam, 1998). This method, discussed in detail in Chapter III, was employed for analysis not with the intention to build theory, as Glaser and Strauss (1967) first intended, but rather to help extract and illuminate how the participants used their digital tools to develop civic engagement pathways. In this second pass, I refined the codes and condensed them into categories. In Janelle’s case, I noticed a pattern when it came to her uses of digital tools; she used them most often to communicate. Therefore, I categorized the codes shared above, for example, as *communication*. Other codes noted in the first pass of Janelle’s data (e.g., ice breaker activity, visiting a college, guest is speaking to her, asked to attend a town hall meeting, working with university students) highlighted her uses of digital tools for *community building*.

Creating these categories required me to ask a series of questions throughout the process. What did the participants need to know in order to create their content? What role did outside organizations play in their uses of digital tools? How did other peers within the CTCs contribute to the development of projects? Were the final projects shared? If so, with whom? How did technology play a role? These questions, answered through the data and illuminated by the PTD framework (Bers, 2012), allowed for

additional categories to emerge for the individual participants, which were then used as part of the cross-case analysis.

The cross-case analysis, the second phase of analysis, was also carried out through the constant comparative method (Merriam, 1998). In this phase, I compared the categorical codes in the individual case descriptions to identify the commonalities and differences. I also referenced the PTD framework (Bers, 2012), as well as concepts and language from the youth civic engagement literature. For example, in this phase, I noticed a pattern of codes across the cases, including *new information for her, she told me she was made aware, train safety, attendance among young children, human rights, disproportionate suspension rates, awareness, internet safety, and school budgets*. These codes spoke to what the civic engagement literature has suggested is an important component of civic engagement: civic knowledge. For at least five of the participants, the data showed that civic knowledge was critical to their content creations (e.g., web advertisements, webisodes, radio shows). This increased sophistication of their civic knowledge contributed to their civic engagement pathways. Below, I elaborate on this as well as the other findings from this study.

Findings

Theme 1: Development of Civic Skills Through Content Creation

The cross-case analysis revealed that specific civic skills were introduced and practiced through the process of creating content for projects at the CTCs. These skills, which have been identified in the literature on civic engagement as important factors in the development of civic engagement pathways, included civic knowledge, collaboration,

and communication. Here, I illustrate how technology supported, in both intentional and unintentional ways, participants' understanding of new civic skills.

First, I provide specific examples of ways in which civic knowledge was supported through the Yardsville participants' content creation. Next, I show how collaboration, a skill associated with civic engagement, was developed as a result of the content creation processes. Although the collaborative practices differed between the two CTCs, participants at both centers had opportunities to share tasks and work toward common goals. They also all maintained "positive bonds and relationships," which Bers (2012) described as a condition of successful collaboration. Lastly, I discuss communication as a civic skill. In the same way collaboration practices differed between centers, so too did the communication practices. However, technology played a role in how all participants connected with one another. This happened either through the process of content creation or the creation itself.

Civic knowledge. Civic knowledge is an essential contributor to civic engagement; it has been shown that young people who are civically informed (i.e., have civic knowledge) are more likely to take action in community issues (Hart et al., 2004). The five Yardsville participants' uses of digital tools supported new civic knowledge as they became aware of issues in their communities. Furthermore, these Yardsville participants were charged with using digital tools to bring awareness of these civic issues to others. Conversely, for Epic Explosion and Tony at Kingston, civic knowledge did not contribute as a meaningful to their civic engagement pathways.

Although civic knowledge did not become a strong contributor for the Kingston participants, it is worth noting that the center was not void of civic knowledge

discussions. For example, one day's lesson focused on "Release the Kraken," an online game in which players had to engage in questions about Internet safety. The instructors introduced this lesson by explaining to the participants that they were expected to responsibly use online tools to communicate with others, primarily through the website Tackk (<https://tackk.com/>). The "Release the Kraken" game provided information about digital citizenship tenets (e.g., don't divulge personal information online; do not bully or use profanity). This type of information is equivalent to what we expect young people to know about society, according to Ribble (2012); however, these instructions are for their virtual society. Another example of the role of civic knowledge at Kingston (although not related to Epic Explosion or Tony) was during the CTC's yearly Webslam event. Webslam is an opportunity (outside of the Maker program time) for interested Kingston participants to practice coding skills by collaborating with nonprofit organizations to develop websites for those organizations. The nonprofits are often focused on civic issues in the city. Epic Explosion and Tony were made aware of this event, yet they never expressed any interest in it to me.

Lastly, Epic Explosion and Tony did see other students in the Maker program create content around civic issues. For example, one student 3-D printed a donation box that said "thank you" when change was dropped into it. The student's purpose was to create motivation for people to donate money to good causes, and his idea was to use technology as part of the motivation. Despite these exposures, civic knowledge did not become inherent in the work either Tony or Epic Explosion created, and was not a contributing factor to the development of their civic engagement pathways.

On the other hand, participants required more than just simple exposure to issues through informal and formal discussions to best develop specific content creations at Yardsville; they also needed civic knowledge. In other words, content creation projects required the Yardsville students to become knowledgeable about particular topics that aligned with the civic issues. For example, one way Tori developed civic knowledge was through attendance at the town hall meeting; this was facilitated by the Yardsville directors. Tori told me that participating at Yardsville opened her eyes to certain issues, such as the politics behind budget cuts in her city's public schools, as well as to how public forums work, and don't work.

Below, I highlight examples of the Yardsville students' development of civic knowledge: two school attendance campaigns and an Info Playlist (a hyperlinked list of academic websites and articles) created around the issue of the school-to-prison pipeline. In both of these examples, content creation supported the students' civic knowledge and thus supported the development of their civic engagement pathways.

Building knowledge about school attendance. At the time of the study, the majority of the Yardsville Design Team's energy and resources were focused on the issue of K-12 school attendance. Students were to create two pieces of content (i.e., content creation) around school attendance: a webisode geared toward young children, and a web-based advertisement for college-bound students. To create the most appropriate and effective content, the students had to learn as much as they could about their topic.

For example, the Design Team instructor planned a lesson around "a bunch of research about preschool attendance" (Observation, 3/13/15) so the participants could learn as much as possible about the importance of attendance for elementary students. To

do this, the students worked in groups and read different articles about attendance. They were then asked to share their ideas with the whole class. These ideas ranged from the challenges presented by parents' work schedules, to ineffective public transportation, to sickness, to a lack of motivation. As students discussed and asked questions of one another, the study participants needed to conduct research and learn more about the issue. As a result, they acquired new knowledge, including statistics about absenteeism in their city. Students also learned about attendance laws and how parents and guardians are responsible for their children's attendance.

After the session focused on this issue, Melanie told me, "I didn't know half of the stuff about attendance. If you don't show up for school, your parents can get arrested ... information of that nature" (Interview, 3/20/15). Other students, too, found this activity eye-opening. For example, Aliya explained it was enlightening to know that "missing 20 days of school in your prekindergarten and kindergarten years can affect you so much. That could cut your chances of high school graduation in half" (Interview, 3/20/15).

Another content creation that required civic knowledge was the attendance campaign geared toward college-bound high school students. Janelle told me the website's goal was to "convince high students that their attendance will factor in them getting into college one way or another" (Interview, 3/9/15). As part of this project, students took it upon themselves to learn more about high school dropout rates and the average number of absences that affect the likelihood of a student going to college. The participants also discussed the number of days they were absent and how often their friends or family members missed school (Observation, 3/9/15). As a result of this project, the participants

were made more aware of this attendance issue, one that could have a direct impact on their life and/or the lives of their friends and peers.

Melanie and Nicole worked to create an ad containing the names of many colleges, written in fonts they designed themselves. Through the process, these young ladies learned about the colleges themselves. For example, both students learned new information about where different colleges are located, how much they cost, the types of majors they offer, and how many students attend them. Nicole told me, “I never really looked into too many states [for different colleges], but it surprised me which ones were higher than others [in cost] that I didn't know were actually better than some that I was looking at” (Interview, 3/30/15). Whereas her previous experiences with the experience of searching for colleges was limited, this project exposed Nicole to information that will have a direct impact on her life in a few years; at the time of this study, she was a sophomore in high school.

Building knowledge about the school-to-prison pipeline. In addition to learning about civic issues around attendance, participants were also introduced to topics related to the school-to-prison pipeline, including school suspension rates, alternatives to school suspension, inequality of resources for black vs. white students with disabilities, and school discipline. Participants learned about these issues by developing an Info Playlist project (Observation, 4/1/15) in collaboration with local university students, whose professor approached Yardsville and asked to work with them. The product was a list of online resources about specific educational issues that were relevant to the university students—many of whom planned to become teachers—as well as the Yardsville students. This annotated list of digital resources provided quick and easy access to

information about the different educational topics, and the intent was to share this resource with the administrators and teachers who used the suspension video as part of a professional training.

Through the Info Playlist presentations, the Yardsville students were introduced to specific evidence about each of these topics as found in scholarly sources. For example, one of the university students spoke to the group about African American special-education students in low socioeconomic status (SES) schools, who receive far fewer accommodations than white students with the same disabilities who attend wealthier schools. The African American students are more at risk of being unfairly suspended, due to the teachers and schools being ill-equipped to properly handle their disabilities. These suspensions pave the way for more suspensions, and many of these special-education students end up in jail as a result their failed education. This information, along with most of the additional evidence shared with them about the school-to-prison pipeline, was new to the Yardsville students.

The examples presented above showcase how many of the Yardsville participants' content creations were driven by civic knowledge they would have not had prior to their involvement in the CTC. Furthermore, their content creations would also not have been possible in the absence of collaboration. In the Info Playlist example, the Yardsville students collaborated with the university students to learn about relevant topics and resources. The next section further explains this theme of civic skill development in the context of collaboration in order to illuminate the ways in which the participants' collaboration skills contributed to their civic engagement pathways.

Collaboration. Collaboration, according to Bers (2012), is “the opportunity to work with others and to willingly cooperate a shared task Most technologies that support collaboration also provide ways for people to connect and communicate” (p. 12). This particular skill was developed in different ways across the sites. For example, content creation at Yardsville was all group-based, whereas content creation at Kingston was more independent. However, all of the participants, regardless of site, demonstrated through their collaborations that they cared about “each other’s ideas and needs” (Bers, 2012, p. 12). This section explains how development of civic engagement pathways occurred across the cases through collaborative uses of digital, and sometimes non-digital, creations. While collaboration was an organic component of content creation for Yardsville participants, Kingston participants collaborated on-demand as needed.

Collaboration as an organic component of content creation for Yardsville participants. The participants at Yardsville actively collaborated with others throughout all of their content creations. Within the collaboration groups, participants took on different roles in the process of collectively developing their content creations. Below, I present examples of collaboration around the two main Design Team projects I observed: the Be On Time webisode and the College World web advertisements. Both of these examples highlight how the Yardville students “willingly cooperat[ed] a shared task” (Bers, 2012, p. 12) and how participants took on different roles based on their technology skills and/or interests.

The Be On Time campaign, launched by Design Team participants two years ago, focused on the importance of school attendance for younger children. The campaign used Nate, a superhero who was never late or absent from school, to capture the attention of

pre-K and kindergarten students; at the time of this study, more than 900 students in the city owned a coloring book about Be On Time completed by last year's Design Team. During this study's observation period, students built off the coloring book to develop an animated webisode. This project required a variety of tasks, both digital and non-digital, and involved at least eight Design Team students (including this study's five participants).

One of the earliest tasks was to brainstorm ideas about characters for the webisode. Figure 17 shows the large chart paper that hung on the wall during one of the first brainstorming sessions in March 2015. Students were asked to share character ideas for both superheroes and villains. During this session, they discussed what the characters might look like, how they would contribute to the storyline, what they would wear and what props, if any, they might carry. The collaboration sessions provided students the opportunity to share their ideas, ask each other questions, offer suggestions, and oftentimes laugh at what emerged. The collaboration sessions also opened the door for Design Team students to discuss what role they wanted to contribute to this project, as many roles were needed. For example, some students decided to storyboard, others wanted to hand-draw scenes, and a few other students wanted to work on the audio soundtrack. Melanie and Nicole decided they would trace drawings into Adobe Photoshop, whereas Tori and Janelle wrote scripts, and Aliya was in charge of overall editing and production. As students waited to receive what they needed for their particular task (e.g., Aliya needed a lot of the content before she could start), they walked around and helped each other complete their chosen tasks. The instructor was always present to ask the students (including the participants) questions about what they were

doing and why. She also fostered the collaboration by specifically asking certain students, like Tori, to support others who needed help with Adobe Photoshop, for example.

Another example of content creation that fostered collaboration was the College World project. Essentially, this project involved creating a public service announcement in the form of an advertisement to be featured on a website for college-bound students. As mentioned in the section above about civic knowledge, the advertisement created by the participants focused on the importance of high school attendance to college admission and retention. The website that would host this ad contained information about college costs, locations, majors, admission requirements, and student populations.

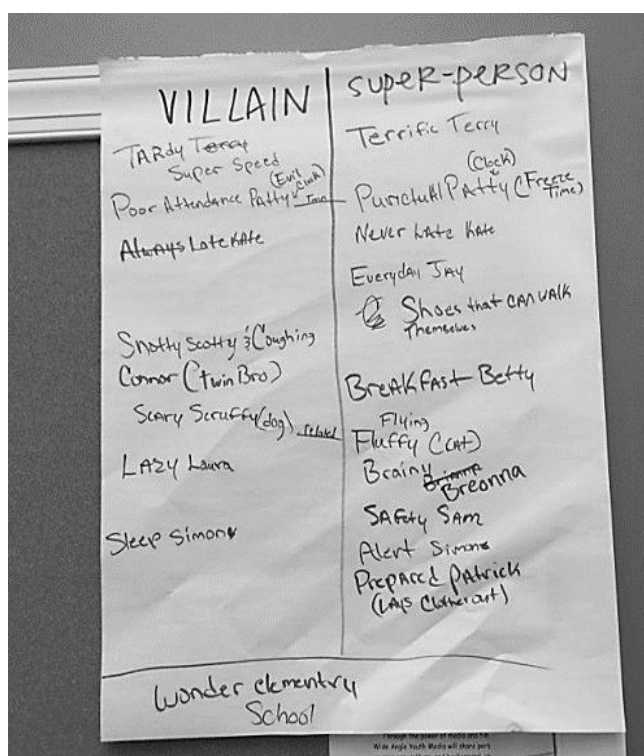


Figure 17. Brainstorming board. Yardsville participants worked together to come up with names of superheroes for the Be On Time Campaign.

Like the Be On Time campaign, this project began with a group brainstorming sessions in which students considered why attendance is especially important for high school students. They also considered different slogans that might appeal to older students. As they shared ideas, students asked questions of one another and exchanged thoughts and opinions. Additionally, “[the instructor] told one group their ad had a good message but its design was lackluster. Another group’s design was more eye-catching. One group included too much text, and another group didn’t include enough information” (Observation, 3/4/15).

Melanie and Nicole worked together and almost immediately came up with the following slogan: “If You Attend, You Win, and Your Options Bend.” Figure 18 shows one of the early stages of the design around this idea. However, when they brought this idea to larger group, Nicole and Melanie were met with some resistance. The group asked them why they chose those words, and the girls said it was because they rhymed and sounded catchy. However, the instructor did not agree that the words rhymed, and the discussion shifted to focus on dialect, accents, and the city’s unique speaking patterns. The group then shared their thoughts about words that rhymed and collaborated to determine the effectiveness of “attend,” “win,” and “bend” as rhyming words. Melanie and Nicole reflected on the group’s suggestions and went online to research rhyming words. In the end, the girls decided they liked their original slogan and did not want to change it.

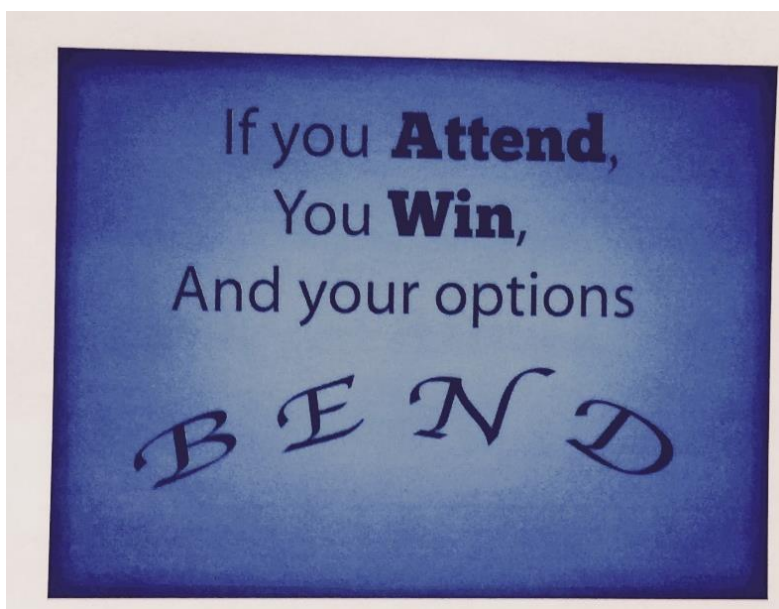


Figure 18. Melanie and Nicole's first College World design.

This was one of the first collaborative designs for these Yardsville participants.

When it was time for the next feedback session, Melanie and Nicole explained that the ruler they added to their design represented the way students' options would bend and become more flexible if they attended school (Observation, 3/4/15). The students thought the ruler might help underscore their message. By collaborating with the larger Design Team, Melanie and Nicole were encouraged to revisit their work and either consider different rhyming words or justify their word choice; they chose to justify instead of change.

In addition to collaborative moments with the larger group, Janelle and Tori specifically collaborated on one task of the College World project. Tori was responsible for the more technical sides of their work. For example, Janelle did not know the next steps to take after she scanned her initial drawing into Photoshop, so Tori demonstrated

to Janelle how to use the drawing pad. From there, the two worked through choosing the words and fonts. They also regularly collaborated with the instructor and Aliya to receive assistance to animate the drawings they had successfully uploaded; Janelle wanted the finger to wag. As shown through the content creations around the Be On Time campaign and the attendance campaign, collaboration as a group as well as in pairs was a natural component of the Design Team's work process. From the inception of the ideas, to the justifications of design choices, to the uses of different digital tools to create the final products, these content creations necessitated collaboration at each step of the process, and collaborative practices were a seamless part of the participants' work.

Kingston participants collaborated on demand. In contrast to the experiences of Yardsville participants, who collaborated in large and small groups throughout their content creation process, the Kingston participants relied on collaboration toward the end of their content creation process. In fact, collaboration was not readily apparent at first glance, as this excerpt from my researcher's journal, written midway through data collection at Kingston, illustrates:

Most of the work just becomes independent, so they don't need so much support.

The collaboration is not as evident as I would have thought. They all sit together at tables, but so often they are wearing headphones and not talking. I definitely thought I would have seen them work together more (Observation, 3/26/15).

As time went on and the participants moved into the final stages of their projects, I noticed how often they collaborated, mostly to ensure the success of the product (e.g., the circuits were connected, the Scratch games worked, the 3-D printed items were correctly sized) or when a specific problem arose. In these moments, most of the students

(including the study participants) looked to each other for support and a sense of caring about their work. Here, I provide examples of Tony's and Epic Explosion's content creations and how the success of these creations was made possible through collaboration with their peers and the instructors.

Tony's Makey Makey project. The last month of Tony's time at Kingston was spent designing and making the product he would share at the final Showcase community event. This event, which will be further discussed in the community building section of this chapter, was an opportunity for the Kingston participants to show off a content creation of their choice. Tony decided he wanted to create remote controls for a video game using Makey Makey circuits. During one of the lessons at Kingston, participants were given the chance to experiment with Makey Makey circuits using different conducting materials and by connecting the conductors to a wide variety of items. Some students chose to connect the systems to musical notes on the computer; when they touched certain balls of Play-Doh, for example, corresponding notes would play. Other students connected the Makey Makey systems to LED lights and experimented with controlling the lights with aluminum foil rings around their fingers. Tony wanted to do something unique by creating foot controllers for a Pac-Man-like game:

I had an idea to make a controller and then I thought about it and slept on it. It had come around to either a hand or arm controller like where it might be on my wrist, like a layout like that, or foot pads. Foot pads, I thought was the best. If it had the arm control, it would only be one player, but now that I have the feet controller ... [there is a] one player and two players option. One person to do the attack button and another person to do movement (Interview, 5/28/15).

When Tony told me about the process he went through to make the controller, he spoke a lot about the support he received and how he collaborated with both peers and instructors to get it to work the way he wanted. My observations confirmed that many others were involved in this process, not just the instructor. At one point, five people, including two other instructors and three students, collaborated on his content creation, trying different combinations of conduits. Tony told me a bit about this process:

[The instructor] helped me with the ground because I kept connecting it to my wrist. He showed that I could also connect it to the table. One of the screws in the table, because that was conductive and we connected it to that and then it worked wonderfully. Then we figured out that our shoes also worked and the shoes shouldn't have worked. We learned that the floor was conductive, so shoes work occasionally. No shoes, but socks, definitely work. The table ground started to not work as well, so we took it off, and I have it back on my wrist now (Interview, 5/28/15).

Collaborating with others made Tony's content creation possible. Additionally, Tony's experience prepared him to help others in the CTC. For example, Tony related that "another kid in there had just asked me how I built mine because, apparently, he built his and his wasn't working as well, so he saw how mine worked and he wanted my design" (Interview, 5/28/15). In this way, further collaborations were encouraged.

Epic Explosion's 3-D project. For the final Kingston Showcase event, Epic Explosion decided he wanted to people to be able to interact with his 3-D printed video game characters. For example, he explained, "if they touch that character, they can show that person a little clip or something. Or it can make sounds. The characters can also have all

sorts of weapons” (Interview, 5/26/15). Epic Explosion’s vision required a number of steps, and initially, he completed most of them on his own. For example, since he wanted the characters to stand up on their own, he decided to print a thicker version of their stands. Also, to make his own sounds, he used Scratch to record his voice. Finally, he needed to apply Makey Makey controllers to his characters, so he tinkered with aluminum foil and glue to place the controllers where he wanted them (Observation, 5/26/15).

Epic Explosion worked independently throughout each of the tasks described above, but when the time came to make the system work as a whole, he was required to collaborate. First, the boy sitting next to him at the table had to hold the aluminum foil in place so Epic Explosion could put glue where he wanted it to go. Next, Epic Explosion realized a string would not fit through the bow he wanted his character to hold, so he asked the instructor to show him how to use a file to make the hole bigger. In addition, other students at Epic Explosion’s table contributed ideas about how to connect the Makey Makey, such as where the touch pad should be located. As the various students contributed their suggestions, Epic Explosion was willing to take their advice and try out different strategies.

When I asked Epic Explosion how he created this final piece of content, he gave credit to the others. He said he had help, and that he was happy with the other people at Kingston because he was able to share ideas with them. This included watching the popular Friday Night at Freddy videos (he enjoyed being scared with his peers), sharing Tinkercad (3-D printing software) designs, and playing Scratch games. Epic Explosion

suggested the collaborations he experienced at Kingston were meaningful and helpful, and that he was happy he made new friends as a result of his participation.

The opportunities participants had to collaborate with each other, as exemplified above, would not have been possible in the absence of communication. Thus, the next section focuses on the ways in which communication was fostered through the participants' content creations and supported the development of civic engagement pathways. More specifically, I highlight the ways the two CTCs provided their students different opportunities to communicate through face-to-face structures and online tools.

Communication. In the context of digital experiences, communication happens through technology (Bers, 2012). In particular, she stressed the importance of social media and suggested “new developments in social media promote new ways to communicate” (p. 12). Tony’s and Epic Explosion’s communication practices at Kingston embraced this to a certain extent, given that online tools such as YouTube, Tackk, Tinkercad, and Scratch were an integrated part of the content creation process.

Conversely, the communication practices surrounding the Yardsville participants’ content creations were completely devoid of social media. Rather than communicating *through* technology, the Yardsville participants communicated *because of* technology. In other words, at Yardsville, the face-to-face interactions were an invaluable component of the content creation process. Below, I present examples of communication practices at each center, starting with Yardsville. Note that while the unit of analysis in this study was the individual participants and not the CTCs, the cross-case analysis revealed that communication practices differed between sites, suggesting that the sites themselves valued certain practices while devaluing others.

Face-to face-communication practices for Yardsville participants. Despite the current emphasis on the importance of social media for youth civic engagement, and the Yardsville participants' own opinions about the importance of social media in their lives in general, none of the Design Team's communications or content creations included social media of any sort. Rather, the Yardsville instructors valued face-to-face communication, as evidenced by their cell phone policies, the absence of social media, and the public-speaking badges that were awarded to participants who spoke well in front of more than 10 people.

To start, Yardsville's no-cell-phone rule sent a strong message to participants about what types of communication were valued at the center. Cell phones—the most ubiquitous communication tool in current use, especially among young people—were prohibited during the Design Team's sessions at Yardsville. The instructor called them “calculators” and they were not allowed to be out while the participants worked; if found, they would be taken. The expectation was that students were there to work, and phones were distractions that would take away from their focus.

Social media was also not valued as a tool to support participants' work at Yardsville. The CTC itself relies heavily on Twitter, Instagram, and Facebook to promote events and fundraising efforts, yet even when students were asked to write a tweet-length summary of a reading they did about elementary school attendance, they were told to write the tweet on a piece of paper, rather than posting it online via Twitter.

Although the participants talked about the importance of social media to keep peers informed about civic issues, none of their content creations involved social media. Instead, they shared their creations elsewhere, such as the College World website, the

Yardsville website, and the radio. This finding from Yardsville was interesting in light of Bers's (2012) stance on the value of technologies of communication for civic engagement. The communication practices at Yardsville, both those that organically developed among the students as well as those encouraged by the staff, did not align with practices I expected given the literature. Rather, its practices capitalized on the face-to-face interactions during which participants communicated about the process of creating their projects. Most notably, all Yardsville participants were regularly required to speak in front of the Design Team group, their instructor, and, sometimes, the center's director and board members. On five different occasions during data collection, guests from outside Yardsville were also part of these Praise, Question, Polish feedback sessions; their presence required the Yardsville students to articulate above and beyond the less formal sessions that normally took place. In other words, when guests visited, these sessions necessitated the participants' preparedness to communicate their ideas in effective and meaningful ways, in real time, to live audiences, rather than asynchronously to online audiences. This face-to-face communication supported one of the primary goals of the Design Team and Yardsville: public speaking. In addition, if a Yardsville student sent a video to the instructor that showed her speaking in front of a group of at least 10 people, she could earn a public-speaking badge. One participant, Janelle, earned this badge when she spoke as a panelist at a university event about the school-to-prison pipeline. As discussed in her case description, Janelle spoke to more than 100 people about the Design Team's video on school suspensions. Aliya's participation at Yardsville also afforded her the opportunity to speak publically. During this study, Aliya was asked

to speak in front of clients for whom she designed marketing materials, answering their questions and offering suggestions for improvement.

In addition to opportunities for communication and public speaking within the center, external communication was also an important component of the Design Team's processes and products.

External communication. Janelle's participation on the Design Team afforded her multiple opportunities to share her experiences and communicate ideas about ways to improve her community with an audience outside of the CTC. One specific example was Janelle's opportunity to create content for National Public Radio (NPR). A journalist visited the Design Team and asked the students how they felt about the city's bus system. Janelle told the reporter,

I was like, it's terrible. Sometimes it's terrible and it takes forever. I live 10 minutes away from my school if you drive in a car, but if you get on the bus it takes like an hour to get there (Interview, 3/9/15).

After that exchange, the journalist asked Janelle if she could follow her for a day to experience her travel situation firsthand, so that listeners could, as Janelle explained, gain "insight to what students go through in the morning" (Interview, 3/9/15). According to Janelle, the hope was that this insight might motivate listeners to advocate for more efficient transit systems for students. This story was featured during a local NPR segment.

The second opportunity Janelle had to communicate through the radio was when producers from NPR contacted the Yardsville staff and asked if anyone there would be willing to write an essay about life after the riots in the city and read it on the air.

According to Janelle, “I got to voice my opinion and people got to hear and understand what it was like being a teenager in [my] City after what just happened” (Interview, 1/13/16). In her essay, she focused on the need to give city youth a chance to be more than what the media portrays. In her three-minute reading, she expressed sadness about the city’s circumstances as well as a hope that she and her peers could do better.

This type of communication was important for Janelle because without it, she said, she would not have had any knowledge about the public radio station, the reporter’s interest in the problems associated with the city’s transit system, the citizens who were fighting for the school’s art budget, or the students at the university who were studying racial issues around the school-to-prison pipeline. These were important contributions to Janelle’s civic engagement pathways in that they opened the door to civic issues, civic leaders, and civic opportunities to have her own voice heard. These activities also contributed to her self-efficacy; she believed that she could make a difference. She learned from her experiences on the radio and as a panelist that her voice could potentially influence others in ways adult voices could not, and perhaps her influence could result in the positive changes she hoped for in her city.

Melanie’s communication through her video content creation. Much in the same way Janelle used her content creation to communicate her voice to the radio listeners, Melanie, too, communicated through a video she helped create with her peers at Yardsville. The video was about the violence in her city and the ways in which she hoped positive changes would come as a result of that violence. This video, in which she spoke about the importance of youth engagement, the media’s role in the perceptions of urban youth, and how she saw the city at that time of the interview, was shared via Yardsville’s

website. Melanie's contributions to the video (i.e., the content creation) allowed her opportunities to communicate her personal thoughts, feelings, and belief that her community could be better if everyone played an active role, something that would have not been made possible in the absence of this video.

Online communication for sharing work and problem-solving at Kingston. The communication practices at Kingston differed from those at Yardsville; Kingston participants did use online tools (e.g. Tackk, Scratch, and YouTube) for both sharing and problem solving. The more popular social media tools such as Instagram, Snapchat, Facebook, and Twitter were also not used at Kingston. However, other tools were embedded in the communication practices at Kingston, especially to facilitate communication between students and instructors and to share work with people outside the CTC. Sharing work was a valued part of the content creation process at Kingston, and participants were asked to post their digital products frequently. Epic Explosion shared that "I actually am starting to put stuff on there now and it's more appealing Because every time I go on there, I'm just surprised to see one of my robots just right there" (Interview, 4/16/15). Epic Explosion found it exciting that others would communicate with him about his content creations. Scratch, another online tool that students used to create digital games, also allowed for commenting and feedback. This provided another way for students to share work and give feedback during their process.

At Kingston, Epic Explosion and Tony also used communication technologies to support their problem solving, particularly YouTube. This online tool was used as a way to support and supplement instruction. Often, only two instructors were available to work with 25 students. Therefore, Epic Explosion and Tony relied on YouTube videos for

basic troubleshooting to help them solve problems with their projects as they emerged.

For example, Epic Explosion used YouTube to learn how to take a screenshot. He did not know how to do this on a Mac, so the instructor told him to look it up on YouTube (Observation, 3/31/15). Tony, too, used YouTube when he was unfamiliar with how to move an image on Inkscape, an online tool used to design graphics.

For Kingston participants, online tools were embedded in the communication practices not just for one-way dissemination of information. Rather, at this CTC, students were encouraged to use digital and online tools to share their content creations and creative processes, and continue discussions around the content.

Summary of Theme 1. Participants at both CTCs developed civic skills in the process of, and as a result of, their content creations. These skills included the acquisition of civic knowledge, their collaboration practices, and their communication practices. According to the literature, these civic skills are contributing factors to civic engagement (Middaugh & Kahne, 2013). In other words, individuals who have these skills are more likely to become civically engaged; their pathways to civic engagement are more developed compared to individuals who have not been exposed to civic knowledge, collaboration, or communication practices.

Theme 2: Community Building Supported Through Participation and Content Creation

In interview number 1, I asked each of the seven participants to “tell me about some of the things you do here.” Every one of them responded with the pronoun, “we”—not “I.” For example:

- Melanie: “We help children ...” (Interview, 3/20/15)

- Nicole: “We make posters, signs, anything that will help kids in the city...”
(Interview, 3/30/15)
- Aliya: “We make the videos ourselves, but we have mentors to help us, guide us through it” (Interview, 4/20/15).
- Janelle: “We recently worked on designs for DVD covers for the suspension video, and now we're working on an ad for a website” (Interview, 3/9/15).
- Tori: “The ultimate goal is to raise awareness for attendance We’re trying to get it back to where it needs to be” (Interview, 3/9/15).
- Epic Explosion: “When we go in we have this assignment on the computer of going through the lessons on the computers so we can learn how to use it for other stuff” (Interview, 3/12/15).
- Tony: “We’re starting with 3-D printing ... we had to make our teaching name tag ... we clicked ... we put the letters onto our key chain” (Interview, 3/12/15)

According to the research, when urban youth “perceive ... cohesive relationships between youth and adults, who are available to support them and represent positive role models, they can develop civic attitudes” (Lenzi et al., 2013, p. 51), and civic engagement pathways are easier to develop. I argue the participants’ use of “we” indicates that they identified themselves as connected to their CTCs, members of their CTC communities, and part of a cohesive group.

For example, Tori said community building was one of the most positive aspects of her Yardsville experience: “They open your doors to new people to meet” (Interview, 1/20/16). This idea of enhancing the “quality of relationships among the people” of a community and using technology to “contribute to society” through the use of digital

tools is central to Bers's (2012) definition of community building (p. 12). The community-building practices noted in the two CTCs can be further understood through the lens of bridging and bonding social capital (Putnam, 2000). As explained in this chapter's introduction, bonding (in this paper) refers to the community building that took place within the center, and bridging (in this paper) refers to the community building that took place between the center and other individuals or organizations outside it. Both of these elements were important to the creation of pathways to civic engagement. This is because, according to previous research, the more opportunities young people have to positively interact with others and build social trust, the more likely they will be to take collective action and participate in civic activities (Bandura, 1997; Dutta-Bergman, 2004; Hart et al., 2004; London et al., 2010; Putnam, 2007).

Participants built community in their respective CTCs and beyond them (i.e., bonding and bridging). Often this happened as a result of their content creations, but not always. For example, at both centers, participants ate together prior to the start of their sessions. Both Yardsville and Kingston provided food free of charge, and students most often gathered in the café areas and enjoyed a meal and laughs before they worked at their computers. Additionally, data from this study shows a range of community-building examples from both Yardsville and Kingston participants. Below, I highlight three examples: Yardsville's icebreaker activities, Tony's and Epic Explosion's participation in Kingston's showcase event as a bridging activity, and guest visits to both centers.

Icebreaker activities. Staff and leaders helped build community among Yardsville participants through icebreaker activities. During the course of this study, the Design Team participated in nine different icebreaker activities, which allowed the group

members to learn about each other in unique and personal ways. For example, during one icebreaker activity, the students had to describe someone in their life who had surprised them in some way (Observation, 3/25/15). Another icebreaker prompt asked what hero they would want to be. When the university students came to present the Info Playlist, they led the Yardsville participants in an icebreaker activity where they had to count to eight. The object of the game was to have each student count in order, and the last person to say “eight” was out. The trick was that students could not say the same number at the same time (Observation, 4/1/15). Still another icebreaker, discussed in Chapter IV, required the students to go outside and work together to get across a field of imaginary “lava” using cardboard boxes as a safe bridge. Although not directly related to content creation, these activities were intentional and meaningful ways to develop the students’ trust in one another; this was helpful when collaboration around content creation was necessary.

Guest visits to the community technology centers. As mentioned in Chapter IV, all participants experienced the bridging of social capital through guest visits to their centers. The guests I saw visit each CTC during the course of this study showed the participants respect and demonstrated genuine interest in their lives as urban youth, students, designers, and makers; this treatment contributed to the social trust component of civic engagement.

At Yardsville, these guests were most often involved in new content creation ideas. For example, an employee from the city’s school district visited to ask for design assistance on the city’s school calendar; a small business owner who ran a website about the college process came to work with the Design Team on the attendance campaigns;

university students came to share their Info Playlist; and members of a nonprofit group came to talk to the Design Team about future projects using media to improve public perceptions of young African Americans.

At Kingston, the guests were not as involved in content creation. One local art student shared her own content creation related to 3-D printing, something all of the Kingston students (including Epic Explosion and Tony) were doing at the time. Specifically, she showed her product, a 3-D printed, motion-activated face; discussed the process she used to create it; and talked about her college's programs and degrees in 3-D printing designs. Epic Explosion and Tony were both in attendance the day she visited, and although they were encouraged to ask questions, they did not. Other guests (e.g., politicians, tech leaders in the community, teachers, and administrators) took tours of Kingston while Epic Explosion and Tony worked. Interactions between my participants and these guests were limited (neither Tony nor Epic Explosion ever actually spoke to these guests), yet these visits still exemplified how Kingston supported the expansion of social networks for its young people.

Tony and Epic Explosion built community through content creation for the showcase. Tony's and Epic Explosion's community building was also made possible through Kingston's Showcase event. This event was specifically designed to welcome the center's neighbors, students' family members, donors, teachers, and others who might be interested in the work being done at Kingston. It also served as a marketing tool to encourage other young people to enroll. The idea behind the Showcase was for students to show off their work and answer questions about how they created the content. On a May evening in 2015, more than 100 people visited Kingston, met the students, and saw

or played with the content creations students had developed during the four-month program.

At the Showcase event, Tony showed off his Makey Makey video game foot controllers, and Epic Explosion showed off his 3-D printed character attached to the Makey Makey and sound controllers. Unfortunately for Epic Explosion, not all of his pieces worked the way he wanted them to; however, he was still happy to chat with the guests and describe his original plan. Tony's project worked well, and it attracted a number of children and adults who were interested in taking off their shoes to play a game with their feet. For a little over two hours that evening, Tony and Epic Explosion explained to strangers how the circuit systems worked, how they used Tinkercad and Scratch, and how they hoped to return to Kingston for future programs. Through this bridging opportunity, Tony and Epic Explosion saw how many people were interested in the work they did at Kingston. Likewise, these people had the opportunity to see how interested these urban youth were in technology and content.

Summary of Theme 2. These examples of community building illuminate a critical component of civic engagement; the feelings of connection and trust that arise from community building, through both bridging and bonding, have been cited as meaningful characteristics of youth civic engagement (Putnam, 2000; London et al., 2010). The study's participants had the opportunity to engage in a variety of community-building activities, digital and non-digital alike, which served as meaningful contributors to their civic engagement pathways.

Theme 3: Development of Civic Identities Through Content Creation

This section focuses on two different elements of the participants' civic identities that supported their pathways to civic engagement. First, I consider the participants' definitions of civic engagement and how they saw, and in some cases did not see, themselves and others as civically engaged. Next, I examine the participants' content creations and how they supported emerging civic identities, most notably through self-efficacy. Self-efficacy, which will be detailed later in this section, has been defined as the belief in one's capability to influence one's own life and produce the effects one desires (Bandura, 1997). The literature suggested that self-efficacy was a driving force behind civic engagement; if young people believed they had neither the power nor the means to make a difference, they would be unlikely put forth effort to do so (Balsano, 2005; Bandura, 2001; Shank & Cotten, 2013). The cross-case analysis of the data shows that the participants of this study developed self-efficacy from their civic knowledge, community building, and technical skills. In turn, this self-efficacy contributed to their civic identities in that the participants could envision their potential as positive contributors to society. In other words, the youth could identify themselves as civic engagers.

Defining civic engagement: personal and local. To best understand the participants' civic identities, it is useful to understand how they themselves defined, and did not define, civic engagement. They shared their definitions with me during one of the semistructured interviews in response to the question, "Have you ever heard of the term civic engagement? If so, what do you think it means?" I followed up these questions by asking the participants to identify people they considered civically engaged, and whether

or not they thought of themselves as civically engaged. Their responses provided insight into how these young people identified, and did not identify, as civically engaged. Their responses also reflected, in the participants' own way, the formal civic engagement definition I employed in this study: the inclination to act or the act itself in relation to issues relevant and meaningful to participants' communities. Despite those political scientists and researchers who argue that civic engagement primarily has to do with politics and government (e.g., voting, political activity, and/or knowledge more specifically about government systems), the participants' perspectives underscored their more personal and local understandings of civic engagement.

Of the seven participants, only Tony had previously heard of the term civic engagement. The remaining six students were unable to provide a definition of the term. Next, I asked them to brainstorm what it might mean, using words that were familiar to them. For example, Melanie, Janelle and Nicole all said they thought of the word civil, and from there, the students were able to brainstorm definitions for civic engagement. Nicole's definition was "people communicating with each other" (Interview, 3/30/15), and Melanie said, "engaged in the community" (Interview, 3/20/15). Tori's definition of civic engagement was specifically about being courteous to neighbors, and Aliya, after thinking of a civic center, said she thought it might mean "being engaged with a group of certain group of people positively" (Interview, 4/20/15). These definitions were based on their own life experiences, as well as their individual assumptions regarding the meaning of the words.

Interestingly, all of these definitions pointed to personal and local connections. In other words, none of the participants discussed civic engagement in political, global, or

national contexts. Nor did any of them reference, as components of civic engagement, holding an office, voting, signing petitions, participating in protests, or making policy. Much of the literature about civic engagement referenced such tenets, yet these concepts were absent for these participants.

Furthermore, when asked to consider people they know whom they consider to be civically engaged, only Janelle's response about her friend, a "teen activist" who "participates in Congress meetings," touched upon this idea of political action. Each of the other responses emphasized community-based action. Tony, for example, identified his father as someone civically engaged "at certain times"—for example, he considered his father to be civically engaged when helping his neighbors during a snowstorm. Nicole said she thought her mom was civically engaged because of her volunteerism "in a lot of different communities," and Melanie and Aliya stated the only people they knew who were civically engaged were Yardsville's instructors, directors, and a few former students. Epic Explosion was the only student unable to think of someone who he considered to be civically engaged; he said that while he has seen people on television "who help a lot," he did not personally know anyone that he would consider civically engaged. Although the other students considered "helping" an important behavior related to civic engagement, Epic Explosion did not make this connection (Interview, 3/12/15).

The participants' definitions of civic engagement highlight that at the beginning of the study, most were not able to explicitly define the term when presented with it. However, personal experiences and local community played a key role in their emerging understandings of civic engagement. At least five of the participants used community as part of their civic engagement definitions and/or part of why they identified particular

people as being civically engaged. Given the centrality of the concept of community to their understandings of civic engagement, the following section elaborates further on their thoughts about it.

What is “community”? When I asked the participants to describe their communities, all seven of them described their neighborhoods. Regardless of their ages, genders, CTC affiliation, or life experiences, the participants believed the location of their homes served as the center of their communities. For example, Janelle described her community as a “green patch in a dry field,” (Interview, 5/20/15) and explained that the blocks surrounding the street she lived on were filled with boarded-up buildings. She also lived in a food desert, where few options for food shopping or dining existed. Her description showed she recognized the comforts of her own home in the midst of an otherwise uncomfortable part of the city. Tori’s perspective on her community was that it was not the cleanest because people do litter a lot, so it's not the cleanest community, but there's a lot of families around the community. And parents, they look out for their kids. There’s also a lot of crime and it can be dangerous for kids (Interview, 5/11/15).

Tony described his community as “diverse, intertwined, close, and helpful” (Interview, 5/7/15). When I asked Epic Explosion to describe his community, he said:

I describe my community to have a lot of people I know and a lot of people who are friendly and always likes to play games. Also I describe it to have a lot of flowers and a lot of buildings around it (Interview, 5/7/15).

Melanie said about her community, “There are a lot of different cultures in my community and ethnicities. It's not a bad community, but it's not the best community” (Interview, 5/11/15).

The participants’ focus on their immediate neighborhoods, when asked to describe their communities, is similar to the way in which most of them understood civic engagement; it is local and personal. These conversations did not focus on the country or even the state, but on a few blocks within a city. The participants seemed not to see themselves as part of a larger community that might rally around a particular politician or new law; rather, they conceptualized civic engagement in light of what could happen on their blocks. This became evident as the participants spoke about how they saw themselves, or did not see themselves, as civic engagers. The section below will elaborate on this aspect of the participants’ definitions of civic engagement: the emergence of civic identities.

Development of civic self-identities and self-efficacy. Despite some of their initial inclinations to not consider themselves civically engaged, the participants in this study developed individual and unique civic identities through their uses of digital tools and the technology-mediated behaviors related to those uses. For this study, I borrowed from Rubin (2007) to define civic identity as the sense of who one is in relation to one’s local communities (e.g., schools and cities) as well as one’s national community. Initially, many participants did not describe themselves as civically engaged, although during the course of the study they engaged in behaviors that fit classic definitions of civic engagement. For example, during one of my first interviews with Aliya, she told me she was more of a “behind the scenes” (Interview, 4/20/15) person when it came to civic

engagement. Yet a few weeks after that interview, she and Tori attended a town hall meeting about keeping an arts program in the city's public schools. A few weeks later, Aliya pitched a potential campaign idea to a local nonprofit. Likewise, Janelle claimed she was not civically engaged "all the way." Yet she was asked to sit on a panel in front of hundreds of people to discuss the disproportionate suspension rates for African American students, and just a few weeks later, her essay was selected to be read on NPR. Nicole, too, said she didn't "really consider" (Interview, 3/20/15) herself to be a civically engaged person, yet she remained incredibly active with the attendance campaign for the duration of the study, and she volunteered during a Yardsville fundraiser where she met with donors, provided tours, and answered questions about the types of products they made at Yardsville. In each of these instances, these Yardsville participants acted in ways that, by most definitions, would be recognized as civic engagement.

Furthermore, as discussed in Theme 1, the participants in this study had the opportunity to build civic knowledge, practice collaboration and communication skills, build community, and develop technical skills through their content creations. Through each of these opportunities, students were afforded opportunities to develop self-efficacy. According to researchers, self-efficacy has been shown to be a strong indicator of one's trajectory towards civic engagement (Balsano, 2005; Bandura, 1997; Chung & Probert, 2011; Shank & Cotten, 2013). The overarching belief has been that unless young people believe their actions can have impact and lead to desired changes, they are unlikely to develop civic identities and/or become civically engaged (Balsano, 2005).

Research has shown that for many urban youth, self-efficacy does not come naturally (Chung & Probert, 2011). However, the data in this study showed that the participants'

CTC experiences provided them opportunities to promote self-efficacy through their technology use. The participants' civic knowledge, civic skills, and opportunities to build communities supported their emerging civic identities. Below, I elaborate on how the earlier-discussed themes of participants' civic knowledge, civic skills, and community building being developed by their content creation also contributed to self-efficacy and emerging civic identities. I also provide examples to illustrate the different ways in which participants' content creations directly or indirectly contributed to their civic identities and thus supported their civic engagement pathways.

Tori's emerging civic identity. Tori's participation at Yardsville showcases how the community-building experiences and technological competencies she gained there contributed to her self-efficacy, which, in turn, supported her civic identity. As discussed in Chapter IV, Tori was a transgender young woman who had experienced bullying for years. She often spoke about the comfort she felt at Yardsville and the fact that at Yardsville, she could do good work. She explained:

It [Yardsville] gives you certain places and gets you certain things that you need to express yourself. ... It can help you be creative and get your point across with what you do here. If you're working on something for your community, you can make flyers for something that can help you do something better for your city (Interview, 5/11/15).

As for many of the participants, this feeling of community provided Tory personal wellbeing and high assurance in her own capabilities. This support, according to previous research about how to civically engage young people, is essential (Lakin & Mahoney, 2006; Lenzi et al., 2013; Putnam, 2000).

At the same time, Tori's growing technical skills, primarily in videography and editing (e.g., Adobe Illustrator), gave her a sense of confidence and inspired her to use those skills to help others. In particular, she wanted to create documentaries to support victims of bullying. This confidence represented a shift in her identity, since she initially did not recognize the types of civic engagement activities in which she had participated through Yardsville (Interview, 3/9/15). Although in that first interview, early in the study, she had contributed to an attendance campaign, discussed relevant civic issues, and attended a town hall meeting, she had not made connections between those activities and the concept of civic engagement. When we initially talked about the skills she was learning at Yardsville and how they could be used for civic engagement, Tori suggested “the skills we learned with Illustrator, they could help us, but I don’t see how it could help us with the community” (Interview, 3/9/15). Ten months later, her confidence as a civic engager was noticeably different:

[Yardsville] enabled me to go out and help other students who probably are struggling with it or who probably want to go into the field, but are too scared because they're probably not understanding it or they're not getting it. Luckily [Yardsville] showed me and I can help them and show them how to do it (Interview, 1/20/16).

During this interview, she spoke about helping others and her plans for the future: “I do want to do documentaries, and as I travel the world, I want the documentaries to be brought in and I want my documentaries to play everywhere” (Interview, 1/20/16). Tori’s ultimate goal for her documentaries is “to raise awareness and show people that they have feelings too, or we have feelings too, and you should just look out for it” (Interview,

1/20/16). Although Tori saw herself leaving her city, she planned to return at some point and give back: “I think about leaving [my city] a lot, but when I leave, I also want to come back and help. I want to come back and help more than anything” (Interview, 1/20/16). Tori’s experience using tools such as Final Cut Pro, Illustrator, and Premiere promoted bridging community (e.g., she worked with others outside of Yardsville), bonding community (e.g., she also worked with others inside Yardsville), and self-efficacy (e.g., she learned skills and received recognition her work). This collective group of experiences shaped Tori’s identity as a civic engager, thus developing her pathways to civic engagement.

Melanie’s emerging civic identity. Melanie’s participation at Yardsville supported her emerging civic identity in that the technological and civic knowledge she acquired there motivated her to share her voice beyond its walls. Melanie talked about the positive changes she wanted to make in the future. According to Melanie, prior to her Design Team activity, she was unaware of so many issues that needed attention. For example, when I asked her to tell me what she did at Yardsville, she said:

We do a lot of things to help the community, like help children when it comes to what they should and shouldn't do like attendance, showing up for school, and ... not getting suspended. We make posters, badges, video games, board games, etc., just to show people how important these things really are and to show not just students, but even teachers how suspension is getting out of hand and show students how attendance is important (Interview, 3/20/15).

Through these actions, Melanie explained, she learned a great deal and felt more civically minded. She told me she hoped to use the technical skills she learned at

Yardsville to create a website for her peers. This declaration reveals Melanie's self-efficacy; she believed she could, as Bandura (1997) explained it, exercise her influence over events that affect her life.

I really wanted to make my own website. I think that Illustrator and stuff, learning more about it than I already knew, it helped me a lot, so I might actually make a website. It will be like for teenagers. Not a social media site, because we have enough of those, but like something informative about anything, just probably about everything that we do here. I could just do that, suspension, attendance and then do other stuff that interests me like crime (Interview, 3/20/15).

As demonstrated by these interviews, Melanie's participation at Yardsville provided her the experiences to help her see herself with the potential to civically engage.

Summary of Theme 3. In summary, this theme highlighted how local and personal experiences underscored participants' definitions and understandings of civic engagement. Furthermore, this theme illuminated the ways participants developed civic identities, mostly through self-efficacy built during the process of content creation. The specific examples of Janelle's radio shows and Melanie's involvement in video production both speak to the idea that through their content creations, participants developed civic identities that can act as pathways to civic engagement.

Chapter V Summary

The cross-case analysis revealed that through their content creations, participants developed pathways to civic engagement, which in turn supported the main themes discussed above: civic skills, community building, and the emergence of civic identities. In particular, the cross-case analysis revealed that participants were able to acquire civic

knowledge, communication, and collaboration skills. Additionally, participants built community with their peers within the centers and used their content creations to build community with others outside their centers. These relationships served as bridges between the outside agencies or individuals and the participants themselves. Finally, these experiences in sum resulted in some of the participants seeing themselves as civic engagers and having the potential to make positive changes using the skills they learned at their CTCs. The work they did at their CTCs helped develop their motivation and self-efficacy. The following chapter makes recommendations for research, policy, and practice based on the findings described here.

Chapter VI

DISCUSSION AND RECOMMENDATIONS

Introduction

The introduction of this dissertation pointed to the following problem: Too many urban youth lack opportunities to “fully develop the skills and dispositions necessary to participate in civic life,” and they are less likely, compared to wealthier youth, to “reach their potential as civic actors” (Hart & Kirshner, 2009, pp. 107-109). My research, presented in the preceding chapters, set out to explore how seven urban youth might use digital tools at two CTCs to develop pathways to civic engagement. The findings show that it was possible for the study’s subjects to participate in civic life through their content creations, which supported their development of skills, community building, and emerging identities. This chapter provides a summary of these three themes, a discussion of the results, and recommendations for future research, policy, and practice.

Review of Emerging Themes

I conducted this research using the PTD framework (Bers, 2012) as a lens, which allowed me to best understand how youth used digital tools in positive ways that contributed to their civic engagement pathways. Out of the cross-case analysis, the following three themes emerge: the development of civic skills through content creation, namely civic knowledge, collaboration and communication; community building through content creation; and the emergence of civic identities through content creation.

Theme 1: Development of Civic Skills Through Content Creation

The participants developed civic skills through their content creation, specifically civic knowledge, collaboration, and communication. Many researchers argue that in the absence of such civic skills, it is unreasonable to expect youth, urban youth in particular, to become civically engaged (Foster-Bey, 2008; Hart & Kirshner, 2009).

Civic knowledge. Data from this study reveal that Yardsville participants developed an awareness of issues relevant to themselves, their peers, and their communities (i.e., civic knowledge). As mentioned in Chapter V, Tony and Epic Explosion were exposed to civic knowledge in various ways at Kingston, but it did not contribute to the development of their civic engagement pathways. At Yardsville, however, the participants' content creations relied on their knowledge of civic issues, such the school-to-prison pipeline and train safety. Increasing civic knowledge has been identified as a way to help urban youth make gains against the civic knowledge or civic opportunity gap (Kahne & Middaugh, 2009). This study's finding supports other research on civic knowledge acquisition in CTCs (e.g., Hick, 2006; Pinkett, 2003), which showed that through participation in CTCs, youth and adults were afforded opportunities to learn more about places to vote, educational and financial resources, and the location of particular agencies where they could submit government-required paperwork.

In addition to becoming aware of issues themselves, the Yardsville participants focused on raising others' awareness about these issues through their Design Team projects. To accomplish this goal, they had to better understand their peers' perspectives on these issues and consider the most effective ways to share their messages. In this way, the participants felt more invested in their city's young people and found pathways to

civic engagement through their newly acquired civic knowledge and the knowledge they wanted to pass on to others.

Collaboration. According to CIRCLE (2010), collaboration is recognized as a key component of civic engagement because it is understood that many individuals need to work collectively to address problems (Nygren, Kwon, & Sanchez, 2006). In the present study, the CTC participants had multiple opportunities to practice their collaboration skills. Participants collaborated with their peers, as well as with their instructors and with others outside the CTCs. Both Yardsville and Kingston participants' collaborations centered on digital content creations, including the webisode, web advertisements, 3-D printed items, Makey Makey creations (i.e., circuit products), and Scratch games.

At the same time, the collaboration practices differed between CTCs. For example, at Yardsville, collaboration was an organic and expected component of each project; participants rarely worked alone. At Kingston, collaboration was more on-demand. Despite these differences, participants at both CTCs relied on collaboration, a skill that has been identified as important to the development of civic engagement pathways, to complete their content creations.

Communication. Communication is another skill that has been cited as key for civic engagement (Bennet, Freelon, & Wells, 2010; Rheingold, 2008). This is because the majority of best practices around civic engagement have been shown to involve discussion (Kahne & Middaugh, 2009; Kwon et al., 2014). As Hess (2009) argued, "speech [and] democracy are inextricably linked" (p. 60).

This study shows that participants practiced communication as part of their content creation, and their communication supported the development of their civic engagement

pathways. Both Yardsville and Kingston participants were afforded various opportunities to practice communication skills, albeit differently. For example, Kingston participants more frequently used web tools to communicate with others about their content creations. For the Yardsville participants, communication was much more localized. Large-group brainstorming sessions and public speaking were a regular part of the Yardsville routine. In addition, none of the participants at either CTC used social media for civic engagement. This finding is unique in that it does not align with much of the current literature about youth and civic engagement via digital tools (e.g., Bennett et al., 2010; Kwon et al., 2014; Middaugh & Kahne, 2013). This will be discussed in more detail in the Discussion section below.

Theme 2: Community Building Supported Through Content Creation

Findings from this study demonstrate that participants from each CTC experienced community building as a result of their content creations. This community building took place in ways that Putnam (2000) called bonding and bridging of social capital. Here, I use bonding to mean the development of participants' relationships with their peers and instructors inside the CTC; and bridging is the networking that occurred with others outside the CTC. This bridging and bonding afforded the participants opportunities to feel connected to those around them, and the feelings of social trust that emerge from community building have been shown to be important factors in the development of civic engagement pathways (Atkins & Hart, 2003; Balsano, 2005; Levinson, 2010).

Participants at both centers expressed their comfort with their peers and instructors. Additionally, the participants experienced various opportunities to bridge communities through their content creations, which provided them with an opportunity to feel part of

something beyond the center itself. These experiences at both centers supported the development of civic engagement pathways in that they allowed the participants to network in new and meaningful ways, imperative steps to increasing civic engagement for urban youth who have often been shown to fail to network in this way (Larsen et al., 2004; Lenzi, 2013; London, et al., 2010; Putnam, 2000).

Theme 3: The Development of Civic Identities Through Content Creation

Through the development of civic knowledge, collaboration skills, communication skills, and community building, some of the participants developed civic identities. These identities became apparent as participants spoke about their plans to be agents of change, and how they would use the technical and social skills they learned at the CTC to make this change. Here, I highlight how the participants' content creations supported their civic identities, most notably through the development of self-efficacy.

Civic identities and self-efficacy. Civic identity was defined in the previous chapter as the sense of who one is in relation to one's local communities (e.g., schools and cities) as well as one's national community. Many researchers have agreed that civic identity is an important factor in an individual's civic engagement, in that without seeing themselves as part of their city or nation, they are unlikely to contribute. In that same vein, many researchers have argued that civic identities emerge mostly when individuals feel capable of making meaningful contributions to their community, and that those contributions are valued. In other words, unless young people feel their contributions can be taken seriously, they have been shown to be unlikely to engage at all (Bandura, 1997). Self-efficacy plays an important role in this process.

Self-efficacy has been identified as a critical component to youth civic engagement, according to much of the literature (Bandura, 1997; Shank & Cotten, 2013). Urban youth in particular, who often feel like their voices go unheard, need to develop skills and attitudes that will strengthen their beliefs in their own potential as change agents. For many of the participants in this study, the content creations themselves and the processes of creating the content presented them opportunities to develop self-efficacy; they became able to recognize their capabilities to promote civic change. This development emerged from both their technical skills and their civic skills developed at their CTCs.

Each of the themes summarized above emerges out of the data analysis and addresses the research question: How can urban youth use digital tools at CTCs to develop pathways to civic engagement? They developed their pathways for civic engagement through civic skills, community building, and emerging civic identities. Below, I discuss these findings in light of past research and explain how these findings contribute new perspectives for civically engaging urban youth with digital tools at CTCs.

Discussion

This study's intention was to explore the ways in which urban youth used digital tools at two CTCs to support the development of pathways to civic engagement. The data reveal that the seven participants' content creations supported their acquisitions of civic skills, community building, and emerging civic identities, and these contributed to the development of their civic engagement pathways. These findings are discussed below in light of what is known, and not known, about urban youth, civic engagement, and the use of digital tools. This discussion will serve as the basis for the Recommendations section that follows.

Research has shown that low-income schools contribute to the civic engagement gap (Levinson, 2007): the divide that exists between those who are most likely to engage (e.g., wealthier white youth) and those who are not (e.g., poorer, African American youth). The civic engagement gap can be attributed to a number of factors, including but not limited to school officials' decisions to spend more time on math and reading over civic education, parents' levels of education and civic involvement, and the overall lack of opportunities for low-income youth made available both in and outside of schools.

This study's primary finding suggests that the lack of opportunities outside of schools can be mitigated through content creation using digital tools at CTCs. This finding is important because it shows how CTCs can contribute to positive youth development in ways not yet detailed in the literature: through civic engagement pathways. The findings of the study contribute to the literature in the following ways: it recognizes the value CTCs can bring to youth civic engagement, it identifies content creation as a critical component of civic engagement pathway development at CTCs, and it highlights the role of the face-to-face environment for the development of civic engagement pathways.

Recognizing the Value Community Technology Centers Can Bring to Youth Civic Engagement

The study presented here builds on the notion that community-driven centers can contribute to young people's civic identities (Shiller, 2013), and they can promote young people's positive development through civic engagement (London et al., 2010). However, this study recognizes CTCs as places where young people can specifically use digital tools to support the development of civic engagement pathways through civic skills, community building, and civic identities. As urban communities, in particular, struggle to

find ways to more positively engage their young people, CTCs not be overlooked as valuable and viable spaces where civic engagement pathways can be developed in conjunction with 21st century digital skills.

Recognizing CTCs in this way adds to the way current literature focuses on CTCs as places most noted for the following: how they bridge digital divides, offer mentorship, provide access to resources (e.g. employment opportunities, education materials, housing and government documents), and help young people feel safe and welcome. These affordances of CTCs are invaluable, and CTCs should continue to be recognized for them. Yet, the findings of this study suggest CTCs can be additionally recognized for their potential contributions to young people's civic engagement pathways and, ultimately, the role they could play in the strengthening of 21st Century democracy through the use of digital tools.

Identifying Content Creations as the Core of Pathway Development

Previous research has suggested that young people benefit from CTC participation in the following ways: technical skill development (Kafai, Peppler, & Chiu, 2007), mentorship (Barkhuus & Lecusay, 2012), and the opportunity to share their voices (Goodman, 2003). While these benefits were also made available for this study's participants, the content created at the CTCs provided specific opportunities to develop civic engagement pathways. Through content creation, participants in this study developed civic skills, built community, and began to identify themselves as having the potential to engage civically; self-efficacy was cultivated.

In particular, participants at Yardsville engaged in content creation that was focused on civic issues; this made the pathways to civic engagement more direct at this CTC.

Participants learned about school attendance and suspension rates, for example, in order to create meaningful content. Conversely, participants at Kingston did not create content focused on civic issues. This did not mean the participants could not create civically-orientated content, since participants of Kingston (but not this study) did. Yet, it is to say that the centers' missions played a role in the scope of the content creations and to the extent these creations specifically related to civic topics.

Although Papert's (1993) constructionism theory did not focus on civic engagement, its core tenets can help us understand why content creation (i.e., construction of digital products) was so central to the themes identified here. For example, Papert (1993) suggested, "in the most fundamental sense, we, as learners, are all bricoleurs" (p. 174). In other words, we learn by putting together the resources and materials made available to us. The findings of this study suggest this idea, too, applies to the components of civic engagement (civic knowledge, collaboration, communication, community building, and civic identity) just as much as it does to 3-D printing, Adobe Photoshop, or animation kits. The entire process of content creation, as well as the creation itself, afforded the opportunities necessary to place these young people on pathways that led them directly, and indirectly, to civic engagement; they constructed their own products and experiences around those products. The homework assistance, career support, technical skills, and mentoring provided through CTCs is certainly invaluable for young people. However, the findings of this study showed it was the content created by the participants that played the most important role. Therefore, constructionism can provide a useful theoretical and analytical framework for future research in the area of CTCs and civic engagement.

Affordances of the Face-to-Face Environment

Much of the recent literature about youth civic engagement has considered the potential of online tools (e.g., social networks, Wikipedia, podcasts, blogs) as ways to overcome particular barriers to participation. Research in this area has shown social media can provide entry into a participatory culture for individuals who aren't normally able to access particular social connections, information, or opportunities to express their artistic creations (Jenkins et al., 2009). Whereas some young people from lower-income homes, in particular, had limited outlets, social media and other Web 2.0 tools have opened doors for "affiliations, expressions, and collaborative problem-solving," for example (Jenkins et al., 2009, p. 9). In light of this literature, it is worth noting the participants of this study did not use social media in the CTCs. Yardsville participants were not allowed to use their phones (where social media is often accessed), nor did they use social media platforms as part of their content creations. Kingston participants were able to use their phones, but social media was not part of their content creations either.

Rather, both CTCs relied more heavily on the face-to-face environment. In this environment, opportunities for community building were accessible through bridging relationships with those outside the center as well as bonding with peers inside the center. Guests, icebreaker activities, meal sharing, and collaborations fostered connections to others and helped establish social trust: meaningful characteristics of youth civic engagement (Putnam, 2000; London et al., 2010). Research shows that online engagement is beneficial for those who already have some of the civic skills and dispositions etc. For those who are already disadvantaged by digital divides and the civic engagement gap, the development of the types of civic knowledge, skills, and identities

that the participants in this study experienced might not be as possible through online engagement only.

In other words, the face-to-face CTC environment provided affordances in two primary ways. First, it provided the exposure for some of the participants to civic issues/knowledge, skills, opportunities to build community, and the chance to develop civic dispositions. For example, in the absence of the face-to-face environment, opportunities to converse with owners of companies, school administrators, or college students might not have been possible. The feedback and collaboration sessions may also not have been possible, or as fruitful, in the absence of the face-to-face nature of the CTCs. These organic and natural discussions were possible because the CTC brought the participants together, in person. In some cases, the participants' togetherness inspired civically-driven content and discussion.

Second, the face-to-face environment of CTCs provided opportunities to use digital tools. The participants of this study learned how to use graphic design tools, audio and video equipment, coding, and 3D printing. The hands-on experience, the mentoring, and the feedback during the iterative processes are affordances of the CTC not always made available in the same way through online experiences. Therefore, participation at a CTC should be strongly recognized as an opportunity for young people to acquire the civic skills and digital skills that could then be used outside the CTC to further develop pathways to civic engagement. Community technology centers could serve as a first step to online civic engagement practices. Based on this discussion, as well as the others provided above, recommendations for research, policy, and practice are provided below.

Recommendations

Future research, policy, and practice at the intersection of CTCs, technology, and civic engagement can be informed by the results of this study. Here, I make recommendations based on the data and the discussions included above.

Research

My recommendations for research include shifting from the current focus on youth's online civic engagement practices to revisit the face-to-face advantages made possible through CTCs, focusing on the long-term impact of youth participation at CTCs, and exploring how the relationship between the PTD technology-mediated behaviors may be further expanded and developed.

Researching the face-to-face environment of CTCs to develop civic engagement pathways. This study found that the face-to-face environment helped develop civic skills (e.g. collaboration and communication) and community building both within both centers (e.g. guest visits to the CTC) and beyond (e.g. field trips). Whereas much research has been conducted around youth civic engagement and technology use, few studies have explored the specific relationship between face-to-face technology use among young people and its potential with regard to civic engagement (London et al., 2010). This raises questions such as, in what other ways might the affordances of the face-to-face CTC environment be advantageous or detrimental to the development of civic engagement pathways? Based on the findings of this study, I recommend that future research focuses on better understanding if/how CTCs can effectively support civic engagement pathways, especially among urban youth.

The findings of this study support prior research that shows technical skill development and mentorship made possible in the face-to-face environment are crucial components of positive youth development, in particular for urban youth who are susceptible to various digital divides (Hick, 2006; Lakin & Mahoney, 2006; London et al., 2010). For example, the participants of this study learned technical skills (e.g. game coding, graphic designing) as a result of instruction, trial and error, and collaboration with the peers and instructors in the CTCs. This said, in what ways might mentorship and the development of technical skills differ through online engagement? This study found the face-to-face environment of the CTC provided real-time feedback and the advantages of personal relationships with those who offered the feedback, yet, nearly no research exists to explore the differences in how CTCs can equip young people for civic engagement compared to online engagement. As technology grows more ubiquitous in the lives of young people, a research agenda around the face-to-face environments in comparison to the online environments for the development of civic engagement pathways would be invaluable.

Longitudinal studies of Community Technology Center participation.

Longitudinal data about how urban youth might remain civically engaged after their participation in a CTC comes to an end are missing from the research literature. Whereas this study found that particular pathways to civic engagement were made possible as a result of the young people's uses of digital tools at their CTCs, a future research study could focus on whether and how these pathways manifest into pro-social adult behaviors. The literature does suggest that when young people are introduced to civic engagement and supported in exploring it, they are more likely to be more civically engaged as adults

(Balsano, 2005; Youniss & Yates, 1997). However, to what extent is this true when certain pathways are developed through CTCs? In other words, does digital tool use, a specific 21st-century skill, have any bearing on the long-term civic engagement practices of young people? This is an area worth exploring if, in fact, we seek to engage those who are most at-risk of disengagement. Could the use of technology provide a stronger link to the future of civic engagement for urban youth, and if so, what does that link look like? To date, no longitudinal studies exist in this area, and I believe this is an area worth pursuing.

Development of the Positive Technological Development Framework. The final recommendation I make here is wider use of the PTD framework (Bers, 2012) to specifically understand young people's uses of technology for the purpose of civic engagement. This framework served me well, especially during the within-case analysis. It allowed me to understand the participants' actions with technology, specifically, and apply them to the skills most identified with positive youth development and civic engagement.

That said, future researchers may want to reconsider the structure of this framework, and specifically, the relationship between its technology-mediated behaviors. The framework considers content creation as its own behavior, separate from community building, communication, and collaboration, for example. However, this study's findings demonstrate that content creation is at the heart of the development of civic engagement pathways. The other behaviors were supported by the participants' content creations; therefore, the content creations also helped participants find opportunities to develop in the other ways (e.g., acquire civic skills, build community, and develop emerging civic

identities). As such, future research may want to explore more closely the relationship between and among the technology-mediated behaviors and content creation to develop a framework that takes into consideration the interdependence of those behaviors.

Policy

The policies put forth by local governments and schools can have tremendous impacts on young people, and I believe policies specifically geared toward urban youth, in particular, can benefit from this research. Most notably, the findings of this study strongly support the idea that policies be written with the idea that young people are assets. I also suggest policies forming stronger partnerships between urban youth and universities.

Partnerships between universities and community technology centers. Based on this study's findings, I recommend the development of partnerships between universities and CTCs. More specifically, I urge universities with teacher preparation programs to consider the role they can play in the strengthening of CTCs. Such a partnership currently exists through the UC Links program out of Berkley's School of Education. This program has been successful in supporting the College's students and faculty, while at the same time providing meaningful support for thousands of young people across the state of California.

Partnerships between universities and CTCs benefit both the university and the CTC in a variety of ways. First, teacher candidates will have the chance to work with young people in urban settings, an opportunity not always made possible through traditional teacher candidate placement programs in professional development schools. The CTC will provide a less intimidating environment in which teacher candidates could forge personal relationships with and learn to better understand urban youth. These one-to-one

interactions will reduce the apprehension some teacher candidates may feel about teaching a diverse population, and inspire them to consider a career in urban education.

At the same time, teacher candidates working in CTCs could be exposed to unique and meaningful ways K-12-age students can use technology to enhance learning and civic engagement. Technology integration is a critical focus area for today's teacher candidates, and while universities provide coursework in this area, the opportunity to work hands-on with the young people they will one day teach could provide teacher candidates with new perspectives on the potential of both the technology itself as well as the students' potential to use it.

A university-CTC partnership would also benefit K-12 urban students who may have limited access to information about higher education. The Pell Institute, for example, found that urban youth are less likely to attend college compared to their wealthier peers (Cahalan, Perna, Yamashita, Ruiz, & Franklin, 2016); this is something that educationalists have referred to as the civil rights issue of our time. In addition to the financial strains, this gap inequity in higher education is also due, in part, to a lack of exposure and an overall lack of knowledge about the college process. If urban youth in grades K-12 had the opportunity to find and build relationships with college students, perhaps their likelihood of attending college could improve. A university-CTC partnership could intentionally, or unintentionally, create a college pipeline for these young people.

Practice

As Chapter II noted, researchers look at civic engagement through a wide range of practices. In addition to political activism (which did not emerge out of this study),

Sherrod and Lauckhardt (2008) suggest most of the practices (identified in that wide range) can be accounted for in two primary ways: through a concern for others (volunteerism and community service), and through feeling part of a group (i.e., connectedness). Data from this study shows one way civic engagement pathways were developed was through the participants' concern for others and their feelings toward their CTC group resulted in community building. Here, I make practical recommendations for those who seek to encourage civic engagement among urban youth through the use of digital tools. These recommendations are framed by the results of this study, which show the affordances of the participants' content creations as well as the importance of community building.

Content creation at the center of civic engagement pathway development. As explained in the Discussion section, the participants' content creations supported their pathways to civic engagement in various ways. In particular, those at Yardsville learned civic knowledge and developed civic identities because of the content they created around civic issues. Additionally, all of the participants were afforded opportunities to develop communication skills, collaboration skills, and community building around the content they created.

Here, it is recommended that 1) content be created around civic issues and 2) those creations take place through a Constructionist approach. First, Yardsville participants developed campaigns about school attendance, safety on train tracks, and issues around the school to prison pipeline. The recommendation here is that in order to best support the development of civic engagement pathways, CTC participants should have the

opportunity to discuss and/or be made aware of community problems that need solutions. This will promote the sharing of civic knowledge.

The participants could then create content around the solution using a constructionist approach. The trial and error involved in the iterative process of Constructionism serves as means through which the participants can made aware of their own potential to use technology in meaningful ways. By allowing the participants to have control of their learning, and ultimately the success of their digital products in light of the identified civic problem, this will help support their self-efficacy and their civic identities.

A focus on community building. As mentioned above, the findings of this study support previous research that stressed the importance of community building for the positive development of urban youth, in particular when it comes to civic engagement (e.g., Balsano, 2005; Pinkett, 2003). Here, I differentiate between two types of community building: the bonding that took place among participants and instructors inside the CTC, and the bridging that occurred between the participants and others outside the CTC. Both bonding and bridging led participants to experience social trust, a meaningful contributor to civic engagement. It also led to an expanded network of people, which, according to Putnam (2007), fosters motivation to work towards civic issues. For this reason, CTCs should develop activities and content creations with community building in mind in order to promote civic engagement pathways.

Examples of community building activities could mimic the types of activities observed in the study presented here. Bridging relationships can happen as a result of includes inviting guests into the CTC from the neighborhood, city, or larger community. These guests could be from the non-profit sector and focus more on connections to local

needs, and/or the guests could be from the business sector and support internships or job placements. In the cases of the CTCs studied here, some guests visited one time only, and facilitated brainstorming and feedback sessions. Other guests were regulars, and they served more as mentors to the participants. Either way, having individuals from outside the CTC opens doors for the young people inside the CTC and provides opportunities to bridge social capital (Putnam, 2000).

The literature tells us that bridging and the development of social trust with others outside the peer group is not enough. Young people must feel comfortable with each other; they must develop social trust with their peers, too. The ice breaker activities, the sharing of meals, and the collaborations around content creations that were observed during this research study exemplified simple yet effective ways to build community. Furthermore, the development of peer networks outside the CTC could prove helpful in community building. In other words, once the CTC participants stop attending the CTC, how might certain relationships be kept alive? Here, social media could play a vital role in helping young people stay in touch with their CTC peers. These ongoing connections outside their CTCs would provide an avenue for the young people to remain inspired and engaged with those outside their regular social group, with strongly positive benefits

Conclusion

This study's findings reveal that for the seven participants studied, the use of digital tools at CTCs contributed to the development of civic engagement pathways through the acquisition of civic skills, community building, and emerging civic identities. This chapter highlighted how these findings can be used to inform future research, policy, and practice. I make these recommendations to propagate the importance of civic

engagement, particularly in the lives of urban youth. Furthermore, these recommendations recognize the value of technology's role in the development of civic engagement, specifically in the face-to-face environment of CTCs, and suggest CTCs serve as vital spaces to develop civic engagement pathways.

Democracy works best when all citizens are active participants in civic life. Too often, however, many citizens lack the opportunity to participate. The civic engagement gap puts young people from low-income neighborhoods at a disadvantage because they lack the same “opportunities, experiences, skills, and knowledge” needed to prepare youth for meaningful civic engagement (Jenkins et al., 2009, p. xii). As a result, these young people tend to become disenfranchised and can act out in ways such as those observed during the Baltimore unrest in April 2015, described in the introduction of this paper. In contrast to those riots, if young people can find positive connections and become engaged with their neighborhoods and cities, like this study's participants were able to do, benefits could follow. Among the cited benefits of civic engagement are greater high school graduation rates and college attendance, lower instances of crime and teen pregnancy, and more prosocial behaviors into adulthood.

For now, the findings from this study demonstrate how young people can use digital tools at CTCs to develop pathways to civic engagement through civic skills, community building, and emerging civic identities. I look forward to future research that could build on this work and continue to explore ways in which technology can best support the civic engagement, and ultimate positive development, of urban youth.

APPENDICES

Appendix A

Informed Consent Form

Dear Parents,

My name is Lisa Twiss, and I am a doctoral student at Towson University. I will be conducting a research project at ____ (name of center here) ____ designed to study how your child's technology use is connected to his/her development of civic engagement. In other words, the goal of this study is to explore how the work being done at ____ is helping to make your child more aware and involved in community issues. I request permission for your child to participate. The study consists of me observing your student at ____ (name of center) ____ during his/her regularly scheduled weekly sessions for the duration of the program. Additionally, I will conduct two interviews with him/her that should last no more than 25 minutes each. The first interview will take place during the first few weeks of the program, and the second interview will take place during the last few weeks. These interviews will be focused on your child's thoughts about why he/she participates in the program, what he/she likes about the work being done and how your child sees this work impacting the larger community. All research will be done directly on the site of ____ (name of center) ____ and there are no risks involved.

Interviews will be conducted by me and videotaped and/or audiotaped by me only. No real names will be used. In fact, the children will be asked to select their own pseudonyms at the onset of our first interview. Individual taped responses will be used as part of data collection, however, the children will never be identified by name. Videotapes will be retained by me at the study's conclusion, and they will be stored on a password-protected computer. These tapes may be viewed if the study is presented at professional conferences. To preserve confidentiality, only the pseudonyms will be used to identify children.

Your decision whether or not to allow your child to participate will in no way affect your child. At the conclusion of the study, a summary of results will be made available to all interested participants, parents and staff of the organization. Should you have any questions or desire further information, please call me at 410.804.7054, or you may contact Dr. Debi Gartland, Chairperson of the Institutional Review Board for the Protection of Human Participants, at (410) 704-2236. Thank you in advance for your cooperation and support.

Sincerely,

Lisa Twiss, Doctoral Student

Educational Technology & Literacy Dept.

Towson University

Please indicate whether or not you wish to have your child participate in this project by checking a statement below and returning the bottom portion of this letter to the program's facilitator or director. ** I also ask that you share this letter with your child and have him/her sign below to acknowledge his/her consent.

Signed Permission Slips

I (**child's name**), _____, volunteer to participate in this study at _____ (name of center) _____ and agree to have Lisa Twiss, the primary researcher, observe me and interview me at least two times during the length of program.

Participant's Name: _____

Participant's Signature _____

Date: _____

_____ I, _____ (name of parent/guardian) _____ grant permission for my child, _____ to participate in this study.

_____ I, _____ (name of parent/guardian) _____ do not grant permission for my child, _____ to participate in this study.

Parent/Guardian's signature

Date

THIS PROJECT HAS BEEN REVIEWED BY THE INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN PARTICIPANTS AT TOWSON UNIVERSITY (PHONE: 410-704-2236).

Appendix B

Observation/Field Note Guidelines

For each observation, follow these guidelines for taking field notes.

Date: _____

Time: _____

Length of activity: _____ minutes

Site: _____

Participants: _____

Descriptive Notes

- Physical setting: visual layout
- Description of participants
- Description of activities, including technologies being used
- Description of individuals engaged in activities
- Sequence of activities over time
- Interactions
- Unplanned events
- Participants' comments: expressed in quotes

[Reflective comments: questions to self, observations of nonverbal behavior, my interpretations]

[Analytic comments: The researcher's observation of what seems to be occurring]

(Adapted from Portland State University, n.d.)

Appendix C

Semistructured Interview Protocol and Questions for Students

Protocol: Two semistructured interviews will take place with each participant. The first interview will take place within the first half of the study. The second interview will take place in the latter half of the study. All interviews will be conducted on the CTC site, and interviews should last no more than 30 minutes each. The following protocol will be followed:

Date: _____

- Introduce myself
- Discuss the purpose of the study
- Check consent forms
- Provide structure of the interview (audio recording, taking notes, and use of pseudonym)
- Ask student to help create his or her own pseudonym
- Ask if he or she has any questions
- Test audio recording equipment
- Make the participant feel comfortable

(Adapted from Morales, 2006)

Questions for Student Semistructured Interview #1

1. Why do you come to the center?
2. How would you explain what you do here?
3. Can you describe the ways you have been using technology so far?
4. What do you hope you will make or do with the technology?

5. How would you describe the creative things you have done with the technology here?
6. Have you ever worked in your community to help fix a problem?
7. What in your school or neighborhood would you like to change, and have you ever thought about how you might actually change it?
8. How might this technology in the CTC (or another technology center) help improve something? What would it improve?
9. If someone told you that you could make a lot of money using this technology, but it might hurt others, what would you say?

Questions for Student Semistructured Interview #2

1. Have you ever heard of the term civic engagement? If so, please define it for me.
2. Can you tell me about anyone you know who is civically engaged?
3. Can you tell me if you see yourself as civically engaged? Why do or why not do you think this? What examples can you give me of civic engagement?
4. Can you think of ways the technology you have used here could help you become more civically engaged?
5. Can you tell me about some of the skills you have learned here?
6. What suggestion might you make to help young people become more civically engaged?

Questions for Student Semistructured Interview #3

1. Can you tell me about what you made or are still in the process of making?
2. Can you tell me why you made this?

3. Describe how you went about making this, and feel free to include any people who were part of the process and other resources you might have used, as well as what you might have known before coming here.
4. Is there anything you would change about the work you did here? If so, what?
5. What do you hope happens next with the product?
6. Now that you know how to make this, what is the next thing you want to do or make?
7. Is there a way that the work you did in this center could help fix a problem?
8. If someone asked you to help them learn how to use this technology, what would you say? Explain how confident you feel about your technology use here in the center.
9. Can you tell me a little bit about the people you met here and whether or not you think you would have been friends with them if you didn't meet in this program?

Appendix D**Code List**

3-D printing
Activity book Never Late Nate
Adobe Illustrator
Aliya
Aliya grant writing
Aliya working with clients
App
Asking questions of other students
Asking questions to instructors
Attendance project
Audio
Awareness
Badges
Baltimore city calendar project
Baltimore riots
Bonding
BrainPop
Brainstorming
Bridging
Brought to their attention
Cancelled class
Caring
Cell phone use
Church as community
Civic identity
Collaboration
Commercials
Communication
Community
Community building
Community-driven projects
Competence
Confidence
Confusion about community
Connected learning
Connection
Content
Content creation
Contribution
Creativity
Data collection
Definition of civic engagement

Designing
Desktop computer
Digital camera
Digital citizenship
Discussion
Discussion re: youth issues
Does not identify with other communities
Eating
Editing
EE's table helping him with his Scratch coding
Epic Explosion
Epic Explosion 3-D printing
Epic Explosion Scratch
Epic Explosion Tackk
Epic Explosion with Inkscape
Exploration of technology
Family nights
Feedback is provided
Feeling comfortable with the group
Field Trips For BCPS
Flow
Font discussion
Five Nights at Freddy's
Friendship
Google Doc
Graphic design interest
Guest
Guest Speaker
Headphones
Helping in the community
Icebreaker activity
Impact of digital world
Independent work
Inkscape
Instructor concern_care
Instructor facilitation
Instructor modeling
Interview
Involvement outside the CTC
iPad
iPhone
Janelle
Kingston
Kingston Showcase
Kingston's website
Laptop

Leadership roles
Learned to be open-minded and respect others
Listening to music
Makey Makey
Making more heterogeneous connections
Meeting new people
Melanie
Melanie and Nicole try to find research about attendance rates
Melanie and Nicole working on slogan
Mentoring
Microphone
Most memorable moment from the riots
MS Word
New knowledge
New node
New tech idea
Nicole
Non-digital tools
Non-tech engagement ideas
Outside volunteers
Paper Tweet
Passionate
Peer-to-peer assistance
Perception of peers
Photography
Photoshop
Physical layout of CTC
Physical representation of community
Posters
Post-it notes for feedback
Potential for engagement
Praise Question Polish
Problems
Problem-solving
Production equipment
Proud of work
Public Speaking
Question #1
Question #6
Question #7
Radio work
Researcher involvement
Retrieving information
Role of the TV
Safety
Scratch

Self-Directed Learning
Self-efficacy (Nodes)
Self-efficacy (the belief in one's ability to make a difference)
Self-learning
Sharing of ideas
Showcase
Showing another student how to use the technology
Sketchbook
Social media
Solutions
Stereotyping
Storyboarding
Student voice
Student vote
Students are critiquing
Students going out to the community
Students helping each other
Students voted
Survey
Tackk
Teaching themselves
Technical skills
TED talk
The group helping Tony with his footpads
The importance of sharing
Thoughts about the city
Thoughts about using technology to help others
Tinkercad
Tony
Tony Scratch
Tony Tinkercad
Tools
Tori
Tori and Janelle online looking up hotels
Tori helping Janelle with the pen
Trial and error
Video watching
Video game
Wanted to learn about technology
Wanting change
Watching videos with others
Web-based
Websurfing
Work study_intern
Writing scripts
YouTube

Appendix E

IRB Approval Letter



APPROVAL NUMBER: 15-A045

To: Lisa Anne Twiss
910 Kingston Road
Baltimore MD 21212

From: Institutional Review Board for the Protection of Human
Subjects Devon Dobrosielski, Member

Date: Thursday, February 12, 2015

RE: Application for Approval of Research Involving the Use of
Human Participants

Office of Sponsored Programs
& Research

Towson University
8000 York Road
Towson, MD 21252-0001

t. 410 704-2236
f. 410 704-4494

Thank you for submitting an Application for Approval of Research Involving the Use of Human Participants to the Institutional Review Board for the Protection of Human Participants (IRB) at Towson University. The IRB hereby approves your proposal titled:

Young People's Technology Centers and the Roles it Plays in the Development of their Civic Engagement

If you should encounter any new risks, reactions, or injuries while conducting your research, please notify the IRB. Should your research extend beyond one year in duration, or should there be substantive changes in your research protocol, you will need to submit another application for approval at that time.

We wish you every success in your research project. If you have any questions, please call me at (410) 704-2236.

CC: Sarah Lohnes Watulak
File



Date: Thursday, February 12, 2015

NOTICE OF APPROVAL

TO: Lisa Anne Twiss **DEPT:** EDTL

PROJECT TITLE: *Young People's Technology Centers and the Roles it Plays in the Development of their Civic Engagement*

SPONSORING AGENCY: None

APPROVAL NUMBER: 15-A045

The Institutional Review Board for the Protection of Human Participants has approved the project described above. Approval was based on the descriptive material and procedures you submitted for review. Should any changes be made in your procedures, or if you should encounter any new risks, reactions, injuries, or deaths of persons as participants, you must notify the Board.

A consent form: ☒ is ☐ is not required of each participant

Assent: ☒ is ☐ is not required of each participant

This protocol was first approved on: 12-Feb-2015

This research will be reviewed every year from the date of first approval.


 Devon Dobrosielski, Member
 Towson University Institutional Review Board

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CURRICULUM VITAE

Lisa Twiss



Towson University Department of Educational Technology and Literacy

Doctor of Education in Instructional Technology, 2017

Professional Experience

Lecturer

Towson University, Towson, MD

2013 – present

Content Specialist (contract position)

Maryland Public Television, Baltimore, MD

June 2011 – August 2011

Technology Content Coordinator and Lecturer

McDaniel College, Westminster, MD

August 2003 – August 2011

New Teacher Supervisor & Adjunct

The Johns Hopkins University, Baltimore, MD

2005 – 2007

Teacher (9th -12th-grade English)

Baltimore City College High School, Baltimore, MD

1998 – 2001

High School Assessment Writer

Maryland State Department of Education, Baltimore, MD

1998 – 2000

Teacher (6th -9th-grade English)

The Paquin School, Baltimore, MD

1995 – 1998

Education

Doctoral Candidate in Instructional Technology

Towson University, College of Education (ISTC), Baltimore, MD

2007 – present

Co-Advisor: Sarah C. Lohnes Watulak, Ed.D.

Co-Advisor: William Sadera, Ph.D.

Master of Science in Instructional Technology

The Johns Hopkins University, Baltimore, MD

1997 – 1999

Bachelor of Arts in Secondary English Education
State University of New York at Oswego, Oswego, NY

1991 – 1995

Presentations

February 2015, “Understandings of Evidence in First Year Seminar Students” at the 36th Annual Ethnography in Education Research Forum, Philadelphia, PA

February 2014, “An Ethnographic Study of Children’s Informal Technology Use” at the 35th Annual Ethnography in Education Research Forum, Philadelphia, PA

April 2012, “An Ethnographic Study of Children’s Technology Use Outside the Classroom” at SITE Conference, Austin, TX

April 2011, “Rewriting History: A Constructivist Approach to World History” at Conference on College Teaching and Learning, Jacksonville, FL

March 2008, “Using Windows Movie Maker for Teacher Reflection” at SITE Conference, Las Vegas, NV

November 2007, “Multimodal Literacies in Urban Schools” at NCTE National Conference, Pittsburg, PA

November 2005, “Various Methods for Assessing Writing” at the NCTE National Conference, Pittsburg, PA

1996-2002, Baltimore City Public School System Office of English: “Reading Strategies”, “Writing Across the Curriculum”, “Using Technology in the English Classroom”, “Summer School Teaching Strategies”, “Using the Textbook”, “New Teacher Workshop”

May 1998, “Using Templates for Instruction” at Maryland Instructional Computers Coordinators Association Conference

Awards and Honors

The Gloria A. Neubert Faculty Excellence in Teaching Award, 2016, Towson University

Terminal Degree Fellowship 2014-2015, Towson University

Volunteer Commitments

Mass Communications Board, Wide Angle Youth Media	October 2016 present
Faculty Advisor, Delta Phi Epsilon Sorority	May 2016 present
Faculty Advisor, Towson Trill A Cappella Student Group	May 2016 present
U15 Soccer Coach, Towson Recreation Youth Program	August 2015 –January 2017

