

Empowered Youth: The Co-Creation of Youth as Technological Citizens and Consumers Within Community-Based Technology Programs

Author: Johanna Pabst

Persistent link: <http://hdl.handle.net/2345/3798>

This work is posted on [eScholarship@BC](#),
Boston College University Libraries.

Boston College Electronic Thesis or Dissertation, 2014

Copyright is held by the author, with all rights reserved, unless otherwise noted.

Boston College
The Graduate School of Arts and Sciences
Department of Sociology

EMPOWERED YOUTH: THE CO-CREATION OF YOUTH
AS TECHNOLOGICAL CITIZENS AND CONSUMERS
WITHIN COMMUNITY-BASED TECHNOLOGY PROGRAMS

A Dissertation

by

JOHANNA K. PABST

Submitted in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

May 2014

Abstract

Empowered Youth: The Co-Creation of Youth as Technological Citizens and Consumers Within Community-Based Technology Programs

Johanna K. Pabst

Advisor: Prof. Stephen Pfohl

The purpose of this study is to investigate the new media ecologies of urban, low-income youth and youth of color, and how they develop literacies and competencies around technology in the particular spaces of Community Technology Centers (CTCs), while placing them within their broader technological experiences and raced, classed, and gendered identities. This study builds on the concept of youth as experiencing a “new media ecology” in which youth engagement with technology is understood as a phenomenon which connects all spheres of experience. Through this work, I refine the understanding of how marginalized young people engage with technology in order to expand our understanding of digital inequality and its effects, as well as how digital inequality and inclusion interact with young people’s identities and social worlds more broadly. Young people, marginalized by their raced, classes, and gendered identities, are both accused of being wasteful in their technology engagement, and are welcomed into these non-traditional learning spaces in order to cultivate their uses of technology into more meaningful and productive outcomes. There is a growing proliferation of informal and creative digital learning programs, and corresponding research and interrogation of the activities within these spaces. However, we lack a full and holistic understanding of who these

young people are as technological citizens and consumers, an understanding that is necessary to inform effective interventions around digital inequality.

Through qualitative research within two Boston-area Community Technology Centers, including participant observation and interviews, this study presents an analysis of how young people as agentic individuals interact with the contexts they enter into to produce new forms of agency – and disempowerment. Rather than focusing on one area of the digital learning environment or youth technological experience, as other researchers have done, I delineate a more complete and dialogic view of less-advantaged young people and their technological engagement.

My findings build on the need for supportive informal technology learning environments for marginalized youth, both in terms of providing stable environments with rich resources for technological exploration and skill-building, as well as providing learning environments which valorize and encourage youth agency and identity work. It is also necessary to recognize and allow for differences among youth in these spaces, who vary not only in terms of race, class, and gender, but also skills, abilities, interests, and motivations. I also call attention to the ways in which structural inequalities enter into these informal learning environments, resulting in their reproduction.

Table of Contents

Acknowledgements	vi
Chapter 1: Introduction	1
Chapter 2: Literature Review	9
Why Consumption Matters to Urban, Marginalized Youth.....	10
The Socio-Historic Patterning of Consumption.....	11
The Consumption of Technology.....	17
The Construction of Identity Through Consumption.....	18
Digital Inequality: Framework and Effects.....	22
Role of the Community Technology Movement in Addressing Inequality.....	27
Youth and Technology: The Expansion of Digital Learning.....	30
Informal Learning/Situated Learning.....	32
Recognizing Youth Diversity Within Media Programs.....	35
The Intersection of Race, Class, and Gender in Youth Technology Studies.....	40
Gender and Learning Technology.....	41
The Intersection of Class and Digital Learning Environments.....	43
The Space of the Current Study.....	44
Chapter 3: Research Methodology	47
Site Selection.....	48
Data Collection.....	55
Participant Observation.....	56
Interviews.....	58
Surveys.....	60
Content Analysis.....	61
Data Analysis.....	62
Ethical Issues and Informed Consent.....	63
Chapter 4: The Experience of Technological and Digital Inequality in Everyday Life: A Youth-Centered Perspective	66
Introduction.....	66
The Intersection of Race, Class, and Technology in the Lives of Young People.....	73
The Numbers: Technology Ownership and Access in Everyday Life.....	76
Technology in the Home.....	79
The Importance of Children’s Technology Access in the Home.....	81
Tensions Between Parents and Children Around Technology.....	84
Technology in Everyday Life.....	90
Everyday Use and Interests.....	92
Vulnerability and Technology.....	95
Neighborhoods.....	95
Adaptations.....	102
Informal Economies and Sharing.....	104
Ambivalence.....	109
Don’t Use Technology Much.....	110
Don’t Want Much.....	112
Could Live Without It (and Have).....	113

Technological Critiques.....	114
In the CTC.....	121
What Do They Like About the Programs?.....	121
Conclusion.....	128
Chapter 5: In the CTC: The Co-Creation of Digital Learning Spaces by Adults and Youth	131
Funding as a Structural Constraint of CTC Programs.....	136
Funding in the CTCs in the Current Study.....	136
Staff as Agentic Individuals within the CTC Structure.....	142
The Path to the CTC.....	146
The Path Away from the CTC.....	148
Creating a Replenishing Supply.....	149
Missions & Philosophies: Multiple Discourses as Understood and Enacted by Adult Staff.....	150
Internal Contradictions.....	151
Structure versus Freedom.....	152
Process Over Project.....	154
Goals for Youth –What is a Success?.....	157
Interactions Between Adults and Youth—Challenges, Tensions, and Opportunities...	160
Recruitment.....	162
Recruitment Obstacles –Structural Inequality.....	164
Other Obstacles.....	165
Getting Youth to “Appreciate” the CTC.....	166
Daily Challenges.....	168
Structural Challenges in Everyday Practice.....	170
The Daily Challenges of Youth Creation: Discourses in Action.....	171
Distractions and Restrictions.....	175
Public vs. Private: Youth and Technological Vulnerability in a “Safe Space”	181
Staff and Gender: The Co-Creation of Inequality.....	187
Searching for Female Role Models.....	190
Recruitment of Young Women.....	193
Gender in the CTCs.....	195
Conclusion.....	198
Chapter 6: In the CTC: Youth Creations, Agency, and Identity	202
Youth Agency, Identity, and Media Education.....	205
The Multi-Sited Approach.....	210
Youth Agency and Identity in the Free Program.....	212
The Studio: Individual Interests, Pop Culture, and Peer Networks as Motivators.....	212
The Studio and the Ladder to Stardom.....	214
The Importance of Peer Feedback.....	217
Self-Directed Youth Projects and the Replication of Disempowerment..	219
The Content of Youth Raps as a Source of Tension.....	222
Staff Response to Youth Rap Content.....	223
Marcus and Ascension Up the Ladder.....	225

Youth Agency, Legitimacy, and Frustration.....	231
Youth Agency and Identity in The Learning Program.....	238
Introduction to Digital Learning Through Modules.....	238
Entry into the Program Through Bricolage.....	243
Making Things in the Fab Lab.....	251
Ascension Up Ladders of Participation Through Group Projects.....	253
Informational and Advocacy Projects.....	254
Consumer Product Projects.....	259
The Critical Projects.....	264
Spaces of Youth Resistance in the Program.....	269
Cycles of Inequality and Passivity.....	272
Conclusion.....	275
Chapter 7: Conclusion.....	283
The Troubling Role of Neoliberalism in Digital Inequality Discourses.....	286
Limitations and Suggestions for Future Research.....	289
Concluding Remarks.....	290
Appendix 1: List of Study Participants.....	291
Appendix 2: Interview Schedules.....	293
References.....	299

Acknowledgements

I would like to thank my advisor, Stephen Pfohl, who guided me throughout this process, and offered me so much encouragement and positive feedback when it was needed.

I also thank my committee members, Julie Schor and Shawn McGuffey, for their many contributions to this project, especially their careful and thoughtful readings of my work and their invaluable feedback. To my whole committee, I can't thank you enough for your support, kindness, and patience.

I am also indebted to the Boston College Sociology Department for their constant support. This study was also made possible with generous grants from the Boston College Graduate Student Association.

This study would not have been possible without the generosity of my participants, both young and old(er), who welcomed me into their spaces. For your willingness to open up to me, share your stories, and answer my many questions, I can't thank you enough.

Most of all, I thank my friends and family for their unfailing love, support, humor, and tolerance throughout this journey, especially my parents, Richard and Diane, my brothers David and Erik, my sisters-in-law Karyn and Branwen – and my amazing nieces and nephew, Imogen, Ellie, and Stellan, who all came onto the scene just in time to be my very necessary beacons of happiness during the writing process.

Chapter 1

Introduction

In August 2007, then Senator Barack Obama called for increased attention to the technology education of American youth, saying, “To restore America's competitiveness, we must recruit a new generation of science and technology leaders by investing in diversity.” (Duncan 2009). His proposal, The America COMPETES Act, was intended to draw under-represented groups of young people into science, technology, engineering and math careers. In 2011, President Obama reauthorized the act, reaffirming the idea that the cultivation of a diverse generation skilled and interested in the quintessentially “American” pursuits of “building, innovating, educating, making things” via technology requires investment (Holdren 2011).

On May 29, 2012, the *New York Times* ran a story entitled, “Wasting Time is New Digital Divide in Digital Era,” suggesting that, while the access gap for lower socioeconomic households was shrinking, poor youth were using technology for entertainment or “time-wasting,” as opposed to education or “meaningful content creation” (Richtel 2012). Despite the fact that the author acknowledges that even children from higher socioeconomic backgrounds also “largely use their devices for entertainment,” the personal uses of technology made by youth from low-income backgrounds are particularly targeted as being wasteful and meaningless – seemingly a proxy for activities unlikely to enable upward social mobility. As Nathan Jurgenson (2012) said in an online critique of the NYT article: “Whenever someone declares what Internet-use is ‘meaningful’ versus a ‘waste’

we must be critical: who is making the claim?” In this article, as in the goals of the America COMPETES Act, “meaningful” uses of technology seem tied to specific notions of productivity which correspond to positions in an economically-stratified world. Upward mobility is achieved via sets of skills and educational degrees defined as economically valuable to their holders – whether it is about applying for a job online, learning word-processing skills, or becoming an advanced computer programmer.

What is not acknowledged in the declaration of other uses as “wasteful” is a host of other relationships and outcomes that occur through technology engagement – ones which researchers are beginning to argue are as important to understand about young people and their engagement with technology as “productive” skills. Jurgenson notes that defining the technology use of low-income youth as “not productive, not educational, not meaningful, pure entertainment and a waste of time” reifies the notion of the “Digital Divide” rather than breaking it down – a rhetoric that “claims to be about identifying and mending a divide when the reality is that it is more about creating and reifying a divide, to invent differences, chastise and paternalistically help, educate and ‘civilize’ the manufactured ‘other’.” The mediated lives of marginalized youth become labeled in ways that reflect their marginalized identities in society – as “at-risk,” unskilled, uneducated, and thus doomed to replicate their class position.

Existing within these narratives, and often beholden financially, and thus ideologically, to funding organizations like the America COMPETES Act and corporate technology sponsors, are the community technology centers (CTCs) that form the initial space of exploration in this study. These spaces of digital engagement and learning, while seeking to impart basic access and skills to underserved youth populations, seek to create rich,

supportive, and open spaces which engage youth in ways which build on their desires, interests, and talents – and which acknowledge and recognize the agency of youth. They provide environments which, going beyond the dominant narrative of “valuable” and “productive” uses of technology, utilize technology as a tool to build up the youth they serve in other ways – through civic engagement, empowerment through voice, creativity, and expression. The community technology movement, “a grassroots social movement that employs IT to empower historically disadvantaged individuals and communities,” is a widespread effort to address technological inequality by addressing disparities of access to, and use of, information technologies among populations historically considered underserved (Servon and Pinkett 2004). Beyond simply providing access to computers, many community technology centers (CTCs) seek to enfranchise their populations through technology, to provide them with productive, political and social inclusion – not just the inclusion as workers or consumers offered by mainstream society.

Many CTCs, including those in this study, have been inspired by the guiding principles of the Computer Clubhouse model, which began in Boston and has spread internationally. With the intention of focusing pedagogically on young people, rather than the computers, the Computer Clubhouse emphasized “learning-by-making” and articulated four “guiding principles”:

- Learning by designing: An emphasis on helping members see themselves as innovators, thinkers, and creators.
- Encouraging members to follow their own interests
- Building a community where young people work together: cultivating expertise and sharing knowledge
- Respect and trust: break down the hierarchy of the classroom and treat youth like colleagues, rather than students; creating a safe space for experimentation (Resnick 2002).

These principles aim to put the primacy for learning and engagement within these open and non-hierarchical spaces on the young people they serve –to see them as whole individuals and to validate their interests, experiences, and talents.

Many CTCs target low-income youth, using information and communication technologies (ICT) to address social structural inequities along lines of race, class, gender and location. Yet even as teens' relationships to technology are increasingly understood as multi-layered, they remain under-investigated. CTCs themselves operate under constraints and limitations related to essentials such as funding, space, and staffing, which shape their ability to provide programming to young people, but may not allow for deep interrogation into the efficacy of their interventions in the lives of young people. The day-to-day business of running a CTC can preclude efforts to situate this work in a broader social context. CTCs also exist within the same structural constraints that they find themselves trying to work against, having grown up at the intersection of traditional policy spheres and existing community-based movements (Servon and Pinkett 2004). Many of the grants which sustain CTCs are funded by powerful IT-based corporations such as Microsoft, AT&T and Intel. Though guided in their philanthropic work by missions which emphasize the importance of technological inclusion, these companies are also interested in creating more consumers, while also controlling access and defining how technology is utilized (Clark, Demont-Heinrich, and Webber 2004). While CTCs are likely to remain reliant on these sources, we need to better understand how the structures of these digital learning programs relate to how they frame and respond the problem of digital inclusion for young people.

And then, finally, there are the youth of interest to the *New York Times*, the CTCs, and this study – low-income and marginalized by their raced, classed, and gendered identities. They are both accused of being wasteful in their technology engagement and, at the same time, are welcomed into these non-traditional learning spaces in order to cultivate their uses of technology into more meaningful and productive outcomes—however these are defined. It is these youth that are the true starting point of inquiry for this study.

While there is a growing proliferation of informal and creative digital learning programs, and corresponding research and interrogation of their activities within these spaces, we lack a full and holistic understanding of who these young people are as technological citizens. We need to better understand young people and their already-established personal agency with media and technology, which interacts with the contexts they enter into to produce new forms of agency.

The narratives I have briefly presented illustrate the complexities of and lacunae in our understanding the technological lifeworlds of low-income youth, and youth marginalized by race, class, and gender. They are living in a particularly significant moment where many forces seek to label and alter their media engagement. Even before entering into the CTC space, they are highly engaged with technology, much like their higher socioeconomic and more privileged peers. As cell phones, mp3 players and video game systems become indispensable, an entire generation is coming of age in a wired world. Recent statistics (2012) show that, of youth coming from households reporting a household incomes of less than \$30,000 per year, 89% have access to the internet (compared to 99% of \$75,000+ households), 66% have mobile access to the internet (compared to

79%), and 30% access the internet **mostly** on their phones (compared to 24%).¹ Sixty-nine percent of low-income youth own a cell phone, and 39% own a smartphone, compared to 86% and 43% of their higher-income peers respectively (Madden et al. 2013). So while there are still differences mediated by socioeconomics, it is clear that low-income youth are taking on technology participation and ownership at high numbers—and that they may be even **more** dependent on their mobile devices than their higher-income counterparts. That low-income youth are being drawn into this burgeoning consumer market is not surprising, yet it is often overlooked, as social policy and public initiatives primarily address the lack of information and communication technology (ICT) access and engagement in low-income communities. Marginalized youth face greater concern and different interpretations around their uses, interactions, and creations through technology, as their raced, classed, and gendered identities intersect with their interactions with technology. These intersections influence both their own understandings and incorporation of “meaningful” uses of technology, but also how they are seen and interpreted by others, especially adults and adult-led institutions that seek to direct these “at-risk” youth towards better futures.

Rather than focusing on one area of the digital learning environment or youth technological experience, as other researchers have done, I hope to create a more holistic view of young people’s technological engagement. This study builds on the concept of youth as experiencing a “new media ecology” which understands youth engagement with technology as a phenomenon which connects all spheres of experience: ‘The everyday

¹ “Teen Internet Access Demographics,” Pew Internet & American Life Project

practices of youth, existing structural conditions, infrastructures of place, and technologies are all interrelated; the meanings, uses, flows and interconnections in young people's daily lives located in particular settings are also situated within young people's wider media ecologies" (Horst, Herr-Stephenson, and Robinson 2010:31). As Livingstone (2002) says, "conditions of access and choice within the child's environment are central to an understanding of the meanings of media use" (p. 10). I also work from Livingstone's articulation of the difficulties of understanding and evaluating the social uses and consequences of technology and media use for young people. Specifically, current technologies contain an inherent interpretive flexibility as they develop and change, and their meaning and effects remain in flux. This parallels cultural and social changes that affect relations between home and school, family and state, and private and public institutions (Livingstone 2002). Youth are seen as playing a central role in the construction of these new meanings, even as this serves as a societal focal point for much broader hopes and fears about social change wrought by technology. In the narratives I highlight at the beginning of this introduction, low-income and marginalized youth in particular become weighted with narratives, discourses, and fears about their relationships to technology, even as we little understand who they are as increasingly mediated and technologized citizens.

The purpose of this study is to investigate the new media ecologies of urban, low-income youth and youth of color, and how they develop literacies and competencies around technology in the particular spaces of CTCs, while placing them within their broader technological experiences and raced, classed, and gendered identities. Looking at the processes of creation, as well as the end results, allows us to assess how youth incorporate their perception of technology from their individual contexts, into informal digital

learning environments. I also examine the structure of these spaces themselves, as adults form the contexts of digital learning and engagement with which youth interact. Through this work, I hope to refine the understanding of how marginalized young people engage with technology in order to expand our understanding of digital inequality, its effects, and how digital inequality and inclusion interact with young people's identities and social worlds more broadly.

Chapter 2

Literature Review

As noted in the introduction, there are a number of narratives, concerns, and suggestions for improvement when it comes to low-income and marginalized youth and their engagements with technology. In recent years, there has been a growing body of literature interrogating not only young people's experiences with technology, but building on pedagogical interventions that increasingly utilize or are built on technology, as a means of engaging tech-saturated students. Yet this emerging area, within which this study is emerging in tandem, does not sufficiently provide the basis for the complex processes investigated here. My investigation of the connection between young people's everyday technological lives and their experiences within digital learning programs requires a basis in a more diverse literature which historically and more broadly situates discourses around marginalized and low-income youth as consumers and technological users, while simultaneously placing them in categories of "risk" that demand social intervention.

I then discuss literature around the concepts of the "digital divide" and digital inequality, especially as it relates to the purposes and effects of spaces like the community technology centers (CTCs) I studied. This is essential for putting spaces of digital learning for under-served youth within a historical context, as well recognizing the discourses which have shaped their development, and how their effectiveness has been quantified and measured. Finally, I discuss the recent turn in studies of digital media and learning which have increasingly emphasized the incorporation of creative technology into open learning environments, tied into shifts in pedagogical philosophies which de-emphasize

top-down, structured learning environments to engage youth and promote agency, and which recognize and validate many types of engagement by young people.

This chapter therefore aims to show how the existing literature approaches and identifies the issues around understanding low-income youth as citizens and consumers, as well as learners, in ways that structure social and institutional interventions as far as these youth are understood as “at-risk,”² or needing social support for future success. I show how technology is a valuable lens, structuring idea, and a flashpoint of intervention throughout these literatures. By connecting these literatures, I will show how the integration of these approaches within this study demonstrate the need for a more holistic study of marginalized young people in their technological habitus, to better understand who they are as consumers and citizens, and to better inform technology-based interventions in their lives.

Why Consumption Matters to Urban, Marginalized Youth

An initial justification for the importance of understanding the everyday relationships of youth to technology can find its roots in general theories of consumption and consumer culture. As a subset of cultural theory, consumption as a field operates at the intersection of economy and culture, and, as such touches on many aspects of modern institutions which are typically divided as fields of inquiry among sociologists, which has

² A note about the use of the term “at-risk” youth: though I will use it throughout because of its common use in the literature, I adhere to critiques of the term which frame it as a popular discourse around structurally disadvantaged young people that tends to reinscribe them as potentially “delinquent, deviant, and disadvantaged” (Hopkins 2010:182). The rhetoric represents a “deficit model” where “risk” can be reduced by adding social resources. It is an individualistic label that corresponds to small-scale interventions, rather than addressing the macro social and economic factors that enforce social exclusion in unlimited ways for these youth. To emphasize caution in use of this term, I will put it in quotation marks throughout.

made it difficult to interpret within a single analytic framework (Zukin and Maguire 2004). Yet these same divisions and contested areas also highlight the tensions within consumer culture, especially as it relates to social position, identity, and agency. Though the dominance of mass market goods as constitutive of modern culture has been historically maligned in the last century as a homogenizing force and an inescapable program of social control (Adorno and Horkheimer 1944; MacDonald 1957; Galbraith 1958), these accounts have been critiqued for their totalizing vision and denial of consumer agency. There is a growing appreciation of consumer culture as a space reflecting the opportunity and constraints of modernity (Giddens 1991; Slater 1997). Two of the more pertinent strains of consumer culture theory I will examine here are the socio-historic patterning of consumption and the construction of identity through consumption. Both provide context for consumption as a site of inclusion and exclusion for groups historically subjugated by class, race and gender, as well as implicating technology as a structuring element of culture.

The Socio-historic Patterning of Consumption

Consumption has long been identified as a site for the reproduction of social class and the delineation of class hierarchies, a site of analysis generally depending on the work of Veblen (1899) and Bourdieu (1984, 1993). Veblen's Theory of the Leisure Class (1899) has become a heavily critiqued staple in this area, with the notion of "conspicuous consumption" at the core of a system of competitive and visible consumption as an indicator of wealth and status. In this system, consuming is a social activity, with goods ascribed value as visible, mutually agreed-upon symbols, rather than for their inherent function, perceived usefulness or within an individual consumer's meaning system. Though

Veblen's model was largely meant to explain conspicuous waste of the dominant classes, it also offered a place for understanding how the lower classes are drawn into consumption as well. Though the rich are the early adopters of new, expensive and visible status symbols, the lower classes soon attempt to emulate the spending patterns of those above them, creating a "trickle down" effect that requires symbols to be constantly replaced. Consumption is thus conceived of as a rational and intentional set of activities based on a cycle of consensual status symbols shared by all participants in the class system.

Critiques of Veblen have illuminated the limits of this model, yet also provide avenues for modifying its insights for postmodern consumer society in a way that is useful to this dissertation, as well as highlighting a space for its contributions (Arnould and Thompson 2005; Schor 2007). Support for a status-based, class-driven model weakened as theorists began to emphasize the agency of the consumer as a meaning-making individual within an increasingly heterogeneous sphere of mass production (Jameson 1984; Campbell 1994; Firat and Venkatesh 1995; Holt 2000). In addition, this shift highlighted the potential of subcultures and those located on the social margins, especially inner-city youth, to produce innovative cultural products as a means of expression and resistance (Hebdige 1979; Rose 1994; Stapleton 1998). However, even as these changes in the flow of cultural meaning and the speed of diffusion are real, more recent analysis points to the continued relevance of social class in consumption: "The point about the project of self-creation in consumer society is undoubtedly right, but it does not require that the process occurs in a vacuum with respect to social inequality and status" (Schor 2007:21). Despite rhetoric touting a more democratic and egalitarian consumer society (Twitchell 1999;

Lipovetsky 1994), we are witnessing growing inequality and decreased socio-economic mobility (Bowles, Gintis, and Groves 2005; Wolff 2002).

A major effect of the split from class-based examinations of consumption has been the separation of interpretive accounts of the consumer agency from macro, systemic accounts of consumer culture. Empirical analyses of consumer behavior have often been removed from an institutional framework, even as large-scale economic and cultural changes, tied to technological shifts, increasingly shape individuals' positions as producers and consumers, globally and locally. Zukin and Maguire's (2004) concept of consumption as an "institutional field" is useful for highlighting the micro and macro constitution of consumption practices which is useful for this study. By locating a study of the technological consumption of urban, underserved youth within a context shaped by structural, economic and cultural constraints, this research contributes to the integration of Veblenian class analysis with interpretive/subjective consumption analyses. Though my subjects may operate within a context of consumer choice and agency, with increasing opportunity to be producers as a result of technological diffusion, they are located within social structures and cultural practices which also result in the production of consumers within narrow, disempowering terms (Watkins 2009).

Discourses around the consumption of youth, and the construction of youth as consumers, have been historical flash points for modern moral panics both about younger generations in particular and social change more generally, including the influence of new technologies (Cohen 1972; Pearson 1983; McRobbie 1991; Drotner 1992; Livingstone 2002; Mazzarella 2007; McMillan 2009). The way in which young people are often used within these discourses, as representative of adults' persistent anxieties, rather than

as agentic individuals themselves, has shaped the emergence of childhood studies, or the sociology of childhood approach, which sees children as active in the construction of their lives, and in turn, their societies (Prout and James 1990; James, Jenks, and Prout 1998; Livingstone 2002; Cook 2004; Ito et al. 2010). Critical interpretations of youth agency, especially around consumption, remain an area of debate, and Cook (2004) has called agency “the definitive problematic of modern childhood” (p. 13). In Cook’s study of how children were turned into active, agentic persons via deliberate efforts by commercially-focused institutions, he rejects the dichotomous stances which usually separate those who study children and consumption: that they are either victims of structures which seek to colonize childhood and exploit it, or that they are entirely empowered through their agency and active participation in consumer culture. This critical view of the project of youth identity requires recognition of youth autonomy and agency as well as an interrogation of the forces of media and markets in the always incomplete process of identity formation (Butler 1990; McMillan 2009). This perspective informs my analysis of the youth within this study, especially with regard to how the problematic of youth agency is particularly emphasized for youth marginalized by class, race, and gender.

Moral panics about youth relate to class conflicts, with anxieties around youth being amplified around youth considered more “at-risk” or potentially dangerous –those typically marginalized in other ways within a society. Giroux (2009) places these panics within what he calls the “youth punishment-and-control complex” (p. 14) in a capitalist society which surveils and criminalizes youth who can’t participate as full consumers in the public sphere. Such youth are automatically deemed “troubling, reckless, and dangerous persons” (p. 3). Fundamentally, these discourses characterize a neoliberal assault on

youth marginalized by race and class. Giroux's belief that these discourses around youth limit the agency and futures, of black youth in particular, underlies his claim that youth need to be conceptualized as a political and moral category in order to engage them and reclaim the democratic public sphere. This requires providing young people with "the knowledge, capacities, and skills they need to function as social agents, active citizens, empowered workers, and critical thinkers" (p. 23). Though these are similar mission buzzwords embraced by the community technology and digital learning movements, Giroux's emphasis on how broad ideological structures circumscribe the agency of marginalized youth across all spheres of their experience is an important one for my analysis of the experiences and agency of the youth in the programs I observed.

Bourdieu's (1984) analyses of forms of capital and "habitus" have provided an additional vantage-point for class interpretations of consumption, especially with regard to the reproduction of class through consumption choices. This is useful for situating the efforts of community technology centers to specifically provide technological capital to their users within the broader "cultural field" (Bourdieu 1993). Bourdieu (1986) delineated three main forms of capital that determine social power and social inequality: economic capital, which refers to financial resources; cultural capital, which pertains to knowledge, taste and qualifications; and social capital, which is a product of connections and networks. His emphasis on cultural capital showed consumption as an exercise by which taste and style are displayed, with "taste" shown to be socially structured and thus, stratifying. Because varying degrees of cultural capital are associated with different degrees of social legitimacy, culture becomes a site of class competition with the end effect of reproducing class structures and divisions.

Cultural capital, like other forms of capital, is an accumulated resource. One's educational and class background connects to social aspirations and current cultural and economic position, and is expressed through individual cultural preferences. The "habitus" describes the manner in which these preferences become embodied by the individual, as structures of predispositions which function socially to guide one's cultural preferences to the appropriate sphere for one's social location. "It is generated by one's place in the social structure; by internalizing social structure and one's place in it, one comes to determine what is possible and what is not possible for one's life and develops aspirations and practices accordingly" (Dumais 2002:46). For low-income youth, this means that their low levels of cultural capital shape a habitus that leads them to reproduce their class and economic positions, and thus contribute to the reproduction of the class structure (Willis 1977).

Bourdieu's formulation seems to illustrate the immobility of the class system, as far as cultural capital is understood as the result of years of immersion within high culture; habitus emphasizes the extent to which it is thoroughly embedded within the self. Yet, he also provides space for innovation as he allows for the transposability of cultural capital into economic or social capital and vice-versa. Struggles over capital also occur within the class structure and within cultural fields. Though the elite may monopolize all forms of capital, members of subordinate groups can theoretically acquire various forms of capital and achieve social mobility. The gap between theory and practice has most often been examined in the educational-institutional sphere, which are conceived as equalizing institutions, but which have consistently been shown to be gatekeepers of capital and class position (Willis 1977; DiMaggio and Mohr 1985; Lamont and Lareau 1988).

The Consumption of Technology

Within the non-institutional sphere of technology-based social interventions, however, modified uses of Bourdieu's concepts have become attractive largely because of the manner in which technology is conceived as a new "great equalizer" (Selwyn 2004; Kvasny 2005, 2006). Critics of Bourdieu have argued that the shift towards post-industrialism has shifted the cultural terrain, so that there is growing blend of high and low cultural preferences (Peterson 1992); and that his analysis of 1960's France was not generalizable to present-day U.S. where cultural boundaries are not as closed-off (Lamont 1992). These critiques pave the way for further investigation of Bourdieu's ideas within a context of technological equality (and inequality). The breakdown of cultural distinctions, along with the diffusion of technology, both as a method of consumption and production of culture, are key developments for rethinking the possibilities of class mobility, whether such optimism is founded or not .

Kvasny (2005, 2006) uses a Bourdieu-ian framework to better situate competing discourses around technological inequality. Taking habitus to represent "the embodiment of social structures," she illustrates that even as institutional actors position IT use as a boundary-crossing mechanism for empowerment and social inclusion, CTC users' understandings of IT and their relationship to technology are shaped by their lived experiences and social position:

“...[T]he notion of habitus is used to explain the paradoxes inherent in the daily-lived experiences of city residents struggling to overcome the negative effects of structural changes such as the loss of high-paying manufacturing jobs, the gentrification of neighborhoods, and welfare-to-work policies. As social agents who are

having decisions imposed upon them, residents are in a position to engage in alternative discourses organized around the economic and social opportunity structure that IT both enables and constrains.” (Kvasny 2005:6)

The institutional discourse around technological access portrays IT as a powerful tool of empowerment and social mobility, while users’ habitus leads them to incorporate this notion into their existing ways of understanding, thus leading to reproduction of unequal social identities.

Bourdieu’s allowance for different forms of capital is also used to understand individuals’ engagement with ICT (Selwyn 2004). Selwyn (2004) introduces the concept of “technological capital,” which he identifies as “specific forms of cultural capital that are useful to the information age, such as technological skills, ‘know-how’ and socialization into the technoculture via family and the household” (Selwyn 2004:353). Though fundamentally a form of cultural capital, Selwyn also illustrates that technological subsets of economic and social capital are essential for understanding how individuals, organizations and communities engage meaningfully with technology. Technological capital is “socialization into the technoculture,” which occurs through consumption of “technocultural goods,” as well as the influence of media, peers, and other informal avenues. This shapes attitudes, skills and knowledge around ICT, as well as patterns of use, in ways that interact with the technological capital subsets that CTCs wish to build upon in more formal settings –interactions which form the basis for analysis within the current study.

The Construction of Identity Through Consumption

Consumption, and participation in consumer culture, has also been extensively theorized as a system of meaning-making and identity creation in modern society. When examined specifically as way of understanding how those who seem to lack the resources

to be full-fledged participants in a consumer society, how they participate, and in what ways, this theoretical area provides a basis for examining the meaning of consumption for such groups.

Consumer society has been theorized as compensating for the loss of traditional, stable social values as a source of orientation for the individual, a 'mass identity crisis' brought about by modernity (Giddens 1991; Bauman 1991). Giddens (1991) suggests that the plurality of choice that characterizes modernity leads to the reflexive project of self, wherein identity emerges from consumer choice. "Individuals must, by force of circumstances, choose, construct, maintain, interpret, negotiate, display who they are to be or be seen as, using a bewildering variety of material and symbolic resources" (Slater 1997:84). Participation in consumer society becomes the means by which the individual relates to culture and constructs the self.

Historical analyses of consumer culture illustrate how purveyors of commodities capitalized on the need for guidance within the marketplace, with advertising becoming the main method of constructing cultural narratives around consumption (Berman 1981; Schudson 1984; Marchand 1985). Through notions of self-improvement and 'lifestyle,' advertising provides the expert discourse which connects consumer goods to meaningful experience. However, it is the narrative of progress, and the characterization of advertisers as "missionaries of modernity," that most directly implicate technological development as an important element of consumer culture (Marchand 1985:xxi). Berman presents technology as a driving, progressive force within advertising itself: "advertising is the voice of technology" (1981:16). Berman specifies three themes of modern advertis-

ing: the promotion of technology as beneficial for all, that consumption “expressed legitimate human desires,” and that modern life is inextricable from progress (p. 102). The consumption of technology is constructed as essential to full participation in modernity.

While all individuals are theoretically drawn into consumer culture and its promises of ontological security, many analyses bracket the question of other modern structural divisions, such as class, race, and gender. In part, this is an effect of the democratizing and egalitarian discourses of consumer culture; issues of social inclusion and exclusion become nullified, which leads to a certain amount of elitism, or at least a greater focus on middle-class consumption as representative of all consumption. The consumption of those who are otherwise subjugated by society is especially important to consider, since they are drawn into the supposed democracy of the marketplace that promises agency through choice. Yet their use, interpretation, and actions within that sphere cannot be assumed to be the same as those occupying more privileged social positions. This has important implications for the study of young consumers, who are portrayed as desiring of creative self-expression and novelty, “coolness,” and who are socialized to be consumers from birth, regardless of race, class, and gender (Frank 1997; Schor 2004).

Studies focusing on the consumption of low-income youth have tended to conflate race and social class as sources of subjugation, yet they illustrate the varied and conflicting meanings consumption can have for such individuals (Nightingale 1993; Chin 2001). Nightingale (1993) sees the enthusiastic participation of poor African-American youth in the mass market as shaping and shaped by their experiences of exclusion in other areas. Tension and stress inevitably result from the compelling images of abundance presented by consumer society, as kids develop the desire for commodities that the culture expects

of them, yet they lack the resources to truly be part of the mainstream. Nightingale portrays poor youth as especially enthusiastic consumers because of their subjugated position, which is an initial point of inquiry for this dissertation. Chin (2001) sought to counter this view of poor and working class black children as blindly desiring consumer subjects through ethnographic accounts of how such children consume. She shows them to be much more thoughtful and less avid consumers than Nightingale, countering his view of the consumption of poor black children as pathological. Specifically, Chin charges Nightingale with centering his analysis on the very worst, poorest of ghettos in such a way that relies on dominant discourses about poverty to outline his inquiry. In addition, his interest in the demand for name-brand and status items reduced consumption “to its most ideologically charged aspects—aspects that are highly contested across class, gender, and racial lines” (Chin 2001:7). By taking in the economic diversity of a stereotypical poor and working-class neighborhood, and by engaging in directed participant observation such as taking children on shopping trips, Chin depicts consumption as a social process shaped by inequality, fraught with complexity, tension and embedded in daily life. While not taking a utopian view of consumption, Chin does not take it as dehumanizing at the forefront, and instead interprets consumption as a medium through which disadvantaged youth engage with the boundaries of race and class.

The latter framing of the consumption of poor youth has the potential to allow a much more fruitful and layered interpretation of consumption, rather than a simply pathological one. The study of the experience of consumption by socially isolated groups is a way to critically examine how identity is constructed, not only within the choices pre-

sented by consumer society, but within groups, community and larger society. This dissertation further explores the relationship of subjugated youth to consumer society, adding to the understanding of how inclusion and exclusion play out through technology consumption and production, but also considering the added influence of CTCs, which further seek to modify youths' relationship to technology, while existing within the constraints of the same consumer capitalist society. As the literature is only beginning to explore technology consumption and production by low-income youth in detail (more on this literature in the next section), this dissertation seeks to build knowledge about an important, but understudied population, in a way that enhances critical understanding about the intersection of consumption and technology at the micro level, but placed with a macro framework.

Digital Inequality: Framework and Effects

The dimensions of technological inequality, and the manner in which it connects to social inequality, have been widely documented and explored in an effort to reconcile the promise of technology diffusion with its reality. Early enthusiasts suggested that the spread of information technology would reduce inequality by lowering the cost of information (Anderson et al. 1995). As information and communication technologies reconfigure the flows of global capitalism, analysts such as Manuel Castells (1996, 1998) see technological control in the hands of the already powerful as magnifying social inequalities. Though Castells explores the consequences of these developments for the global periphery, he also relates them to increases in U.S. urban poverty. The globalization of manufacturing contributes to the loss of stable low and semi-skilled jobs within cities. In

addition, we see the shift away from social welfare policies, a lack of support for non-nuclear family structures, and the deterioration of urban schools as resources shift to the suburbs (Pfohl 2005). Out of these concerns has emerged a specific focus, by social scientists, policy makers, and community activists, on the implications of technology access for this population.

Access to technology, most often characterized as access to the Internet, has been shown to correlate to higher access to education, income and other resources (Goslee 1998; Bucy 2000; Strover 2001). The term “digital divide” is most often used within the movement, as well as the literature, to denote disparities in technology access by race, class, gender and place. The term was popularized with the release of a 1995 National Telecommunications and Information Administration (NTIA) statistical report of computer and Internet use in the U.S., entitled, *Falling Through the Net: A Survey of the ‘Have Nots’ in Rural and Urban America* (NTIA 1995). In the early years of diffusion of the Internet, access as a binary question seemed natural. In recent years, the term has been criticized for portraying the issue as a binary between technological “haves” and “have-nots,” between those who have access and those who do not (Gunkel 2003; DiMaggio et al. 2004; Selwyn 2004). Though the term is still widely used as a keyword, it does not capture the range of variables and factors that redefine the rudimentary notion of ‘access’ to explain individuals’ relationships to technology. Its continuing use in policy rhetoric has been criticized for reconfiguring dominant technological configurations within new media, which are biased towards uses of technology and new media which contribute to economic growth and development—configurations which favor a minority

of citizens who are gaining the skills to prosper in a technologically-mediated world (Mansell 2002).

The terms “digital inequality” or “digital inclusion” go much farther towards capturing the breadth and complexity of the issues that underlie this area, and the goals of the movement, as will be illustrated in a review of this literature. This more complex understanding of the issues around technology access and participation, especially among vulnerable populations, underlies the inquiries shaping this dissertation.

Much of the work in this area has elaborated on the idea of ‘access’ to technology as having multiple dimensions—and that use of new media must be considered insofar as it emerges from social processes and as part of existing social institutions and structures. Though baseline internet and technology use statistics across populations are useful for assessing digital inequality, these numbers do not provide much information about differentiated uses of technologies or their relation to outcomes (Hargittai 2008). DiMaggio et al. (2004) posit that, while access to basic IT tools, such as computers and the Internet, is one dimension of digital inequality, a more complete understanding of technological inequality and how best to address it requires a multi-layered understanding of individuals’ relationships to technology. They outline five dimensions of inequality with regard to Internet use that can be applied more broadly to technology use and the efforts of the digital learning environments directed at low-income youth, as considered within this dissertation:

- Technical means: the hardware, software and connections to which people have access.
- Autonomy: the ability to use technology privately, for individual purposes, in an unmonitored environment, for unlimited amounts of time.

- Skill: the ability to use technology (including hardware, software and connections) pragmatically and intuitively in order to exploit its potential for use.
- Social support: access to technical assistance and emotional reinforcement for technology use within social networks.
- Purpose: variations in use of technology, especially focusing on whether uses “increase economic welfare...or political or social capital..., versus those that are primarily recreational” (DiMaggio et al. 2004:35).

This expansion of what “access” means informed my initial approach in this study, aimed at assessing not only how young people engage with CTC programming, but also how it can be applied to everyday, consumptive technological use. I also soon saw that these multiple dimensions and concerns shaped the discourses and tensions within the spaces of the CTCs I studied.

These dimensions, while describing the relationship to technology at the individual level, are shaped by demographic and situational factors. Yet the extent to which low-income individuals’ relationships to technology are understood as having direct returns is under-studied. While research has been conducted which associates technology use with earnings (Card and Dinardo 2002) and school achievement (Attewell and Battle 1999), much remains unclear about the mechanisms at work, especially regarding differentiated returns as a function of users’ educational attainment, income, or race. An expansion of the paradigm of digital inequality is necessary to determine whether technology access ameliorates or reinforces existing patterns of inequality.

There has been a growing focus on the “participation gap,” or participation divide, as the predominant area of concern beyond access around Internet use, as Web 2.0 and the explosion of social media blur the lines between production and consumption (Jenkins 2006; Hargittai and Walejko 2008; Correa 2010). Despite idealistic predictions that

the Internet would constitute a new, egalitarian public sphere, researchers find that a class-based production gap exists even among those who are online, shaping the digital commons so that elite voices remain prominent (Schradie 2011). The study of socioeconomic differences and digital inequality has become more nuanced with regard to online behavior, especially with regard to the ability to receive, produce, and use information (Norris 2001; Hargittai 2003; O'Hara and Stevens 2006; Zillien and Hargittai 2009). Higher SES individuals, for example, have been shown to access the internet for more informational and “capital-enhancing” purposes, which may be more preferable than recreational uses, as informational uses are more likely to increase political knowledge, participation, life chances, and social inclusion (Peter and Valkenburg 2006; Hargittai and Hin-nant 2008; Notten et al. 2009; Wei and Hindman 2011).

These studies, though focused on the Internet, demonstrate a necessary reconsideration of what is meant by “access” and ICT, but also the relationship between access and use, as well as the consequences of engagement (Selwyn 2004). Individual engagement with ICT, or lack of “meaningful” use, is not solely the result of technological and psychological factors, but a mixture of social, psychological, economic and pragmatic reasons that make clear the continuing connection between class and cultural production. Selwyn (2004) focuses on the notion of “social inclusion” as a useful framework for assessing the consequences of engagement, which consists of several dimensions including production activity, social activity, and consumption activity. The impact of technology access should thus be evaluated as far as it allows individuals to interact with and be part of society. In particular, I contribute to the bridging of understanding actual ICT use as a spectrum of engagement by individuals, with a special focus on the above dimensions of

social inclusion, as seen through the lens of a particular population of low-income, urban, youth of color who participate in community programs intended to enhance youth tech engagement and activity.

Role of the Community Technology Movement in Addressing Inequality

The community technology movement, which provided the framework for the initial inquiries of this study, has been instrumental in expanding the mission of addressing digital inequality and finding innovative methods to build technological capital among low-income populations, though the basic purpose of many CTCs long remained to simply provide basic computer access (Servon and Pinkett 2004). Yet, as CTCs seek innovative ways to address these issues, many questions remain with regard to the effects these interventions have on social inclusion, economic welfare, and occupational mobility, especially as they are directed at young people.

Research in the area of young people and digital inequality remains somewhat limited, as studies about digital inequality tends to focus on adult populations (Larrison et al. 2002; Clark et al. 2004; Kvasny 2006), while analyses of young people and technology consumption have not generally differentiated by class (Campbell 2006; Shieh and Cheng 2007; Foley, Holzman, and Wearing 2007). Livingstone and Helsper (2007) argue that this is an effect of young people being widely perceived of as “the internet generation;” that they easily adopt and adapt to new technologies. Yet this does little to address the reality that access to and competence with ICT is not as prevalent among low-income children as middle- to upper-income children (Facer and Furlong 2001).

Research on young people and digital inequality often places the family unit at the center of empirical analysis, and seeks to understand how children's access and use is affected by parental socio-economic status and attitudes, but also primarily locates access within the home (Linebarger and Chernin 2003; Clark et al. 2004, 2005). Linebarger and Chernin (2003) examined access to, use of and perceptions regarding computers and the internet by parents and their young children. They found that children's attitudes towards computers did not vary as much by family SES as their parents' attitudes did. Instead, children's attitudes varied by gender and age, a fact the authors attribute to the wide availability of exposure to computers through the school system. These findings point to the importance of access outside the home for children from lower SES backgrounds, as well as for investigating young people directly, rather than relying on parent reporting.

Clark et al. (2004, 2005) used ethnographic research to understand how low and middle income families who own computers engage discourses of technological inequality. They found notions of individualism, as well as reliance on determinist frameworks, connected to technology use across class. Individual motivation and initiative were seen as essential for developing computer competency, rather than being the responsibility of the government or other public institutions. This reflects the manner in which computers, internet access and other technologies have been constructed as luxury consumer items, rather than as a necessary public good. "In this way, the discourse of individualism framed discussions of computer use so as to emphasize the possibilities for leisure-oriented consumption over and above those for education or citizenship" (Clark et al. 2004:535). Even perceived educational benefits for children are filtered through parents' perceptions of computers as luxuries that they may or may not choose to consume. Those

of lower socioeconomic status embrace a contradictory yet complicit rhetoric around computers as a key component of educational attainment and as an entertainment luxury. My interrogation of youth's everyday relationships with technology, including its role within the home and within familial relationships, further complicates and adds to our understanding of the place of the computer and other technological devices within the home.

This focus on computers as leisure items undermines support for programs such as those in CTCs, and allows corporate IT giants to insert their own agendas (of creating more consumers) into progressive social projects. While Clark et al. have a largely negative view of individualistic, consumer orientations toward technology as superceding educational and civic orientations, they offer a useful analysis of the importance of both frameworks as co-structuring the experience of young low-income users who are involved in CTCs.

While schools are assumed to be the main resource for technology exposure for low-income children, CTCs constitute a "third place," i.e. a public space outside of school and home where young people can gather (Clark 2003). According to London et al. (2010), CTCs can be key actors within unstable communities, offering a safe and proximate environment for youth with which they can cultivate familiarity. But studies on youth within community technology initiatives also illustrate the difficulties and importance of providing youth with an empowering understanding of technology while the larger social context encourages more shallow interactions with technology (Clark 2003; Valaitis 2005; Hamilton and Flanagan 2007). What is suggested, however, is that disen-

franchised youth may benefit from community technology initiatives that replace dominant consumer-oriented discourses with programming which reflects more empowering or civic-minded uses.

Youth and Technology: The Expansion of Digital Learning

The shift in conceptions about digital inequality, and growing recognition of the place of technology in young people's lives and specifically, its role in education, has been reflected in a growing literature which seeks to expand understanding of how youth interact with media across all spheres of their lives, and to grow pedagogical and theoretical approaches to helping young people learn through media and technology in ways that utilize this understanding (Livingstone 2002). This dissertation has emerged in tandem with this expansion in focus. A major emphasis in this new area of study draws on the sociology of childhood approach. With a focus on young people's lifeworlds and new media in particular, we see an integration of child-centered and media-centered approaches from a structurationist perspective in which each is understood as providing context for, and constituting the other (Giddens 1991). In particular, adolescence is seen as a key stage of identity formation and transition (Weber and Mitchell 2008).

These new studies place primacy on recognition of youth agency within the creative learning environment, and development of a holistic understanding of young people, the media and technology environment in which they live, and their situatedness in social, economic and cultural structures (Forman 2002; Mitchell 2002; Chang 2005; Ito et al. 2010; Watkins 2012). In addition, the integration of child-centered and media-centered

approaches illuminates the processes of social change which affect both, and which structure debates about both (Livingstone 2002; Morimoto and Friedland 2010). Researchers in this area are working to correct the shortage of youth media research at all levels, from everyday youth engagement to youth media and digital learning programs, to form an integrative approach that brings together youth populations, practices, and social and cultural trends (Holloway and Valentine 2003; Ito et al. 2008; Tyner 2011). These are major structuring concepts within my dissertation, as well. In this final section, I will outline the contributions this field has made to a more complex and useful view of young people and technology and highlight where this dissertation adds to knowledge.

One illustration of this is the concept of youth as inhabiting a “new media ecology” – a metaphor which paints youth engagement with technology as a phenomenon which connects all spheres of experience: ‘The everyday practices of youth, existing structural conditions, infrastructures of place, and technologies are all interrelated; the meanings, uses, flows and interconnections in young people’s daily lives located in particular settings are also situated within young people’s wider media ecologies’ (Horst et al. 2010:31). Livingstone (2002) notes how such an understanding is essential because of trends in media use, including the growing role of media in the everyday lives of young people, regardless of family income, and the convergence of media and collapse of boundaries between spheres of daily life. Children’s leisure “can no longer be clearly separated from their education, their employment prospects, their participation in public activities, or their participation within the private realm of the family” (Livingstone 2002:3).

Broad goals of this area of study include: identifying best practices regarding educational technology, emphasizing new modes of learning that recognize youth agency, and bringing technology into the learning environment in innovative and creative ways. There is also an effort to break down institutional barriers that inhibit these qualities by deemphasizing the traditional classroom model of education, instead emphasizing “learning” as an activity that can, and does, occur in multiple settings in a young person’s life (Ito et al. 2010).

Informal Learning/Situated Learning

The notion of informal learning has been utilized to recognize how young people’s everyday interactions with technology outside of school can constitute learning processes. This can include democratic processes between teachers and learners, trial and error, exploration, experimentation, play, and collaboration with others (Buckingham 2008:16). Much of this type of informal learning is carried out without explicit teaching; it involves active exploration, learning by doing, and apprenticeship. It is profoundly social: it is a matter of collaboration and interaction with others, and of participation in a “community of users” – especially peers (Buckingham 2008; Drotner 2008; Ito et al. 2010; Lange and Ito 2010). Beyond simply being another type of learning that should be recognized, researchers suggest that this type of learning is more engaged and active than “school-style” learning –that it is self-directed, spontaneous, and motivated, and thus that it should be utilized more, and more effectively (Papert 1996). Ethnographic studies based on sociocultural approaches, which recognize that youth gain competencies and knowledge outside of avenues of formal instruction, show how learning is accomplished in informal environments, “as a side effect of everyday life and activity, rather than in an

explicit instructional agenda” (Ito et al. 2010:21). These studies are also concerned with the context of youth digital practices, and how youth enact social roles and power relationships through these practices, understanding that, even when youth digital practices seem individualized, they are embedded within youthful communities of practice (Drotner 2008).

The growing attention to informal learning and its intersection with technology and media learning in the realm of public education has led to the increasing presence of experimental youth programs focusing on digital media and learning. Community-based youth media programs consist of very different educational structures and settings, but they generally make attempts to make connections between formal and informal literacy practices within non-profit or after-school settings, while offering an array of possibilities to youth around technology, including access, training, and skill development (Sefton-Green and Soep 2007; Tyner 2011). The integration of informal learning with educational spaces characterizes the situated learning approach, which sees learning as “an act of social participation in communities of practice” (Lave and Wenger 1991). Learning is understood as embedded in communities of practice and social interactions (Gee 2003; Buckingham 2008). These environments encourage relationships of knowledge sharing, mentoring, and monitoring within social groups. Young people become participants within shared cultural systems, and positive outcomes are those which connect learners to networked communities, which can include collective social action or the passing on of knowledge from more experienced members to new participants (Buckingham 2008; Ito et al. 2010).

A group of researchers with an interest in youth-driven digital learning, and young people's movement between formal and informal learning environments in a converging world, has conceived of a model called "Connected Learning" as an agenda for educational reform in a networked society. This approach is intended to expand the benefits of informal and situated learning to all youth, which requires addressing broader trends and inequalities which affect some young people's access to these experiences (Ito et al. 2013). Building on the finding that young people learn best in interest-driven environments, the Connected Learning approach advocates building educational opportunities that incorporate often divergent spheres in young people's lives: peer culture, interests, and academic content. Connected Learning takes the interest-driven and peer-driven aspects of youth engagement with new media, and seeks to add social supports and infrastructure to help them connect these uses to academic achievement and future opportunities. The authors acknowledge that this is less likely for, and thus this approach is aimed at, less privileged and non-dominant youth.

Overall, this new area of study emphasizes how informal learning environments make for conceptually rich spaces to investigate learning processes, with a focus on youth agency. It also directs attention to the need for greater understanding with regard to the impact of these different educational structures and settings on young people's skills and the content of their creations (Weber and Mitchell 2008). Weber and Mitchell particularly note that we need to know much more about learning environments that are informal and self-motivated, with little adult supervision, versus environments where youth are subject to greater adult control and restrictive parameters—a comparison that emerged within the

present study of two different CTCs. This focus on creating environments for constructionist learning corresponds to a growing interest in how youth learn on their own, not only in terms of digital media, but also how their enthusiasm for digital practices in everyday life may impact their attitudes towards learning and educational practices (Kafai, Peppler, and Chapman 2009). Researchers have also looked to young people's leisure uses of technology as a means of challenging the narrow and inflexible uses of ICT in schools (Buckingham 2008). However, how this plays out in particular for low-income and marginalized youth remains understudied.

Recognizing Youth Diversity within Media Programs

This literature also continues to develop the goals of media production programs and digital learning programs, and how best to meet them. Media education has historically sought to redress the perceived power imbalance between young people and the media by emphasizing young people's agency. However, the definition and recognition of youth agency and what it entails can be murky, as can the specifics of how learning initiatives develop this agency (Dezuanni 2011). Poyntz and Hoechsmann (2011) outline four pivotal questions that school- and community-based educators should take into consideration when planning and implementing such programs: tech skills development and vocational training, creative expression and youth voice, democratic participation, and pleasure/play and critique (p. 301). Yet there are competing discourses regarding the most worthy goals within these programs, and for which youth (Vered 2011). Specifically, these discourses become even more contested or limited when it comes to what working-class, low-income, or otherwise marginalized youth most "need." Poyntz and Hoechsmann (2011) address the sensitive class dimension of the vocational aspect of

training within informal digital learning programs. Many programs and researchers fear emphasizing such training dilutes purer intentions like youth voice and creative expression. But there is also a practical emphasis on vocational skills for lower SES youth – if they aren't succeeding in the mainstream school system, practical media production skills may provide them with an alternate career path and a means of employment.

There is also a growing recognition of the diversity of youth engagements with media, technology, and learning environments. One body of work has characterized the primary distinction of interest around tech use to be generational—that all youth are “born” into a digital world that they naturally gravitate toward, while older populations struggle to adapt (Tapscott 1998; Prensky 2006). However, youth are not all “digital natives” or “cyberkids” with equal skills, access, and inclinations. In fact, they have significant differences, shaped by personal inclinations and individual histories, which need to be better understood in their complexity (Buckingham 2008; Holmes 2011). The collapse of the binary digital divide, combined with the sociology of childhood approach, has led to some acknowledgement of the use of media and technology by diverse groups of young people. How, and to what extent, remains understudied.

Hanging Out/Messing Around/Geeking Out (Ito et al. 2010) is one typology of use developed in conjunction with the Connected Learning approach, which emphasizes “genres of participation” around youth technology engagement. This typology emphasizes attention to generational and youth culture practices, rather than race and class as a focal point in understanding “the forms of competencies, skills, and literacy practices that youth are developing through media production and online communication” (p. 26). The

Hanging Out/Messing Around/Geeking Out (HOMAGO) model identifies three categories that correspond to differing levels of commitment and intensity in new media practices, and posits that these differing levels of investments may be more essential for understanding youth practices and engagement than race, class, and gender. Especially as youth often engage fully with technology in recreational and social practices in everyday life, the HOMAGO project is a descriptive, ethnographic effort to capture meaningful youth media practices, and to illustrate the resources youth need to be able to participate in different genres of practice (Ito et al. 2010; Horst et al. 2010). The three main types of media practices, which increase in expertise and intensity, are:

- **Hanging Out:** This is everyday, social use of new media and technology, and is comprised of lightweight, ongoing uses of technology to be present and connected both off- and online.
- **Messing Around:** A transitional genre, “messaging around” is when a youth starts to have a more intense engagement with new media, characterized by experimentation and following interests, even if a youth is unsure of best practices, or precise end goals. This can include internet searches or playing with a new program.
- **Geeking Out:** “Geeking out” occurs when a youth develops expertise and intense interest-driven participation in a more specialized area of new media or technology. The youth becomes involved in alternative status economies, and friendships are often connected to these specialized interest groups. It is within this genre of participation that creative production happens.

Though not particularly focused on race, class and gender, the authors acknowledge that “geeking out” requires basic technological access, but also an “interaction of different resources,” including family, both on- and off-line peers, access to knowledge and social connections, “time, space and resources to experiment,” and “access to a community of expertise” (Horst et al. 2010:73-74). This dissertation endeavors to illustrate the diversity of youth engagements with technology in a way that integrates them with the dimensions of race, class and gender, which remain powerful structuring

social characteristics that influence access to those many requirements for intense and creative engagement with technology.

I also remedy some of the lacunae and narrow vision that can characterize studies of urban, low-income youth of color and their relationships with technology. Research around young people and digital media can sometimes romanticize young people and their uses of new media in a way that, instead of updating the problem of digital divide, ignores it (Buckingham 2008). Seiter (2007) suggests that while the “digital divide” as a concept has passed out of fashion in the public discourse, it has not been replaced with more complex terms such as digital inequality or digital inclusion—even as a lack of technology access has been finally recognized as “an intractable social problem” and “a phenomenon with deeply undemocratic social consequences” (p. 102). Hopkins (2010) suggests that evaluative studies of youth initiatives tend to be uncritically laudatory, lacking long-term, in-depth studies of such programs—which can be difficult to do with youth, especially those who are marginalized or “at-risk.” Conversely, studies of digital inequality can also serve to group marginalized youth together as technology users in ways that obscure the rich differences among them. These differences, characterized by youth’s particular new media contexts, relate to their engagements within the CTCs I studied.

Finally, the research often idealizes the potential of such spaces to empower youth, while ignoring the reality and difficulties of the on-the-ground enactment of these ideals. For instance, digital storytelling has been held up as a powerful outlet for “youth voice and expression”: the ability to tell one’s story has the powerful potential to allow a

young person to “promote youth agency, help youth gain skills to transform the institutions in which they are set, and create bonding and bridging networks in the process” (London et al. 2010:204). Media production for youth has been observed to exemplify self-motivated learning through play and trial-and-error, through actively engaging with the world. Youth acquire the ability to create and critique, a sense of their own aesthetics and learning goals, alongside technical skills. They articulate and experiment with multiple identities as they refine their creations (Weber and Mitchell 2008:43). Digital media programs produce new competencies or forms of literacy, new ways of forming identity, and new more distributed and democratic politics (Buckingham 2008:13-14). These add up to laudable goals, but weighty outcomes to expect from individual youth projects/programs. Seiter (2008) suggests that we must probe “undesirable consequences” in digital learning, along with the victories, in order gain a deeper understanding of “the ways learning through technology favors higher income and better equipped students, and the forms of knowledge that tend to be excluded in the digital environment” (p. 48).

Studies from this perspective suggest that many young people are neither as competent at technology as is assumed, nor as driven to consume it or as actively obsessed with it. Very few are interested in technology in its own right, and most are simply concerned with what they can use it for (Buckingham 2008). Buckingham (2008) suggests that we need to be wary of simply celebrating young people’s “informal” experiences of media and technology (p. 17). While this is true for youth of all income-levels, my dissertation probes the particular consequences of this for low-income and marginalized youth, who may require more resources, structure, and support to move between genres of participation. Many have hailed the blurring lines between producers and consumers such

that these processes and identities become intertwined and simultaneous – hence, the evolution of the “prosumer” (Lister et al. 2003; Jenkins 2006; Ritzer and Jurgenson 2010). But others note the banality of much new media use: most young people’s everyday uses of the internet are characterized not by innovation and creativity but by mundane communication and informational retrieval (Buckingham 2008; Holmes 2011). It is clear that the potential does not automatically lead to action when it comes to youth media production and technology engagement.

The Intersection of Race, Class, and Gender in Youth Technology Studies

An essential recognition, however, is that digital and mobile media are crucial for teens to be part of their culture and community, and to establish their identities—and that this is true across race, class, and gender (Watkins 2012). Yet race, class, gender and other identity markers still structure young people’s experiences in ways that need to be understood. It has become increasingly clear that as young people become deeply entrenched in digital media, social divisions on the internet along lines of class, race, and ethnicity have deepened, leading many to speak of the Internet as a new segregated community (Seiter 2007; boyd 2011). This is in clear opposition to the early idealism of the internet as a great leveler of differences. A common example has been “white flight” from Myspace to Facebook, where the former’s aesthetics and demographics have turned white youngsters off, while it maintains popularity with Black and Latino youth. Such self-segregating patterns illustrate how digital gated communities emerge and structure where young people go and who they are likely to connect to online, in ways that reflect offline social patterns (Hargittai 2007; Watkins 2009). Online social preferences become Bourdieuan markers of class position in a new medium. The shift to new networks like

Facebook also tends to draw the eyes of researchers, where the “old” or “low class” spheres, which are still inhabited by minority bodies, become insignificant, or disappear altogether (Everett 2008). As Watkins (2012) notes, the digital media ecologies of Black and Latino participants are understudied and little is known about their everyday practices, even as they spend comparable time online to their white counterparts (p. 2).

Some researchers have started to examine the media and tech experiences of youth on the basis of race, class and gender, in response to many early (and current) studies which tend to speak about youth engagement with technology as a generalizable whole, while primarily talking about a default white, middle class youth—an oversight which ignores the participation of others in digital media culture (Seiter 2007; Everett 2008; Cunningham 2011). Considerations of race and class are also seen as essential because of persistent inequalities that structure the information technology economy; if there is guarded enthusiasm for the role of digital media technologies in the lives of white, middle-class youth, it is even more tempered for minority youth (Everett 2008). These concerns are especially ripe for investigation when we consider how minority youth have actually been cited as early adopters in terms of internet and cell phone usage (Taborn 2008).

Gender and Learning Technology

Studies into gendered, and particularly girls’, experiences with technology are limited in number, and seldom differentiate between race and class and the ways in which intersecting identities can impact digital media experiences (Schofield 1995; Harrison, Rainer, and Hochwarter 1997; Huber and Schofield 1998; Cuban 2001; Margolis and

Fisher 2002; Liff et al. 2004; Everett 2008; Cunningham 2011). One issue in studying girls in digital learning environments can simply be their lack of presence in these environments. There is an initial need for co-ed and girls-only programming classes, in order for researchers to more fully understand the mutual shaping of gender and technology. There is also a concern, connected to the earlier concern around overly laudatory evaluations of tech programs, that celebration of girls' choice and agency around technology and digital media leads to a neglect of structural and inequitable power relations (Willett 2008). Willett notes how the framing of girls and technology needs more complexity, even within the larger competing discourses on youth and technology: "We should look at how discourses of choice, which offer a space for pleasurable consumption, also contain ideas about girls who can navigate choices successfully, as responsible citizen consumers, and those who are seen to lack the discipline to make good choices" (p. 64).

Helping girls to construct tech-savviness has been cited as an important strategy for decreasing gender inequality (Hill, Corbett, and St. Rose 2010). Many girls report feeling disenchanted by the perceived masculine culture of digital technologies. These feelings are of concern especially with regard to the under-representation of women in STEM fields—and the extent to which young girls' do not envision themselves pursuing such careers (Cunningham 2011). Much of the available research on girls and technology also relies on narrow definitions of gender and technology, focusing on one particular learning environment or use of technology. Because of the focus on the gender binary in technology learning, we know little about race/ethnicity and class differences among girls in technology learning. If girls in general are dissuaded from tech careers and interests, this is likely increased for girls from low-income backgrounds and marginalized by race

and class. Other studies of youth digital learning and media production programs have noted low female participation in youth interventions based on media, music, and other technologically-mediated creative pursuits—but higher achievement by those young women within those programs (Baker and Cohen 2008; Hopkins 2010). CTCs and other digital learning environments may be more essential to girls than boys, in terms of increasing intense engagement with technology. Girls, especially marginalized girls, may benefit from structured environments that at least encourage them to participate and solicit their participation on equal levels as boys (Huber and Schofield 1998; Seiter 2008).

The Intersection of Class and Digital Learning Environments

There are clear benefits that technology access can bring to disenfranchised student populations. Computer access compensates for some of the obstacles to boys' success in elementary school—especially for working-class boys, for whom professional careers are a distant and unrealistic dream. For working class boys, the greater autonomy offered by computer classes (in school) is especially important. They can be involved in school without feeling as though they are capitulating to the demands of others (Seiter 2008:103).

Yet research into how class in particular structures youth engagement and learning practices around technology is especially lacking. Seiter (2008) focuses on the myth of technological advantage for working-class and low-income boys—that the discussion of gender and computing generally contains a hidden class and ethnic bias and that “the inherent advantage for boys disappears when one considers boys from working-class families” (p. 43). While she documents boys' greater enthusiasm for computers, she did

not find that they engaged in focused work on the computer, nor did they present notable gifts or talents in the realm of technology. In fact, she found that it was harder to keep the boys on task than girls, and that girls exhibited greater seriousness in their computer class assignments. Boys' enthusiasm and dominance in the digital learning environment does not necessarily indicate greater skills. The manner in which gender and class intersect here to reverse expected outcomes around technology engagement demonstrates the need for greater investigation into these processes.

The Space of the Current Study

This dissertation is an effort to integrate many of the concerns raised in this growing area of research. I am especially interested in recognizing the diversity of individual youth engagements and practices, but reconnecting them to experiences of race, class, gender. As much of the work in this area is separated in different areas of experience—social/peer, family, school, informal programs—I am building a more cohesive view of the diversity of experiences particularly within a group of low-income, minority, urban youth who participate in two different informal learning programs. While there is recognition and acknowledgement of the interaction of different spheres of youth new media engagement, and varying emphases on individual and structural influences, we need more information on and analysis of these interactions. Rather than developing a neat, descriptive typology into which youth get inserted and categorized, I explore the messiness and variability of the experiences of these youth so as to better understand how these processes and discourses around learning, productivity, and creativity play out, and connect across spheres of experience for these young people who so often get talked about, rather than listened to. I examine additional factors that appear within these processes that affect

outcomes and experiences in ways that complicate categorizations, but which shed light on how these marginalized youth develop their identities as technological citizens and consumers.

With my long-term focus on two different informal learning programs, I address the need for more research into what happens in informal digital learning environments, especially when inequalities get replicated within these ideally egalitarian spaces. CTCs are essential for low-income young people to engage in technological experimentation and play, but Cunningham (2011) highlights how some youth's participation remains peripheral, even in ambitious digital learning environments. She focuses on gender, yet there are many ways in which marginalized identities can play into marginalized participation in DML.

It is also within the chaotic, and often frustrating, processes of learning and creation within these environments that we have valuable opportunity to understand young people and their motivations. Gee (2003) argues that it is when youth are operating at the outer edge of their regime of competence that learning is most exciting or rewarding. Tripp (2011) emphasizes that young people can struggle "to engage with the academic content of media production," and find it hard or boring, and yet still find "aspects of the process meaningful" (p. 362). On one hand, youth-driven projects may be hard for kids to stay focused on; on the other, teacher-driven projects limit youth's ability to pursue their own interests, which may result in half-hearted engagement or even active resistance (Tripp 2011:368).

Chaotic learning processes can be frustrating to youth, especially as hierarchies get recreated within these environments (Drotner 2008). Informal learning can be particularly helpful for marginalized youth, but we need better information to make this a positive experience for as many youth as possible—how best to scaffold learning and how to be aware of outside inequalities when they get reproduced within the environment, whether by adults or youth. Drotner (2008) notes that these radical learning processes are often carried through only because the participants’ personal investment, curiosity, and drive overrule the obvious setbacks, quarrels, and disappointments also encountered along the way.³ I additionally look at what else drives the youth I studied, as well as what frustrates them or stops them in their creative and productive processes. They are certainly driven by their own interests and aspirations, but I find they often need something else to move them outside a certain limited zone of production, to move them up the “ladder of participation,” or across genres. A focus on the CTC staff—the adults structuring these spaces—illuminates the need to pay attention to guiding principles versus tensions and possibilities in practice. The process of the attainment of multiple goals within these spaces shows how they require ongoing questioning and negotiation by youth and staff, in responsive and dynamic ways, and with diverse inputs and outputs—which I depict in the following chapters.

³ This is also reflected in the recent attention to “grit” as an important element in youth success in learning (Tough 2013).

Chapter 3

Research Methodology

The goal of this study is to investigate the experiences of urban, low-income youth within community technology centers, as well as their technological experiences in everyday life. I chose a qualitative approach to this study, as it was most appropriate for exploring little understood phenomena and gaining a richer, in-depth understanding of how people make sense of their lived experience (Cresswell 2003). While there has been increasing quantitative data on types and amount of technology use and ownership among various populations, there are still many questions about how various populations incorporate and understand technology in their lives. Qualitative researchers “study things in their natural settings, attempting to make sense of or interpret phenomenon in terms of the meanings people bring to them” (Denzin and Lincoln 1998:3). Additionally, my research approach is influenced by my interest in advocacy for underserved youth around agentic and empowered technology use concurrent with the missions of the community technology centers I studied. Creswell (2003) states that:

A qualitative approach is one in which the inquirer often makes knowledge claims based primarily on constructivist perspectives (i.e. the multiple meanings of individual experiences, meanings socially and historically constructed, with an intent of developing a theory or pattern) or advocacy/participatory perspectives (i.e. political, issue-oriented, collaborative, or change oriented) or both. (P. 18)

Though I was not actively working as an advocate as part of my participation in the field, I operated from a critical perspective concerned with empowering young people to transcend the constraints placed on them by race, class and gender. I was also very conscious

of proceeding with my research in such a way as to not further marginalize my participants (Cresswell 2003:10).

Qualitative research methods, specifically ethnography/participant observation, semi-structured and unstructured interviews, and content analysis, also allowed me to maintain an emergent research process as I moved from my broad areas of inquiry into the field, which in this study contained two very different sites which required some variety in research approaches (Miles and Huberman 1984; Oberg 2003). Altheide and Johnson (1998) provide support for such an approach in saying that qualitative research “is carried out in ways that are sensitive to the nature of human and cultural contexts, and is commonly guided by the ethic to remain loyal or true to the phenomena under study, rather than a particular set of methodological techniques or principles” (p. 290). Especially with regard to understanding the role of technological objects, software, and hardware as operating within and across the different spheres of experience I was studying, I wanted to stay open to the interconnectedness and interplay between the mediated experiences of the youth in my study, and across my sites (Maczewski, Storey and Hoskins 2002).

Site Selection

The CTCs for this study were selected through a process of purposive sampling. I was interested in finding technology centers in and around Boston with a vested interest in serving low-income youth through a variety of programming. I had previously worked for an organization called Community Technology Centers’ Network (CTCNet), which was a national non-profit network of CTCs and organizations whose mission it was to provide technology access and education to underserved communities. A former co-

worker who remained very active in the Boston CTC community served as a gatekeeper for me, and was able to introduce me to the staff of several Boston-area CTCs that met my criteria as cases for this research.

The data were collected within two Boston-area community technology centers with a focus on young people. The sites were chosen for their strong, but varied youth programs that engage marginalized young people from local neighborhoods and provide them with ICT training and instruction. Both centers are connected to subsidized housing complexes, and offer computer access, training and programs for the housing residents as well as members of the larger community.

Because of the broad nature of my research questions, a multi-sited ethnography seemed the most appropriate design (Marcus 1995). I am not simply studying specific and localized programs or centers, but utilizing these sites as starting points to explore lives “lived not in discrete locations, but through various forms of connection and circulation” (Hine 2007:656). By choosing two sites with very different approaches and environments, I was not locked down in analyzing and generalizing a single program, which would have limited the generalizability of my findings (Nadai and Maeder 2005). Instead, I was able to view my young subjects, as well as the structure of the programs, comparatively as well as in conjunction with one another in order show how small scale local sites fit into complex social systems. My interest not only in the programs, but in youth’s everyday experiences and their technological creations and activities, could be construed as “fuzzy fields” or “fields without clear boundaries with regard to many dimensions” (Nadai and Maeder 2005:4). I also wanted to observe as diverse a group of youth as possible, and to meet enough young people to be able to interview a subset of 40 of them. As most

programs are limited in scale by their resources, having at least two sites seemed prudent. My research at the two sites can be considered to be a comparative case study in some aspects, where each site represents a different approach to digital learning in which I explore similarities and differences in conjunction with the participating youth (Neuman 2003:422). However, this comparison is not central to my research agenda. Instead, I approach my two sites a way to aggregate knowledge around young people's technological experiences in order to make broader generalizations. Ultimately, as reflected in the pseudonyms I selected for the programs, I found the very different programmatic approaches in the centers to be conceptually useful and interesting in terms of investigating and analyzing two fairly different approaches to youth digital engagement within the same geographic and demographic area. Yet these observations emerged during and after my fieldwork and analysis, rather than being deliberately planned as part of my research proposal.

Within each center, I focused on specific programs. The first program, which I call The Free Program, was characterized by a number of semi-structured, instructor-led programs throughout the year, as well as open computer access for teens. The center's mission statement of "youth educating youth to find their passion for community and economic development" reflects the desire for ICT to function as a means to individually productive and community-based ends.¹ The Free Program consisted of a large computer lab with 15 desktop PCs available for use, a few video and digital cameras, and a small, but well-equipped recording studio. The center is housed alongside a number of other storefronts, including a hardware store and a pizza shop, on a busy Boston street. The in-

¹ From an informational pamphlet distributed by the center.

side of the center is cheery and brightly painted, with posters and projects from the children's afterschool program dotting the walls. Along with the lab and studio, the center contains an administrative office, where the director and her support staff have desks, two other small rooms with a few tables and desks, suitable for homework and other non-computer dependent tasks and meetings, and a fully equipped kitchen where afternoon snacks are prepared.

All activities for teens took place between 5 and 8pm on weekdays. My primary site of observation was the Digital Film and Music program, which attracted around 10-20 youth on a given day, though numbers and attendance varied throughout the year. The Digital Film and Music program was scheduled for Tuesday and Thursday evenings. On these days, separate film and audio production instructors were available to aid youth and to help them to conceive and carry out projects. The computer lab was generally also open for free use during this time, and during these hours there would generally be several other youth in and out of the center, using the computers to work on homework, apply for jobs, surf the internet, chat with friends, or play online games. Participation in the Digital Film and Music Program was entirely voluntary, generally consisting of a stable core of "regular" youth who could always be expected to make an appearance. There was also a revolving population of youth who showed up inconsistently, or hung around the center socially. Others were involved in other programs at the center, such as the afterschool program where teens were employed supervising young children from the housing complex in the afternoons. Because there was varied activity going on in this space, lines were sometimes blurred between participants and non-participants in DFAM and the

technology center in general. As a result, I remained open to this variety in my observations and in terms of selecting youth participants to interview and observe there. Not all youth were primarily consistently engaged with the DFAM, and I was interested in other uses or non-uses youth made of this technology center as a result of its varied and flexible environment.

The second program, The Learning Program, was a more structured, goal-oriented summer program, in which youth learned specific technology modules and then taught these modules to younger children in the community. These modules included:

Hyperscore: A proprietary visual music composition program designed for users with little musical knowledge or experience. Users create musical compositions by drawing in the graphical interface. (<http://www.hyperscore.com>)

GIMP: An open-source image-editing program, comparable to Photoshop. (<http://www.gimp.org>)

Alternative Energy: Not a specific software or hardware program, but a module where youth learn about different energy options, through lectures, videos, and hands-on examples such as fuel cell car kits.

Scratch: A computer programming language designed by the MIT Media Lab and aimed at youth, often used to create simple cartoons and video games. (<http://scratch.mit.edu>)

PICO: The PICO Cricket and PICO Board allow for robotic creations, and can be integrated with the Scratch programming language. It is similar to LEGO Mindstorms robotics kits, but the PICO Cricket was envisioned for more artistic creations, such as kinetic sculptures. The PICO Board has sound and light sensors inputs, a slider, and a button that can be programmed in conjunction with a Scratch animation (like a video game controller) or physical objects. (<http://picocricket.com>)

Digital Design and Fabrication: The Fabrication Lab (or FabLab) allows for designs made on a computer to be turned into physical 3-D objects. The lab hosts a collection of laser cutters which cut and engrave objects of different sizes and materials.

The program is intended to encourage interest in careers in science, technology, engineering and math (STEM), and to provide a summer work experience for local youth. One stated goal is to “create a critical mass of 3-5,000 youth...exposed to and engaged with an array of emerging technologies and sciences and who can catalyze change around what people in our community believe is possible to achieve in math and science.”² Youth aged 14-19 years are encouraged to apply for the program and are interviewed before acceptance. Around 40 new youth teachers are selected each year. Some youth teachers from previous years return and teach modules to new teachers, having earned a modicum of seniority. A few youth who had been teachers but had begun college were brought back as “college mentors,” and they took on more administrative and supervisory roles over the current youth teachers.

The program begins with a training period beginning at the end of the school year, during which the youth teacher attend paid training sessions every Saturday for about 6 weeks. Then, the youth teachers work 6 hours a day, 4 days a week once summer begins, receiving an hourly salary. For the first part of the program, youth are responsible for learning the various modules, and are scheduled to move between them throughout the day as scheduled by the adult supervisors. The program partners with the Massachusetts Institute of Technology (MIT). MIT provides access and training for some of the modules

² Except from National Science Foundation (NSF) proposal the program submitted.

like Scratch and PICO, and has provided the Fab Lab equipment. During the training period, groups of youth visit MIT's Media Lab for their sessions, which is also viewed as a way to expose "at-risk" youth to the college environment.

As part of learning the various modules, youth teachers also practice teaching the modules, and teaching skills in general, in preparation for the second phase of the program. The Learning Program partners with other community centers around the city with summer programs for younger children. Youth teachers, in groups, either go out to other centers in order to teach a certain module activity, or a group of children is brought to the center. These sessions often last an hour or two, and conclude with a "circle up" in which the teachers encourage the kids to show off their creations or talk about what they learned that day.

In addition to teaching community youth, the youth teachers form groups that work on technology projects intended to address community problems in some way. They are expected to work on these projects throughout the day when they are not scheduled to be teaching. These projects culminate in a public project exposition at the end of the summer to which families, community members, funders and the general public are invited.

The Learning Program takes place in a community technology center about a half-mile from The Free Program, in a slightly more crowded area of the city. The center is located in a basement space of the housing complex to which it is attached. The space is more industrial and darker than the Free Program due to the nature of the space, but with a slightly more expansive layout. After walking down a few steps into the main entrance,

one encounters a few desks to the left, where the directors work. Beyond is the main computer lab, which consists of 3 rows of 4 computers. There is a Smart Board at the front of the room, which allows instructors to demonstrate computer techniques by actually touching the screen. To the right of this room is a hallway/breakroom area, which leads into another larger room. This room has a few more PCs along the wall, plus 2 Macs. The floor area of this room is largely open, and is where groups of youth will often “circle up” to plan and debrief the day. There is also a round meeting table in a nook on the far side that is used as an additional work and meeting area. Finally, next to this area is the “Fab Lab” where the various large machines that allow users to design and manufacture physical objects is housed. There are several computers that are connected to the machines, which can be thought of as glorified printers. The machines include smaller ones such as the etcher and the laser cutter, but there is also an extremely large cutter which takes up a large amount of space in this area. This large machine can cut thicker materials such as wood, and was rarely used in the daily course of the program.

Data Collection

I secured permission to conduct research at each of the sites in early 2008 and performed preliminary site visits to assess the shape that data collection patterns would take at each site. Though I used the same methods at each site, the different programs required tailoring of these methods in order to acquire data at each site and to systematically observe the everyday processes within each program. I secured IRB approval, defended my dissertation proposal and began fieldwork in May 2008. Between May 2008

and September 2009, I conducted fieldwork in both programs. This encompassed two cycles of The Learning Program, which was summer-based, and consistent attendance at The Free Program throughout the school year and summer.

Participant Observation

The majority of my time at both centers was as a participant observer, during which I sought to note and record young people's experiences within the programs. During my fieldwork hours, I would interact with both youth in informal conversations about projects they were working on, sit next to them as they played on the computers, or just chatted with them about their lives. I would sit in on meetings held as part of the program and make suggestions and participate as much as seemed appropriate, without trying to overly direct youth's actions. I also would similarly talk to the adult staff and volunteers to get their perspectives about center operations as well as individual youth and their projects.

It was important for me to become a part of these programs and a regular presence in order to build rapport. The young people in the programs were sometimes shy and reticent to open up to an outsider adult, especially a white adult from outside the community who seemed to be there to observe them and take notes about them. To move past these barriers, I tried to participate in as many activities as possible in and outside of program time that would allow me to bond with youth participants. Such activities were more common at TFP, such as community barbecues and other parties, and fieldtrips for ice cream or to film festivals. At TLP, I would often hang out with groups of youth during lunch or break times and listen to them talk about their lives and interests. I also tried to be as open as possible with youth about what I was doing there and what I was interested

in learning about them. For the most part, they responded to my inquiries and generally ignored my note-taking, but occasionally someone would ask me what I was writing. In these instances, I would try to briefly but candidly describe the sort of observations I was currently making about the situation. The adult staff who facilitated my entry into the sites were already aware of my interests and made themselves available to answer questions and aid me in securing youth participation. For other adult staff who were not aware of the particulars of my research, I would briefly explain what I was doing and expand upon this if they asked questions, which was surprisingly rare.

I generally visited each program two times per week for a few hours. As mentioned, I visited TFP during the Tuesday/Thursday Digital Film and Music Program, which lasted from approximately 5:30pm to 8pm. With TLP, I attended every Saturday training session at the beginning of the program. Once the summer workweek began, I would vary the days and times I attended, though I often visited on Mondays and Wednesdays, so as to balance my work schedule. I would not generally spend a whole 7-hour day at TLP but would generally attend the morning or afternoon session, and would often try to schedule some interviews before or after.

In each program, I developed patterns during each visit which allowed me to observe different areas and activities, as each program generally had many different things going on at once. At TLP, this generally meant moving between modules when youth were primarily learning them or observing teaching sessions once those began. I also observed working sessions for the group projects, as well as the various debriefing sessions and meetings that occurred at the beginning and end of each day. At TFP, I would move

between the different spaces where activities were occurring, which often varied depending on what people were working on. I would generally spend some time in the main computer lab, moving between different youth who would often be working or playing on something individually. I would also observe the recording studio if there was activity. Finally, there were often video projects being filmed outdoors, either within the apartment grounds or in the surrounding neighborhood. I would often go off with groups of youth and adults to observe the filming or photography process.

I recorded my fieldnotes in notebooks while observing or shortly after interactions, endeavoring to achieve thick-description while maintaining an active stance in the proceedings. Sometimes, if I had an audio recorder with me, I would attempt to record conversations or meetings so as to more accurately capture direct quotes. All field notes were transcribed and expanded into text documents.

Interviews

In addition to participant observation, I conducted semi-structured interviews with 37 youth participants and 9 adult staff members. My interviews with a subset of youth were intended to gather more in-depth data about youth's technological lives both in and out of the programs, and to place these experiences within more detailed portraits of their lives. Youth were selected largely based on their willingness to be interviewed and their ability to secure parental consent if under age 18. I offered youth \$10 giftcards to stores of their choice for each interview lasting approximately 45 minutes, which provided additional incentive. Actual interview times varied from 30 minutes to 1 hour and all interviews were audio-recorded and later transcribed. Most interviews took place in and

around the centers wherever a quiet and private space could be found, though one took place in a participant's home and another in a local restaurant. All interviews were one-on-one, except for one where the participant wanted his friend and one of the adult staff to come along.

I attempted to secure an equal number of female and male interviewees, though there were more female interviewees from TLP than from TFP due to the greater gender equality in TLP as a whole. I interviewed 21 youth males and 16 females between the ages of 12 and 23, with a median age of 16.³ There were a total of 18 interviewees from TFP (4 female; 14 male) and 19 interviewees from TLP (12 female; 7 male). In terms of race/ethnicity, 17 youth self-identified as African-American, 9 as Asian-American, 7 as Hispanic, 3 as White (non-Hispanic), and 2 as Multi-ethnic (African-American, Hispanic, and White). I attempted to do multiple interviews with youth who I initially interviewed early on in my fieldwork and who were interested and enthusiastic about doing additional interviews. I conducted 2nd interviews with 10 youth, resulting in 47 total youth interviews.

Interviews were conducted with 9 adult staff (4 from TFP, 5 from TLP) in order to gain their perspectives on the youth, the centers and programs, their own roles within the centers, and their own backgrounds. These interviews lasted between 1 and 3 hours. I did second interviews with 4 of the adults, resulting in 13 total adult interviews. Again,

³ The 23-year-old was an outlier at TFP in terms of typical ages of program participants. Excepting him, all interviewees were between the ages of 12 and 20.

interviews mostly took place in the centers or in nearby quiet spaces and all interviews were recorded and transcribed.

Surveys

After securing youth participants' consent, and prior to the first interview, I had them fill out a short survey to assess basic demographic information as well as some baseline information about technology ownership and use. There were 3 youth who consented to participate and filled out the surveys, but with whom I was unable to schedule interviews. However, I include their data when useful in terms of assessing statistics about the population of young participants within these programs, even if I was unable to add to this data through interviews. This results in a total of 40 surveys. This data was entered into SPSS for descriptive statistical analysis. In addition to the survey I administered, I was granted access to survey data collected periodically by TLP of all youth, including entrance and exit surveys about the program which collected demographic and personal information, as well as student evaluations and assessments of various aspects of the program.

I assessed youth's socio-economic status through a combination of parental education levels as reported by youth on the surveys, and additional information culled from interviews, such as parents' occupation and living situations. Some information about youth SES was also drawn from adult staff who were often familiar with youths' home situations. Youth were generally unaware of parental income levels, and often unaware of parents' levels of education, so SES needed to be assessed by combining many different

known factors for each teen. Though the community centers were generally geared toward addressing underserved and “at-risk” populations, which is generally understood to correlate to lower SES, some youth could be considered middle- to upper-middle class, especially at TLP. This was a somewhat unexpected realization in beginning my research in the field where I expected the great majority of participants would be low-income. Ultimately, this variation in youth’s SES provided a useful comparison point in analyzing youth experiences with technology in and out of the CTCs. In addition, even the higher SES youth experienced vulnerabilities around technology that connected to the largely non-white, urban communities from which they hailed, and which were addressed within the digital learning environment. Of the 40 youth who completed the survey, plus one college mentor at TLP who I interviewed as an “adult” at the program and who did not fill out the survey, the SES assessment of the youth is as follows: 9 were Low-Income, 21 were Working-Class, and 10 were Middle-Class.

Content Analysis

I also collected evidence of youth creations and projects within the centers to complement my observations and to allow for analysis of the actual objects, both physical and digital, that youth made via technological means. Whenever possible, I collected copies of digital music and videos for later analysis, and collected printouts of flyers, images, and other creations. I took photographs and recorded video during phases of project creation at each center, as well as major events where creations were exhibited, such as the project exposition at TLP and community events where youth did music and dance performances, and displayed videos for parents and community members, at TFP. If youth

posted their creations to their own sites, such as a blog or a Myspace page, I asked permission to visit and see their creations there. Each program also developed websites during the span of my fieldwork which I consulted for additional photos, videos, and other data. TLP developed a wiki which served as a clearinghouse of information for program participants but which was also created and edited by program participants, as a way to document the creation process, maintain schedules, and archive activity sheets and other teaching aids for each module. As such, the site served as another rich source of data regarding youth's experiences within the program.

Data Analysis

All fieldnotes and interviews were transcribed in stages during and after the fieldwork process. Fieldnotes were transcribed fully, as were most interviews. For some interviews with youth, once I had determined major themes through analysis of earlier interviews, I transcribed selectively (Strauss 1987:266-7). Professional transcribers completed some transcriptions of interviews. However, I found the transcription process useful to largely do myself in order to perform a first reflective pass over the data to get a sense of themes and potential codes. It was also difficult to find transcribers who could easily decipher the speech of many of my young interviewees, both in terms of "youth-speak" as well as urban and regional dialect. I carefully went over all returned transcripts for error correction and clarification, which sometimes proved nearly as time-intensive as first-pass transcription. Ultimately, doing transcription myself often proved to be the most efficient process.

Throughout the fieldwork and transcription process, I engaged in the process of

writing analytical memos to aid my reflection of this process and to begin the development of codes and major themes. Once transcription was completed, all interviews were coded line-by-line using HyperResearch. This process proceeded in iterative stages of coding, memoing, and data analysis to assess major themes, group codes, and to revisit the data with these focused groupings in mind. During focused coding, I grouped initial codes into larger analytical categories and themes (Charmaz 2006:57). I separated youth and adult interviews into separate “studies” because they represented different conceptual categories in my dissertation and each set of interviews would be the basis of different chapters within the study. My analysis of fieldnotes and other data from the field consisted of interpretive and analytical memos, and application of codes and themes from the interviews. Through these analytical processes, I was then able to review this material to recognize and develop patterns in the data. Using multiple sources of data for this study allowed me to triangulate these sources to build the justification for the analysis (Creswell 2003:196.)

Ethical Issues and Informed Consent

All efforts were made to reduce or eliminate risk within this study, especially with regard to the young people involved and the centers that allowed me to observe them. I received approval for this study from the Boston College Institutional Review Board prior to beginning my fieldwork. I explained the purpose of my study thoroughly to the gatekeepers at each site and obtained permission from both to observe and interact with the youth within each center. I counted on the centers themselves to announce my presence and purpose in general to the youth, and made myself available and open about answering questions about the study and the information I was collecting.

All interviewees, including youth and adults, signed informed consent/assent forms which indicated the general purpose of the study, the voluntary nature of participation, and their ability to withdraw at any time. Youth under 18 needed to secure parental consent via a form I sent home with them, to be returned to me, before interviews could commence.⁴ Parents were encouraged to get in touch with me with any questions or concerns about their child's participation in the study. No concerns were ever raised in this manner. When possible, I talked to parents in person when they showed up at the centers in order to explain the study and secure their child's participation.

Each research participant, including interviewees as well as those I observed but did not interview, was assigned a pseudonym in order to protect his/her privacy. At the beginning of each first interview with a youth, I explained this, as well as the fact that I would not be reporting anything they said back to anyone else in the program, so that they would feel able to share openly with me. In general, the topics discussed represented low-risk to the participants, though we sometimes talked about personal matters in relation to the themes of the study. For those who were employed at the sites, I was aware that they might be hesitant that I would repeat unflattering opinions about the center or people there that would negatively affect them. The candidness and critical opinions offered by many of the youth lead me to believe this was adequately conveyed. All audio files and transcriptions remained under my control, as do codes matching pseudonyms to participants. Non-disclosure agreements were signed with all outside transcription services used. One concern I had was that the staff from the center who were interested in

⁴ This element of participation proved to be the biggest stumbling block to securing youth participants, as they often lost the forms, forgot to get them signed, or otherwise delayed the start of interviews due to the need to secure parental consent in a situation where I had little direct contact with parents.

the results of the study would likely be able to identify certain youth through my descriptions and inclusion of certain necessary details. As the centers were interested in all findings and already familiar with many of the topics discussed with youth, it is highly unlikely details included here would lead to negative repercussions for youth. As much as possible, I also tried to separate specific quotes and details from other very specific identifying information about the youth so that they wouldn't be easily identified. However, this was much more likely in TLP where there were many more youth whose personal lives were probably less familiar to the staff.

I struggled with whether to give pseudonyms to my centers and programs, as I felt they were easily identifiable to anyone familiar with community technology centers in general, and community centers in Boston in particular, so pseudonyms might be a clunky and unnecessary interference. However, I ultimately decided to assign them so that my centers would represent anonymous cases wherein the youth are the focus of the study, rather than taking over the focus of the study as specific, rather than general, programs. I felt that this would best preserve the perspective I wished to maintain for this study. Outside of a specific set of communities, these programs are likely to remain anonymous, and this action will best protect the privacy of all my participants.

Chapter 4

The Experience of Technology and Digital Inequality in Everyday Life: A Youth-Centered Perspective

Introduction

In this study, I attempted to understand how urban, low-income, and minority youth interacted with community spaces of digital learning. In particular, I examined how their experiences within these spaces intersected with their identities as raced, classed, and gendered individuals, as young people subject to adult discourses and constraints, and as technological consumers/users in their own right. In order to understand the technological experiences of the youth within this study, as well as their interactions in the community technology learning environment, it is essential to understand how they interact with technology in other areas of their lives. Their technological habitus does not come about via the instructive environment they experience once they step into the learning space. Rather their understanding of technology, their identification with it, and their adaptation to it as part of their lives emerges from lifelong experiences with inequality and technological scarcity.

Yet digital inequality and technological scarcity only informs, rather than defines, their experiences; these young people are in constant engagement with technology. While the literature around young people and technology has expanded to acknowledge the diversity of meaning-making activities by young people, the voices of low-income and less-advantaged youth have not been as prevalent as their privileged counterparts. The experiences of marginalized youth with technology have often been captured by statistics marking their comparative lack of resources, rather exploring what they do with what

they have. These perspectives also generally portray the technological worlds of all youth within these marginalized categories as similarly passive and homogenous, while middle-class youth are portrayed as the young people engaging in diverse, individual, and creative relationships to technology. Marginalized youth are thus often placed in the narrative position of the technology “have-nots” even today, while their very active technological lives are denigrated or ignored.

In this chapter, and in this dissertation as a whole, I take these young people as meaning-making, agentic individuals, and explore the different ways they express themselves through different technological forms and spaces. At the same time, I situate their experiences within their raced and classed identities to understand how their marginalized positions shape their agency and their orientations to technology—relationships which digital learning initiatives hope to build upon. The young people in my study cannot be solely defined as technology users by their socioeconomic status. They varied in their home experiences of technology, their social experiences, and their personal interests. Yet there were common themes in terms of how inequality structured their uses of technology. I argue that these outside experiences connected to the ways they engaged in and utilized the technology learning environments available to them, and to what these environments provide to youth who are already highly engaged with technology.

A powerful structuring idea emerging from my conversation with these young people was the presence of paradoxes around technology, and the expression of ambivalence around their relationships with it. Though the notion of paradoxes of technology ownership and engagement has been a common element of technology critique, it has generally been seen as attached to a privileged, middle-class consumer lifestyle (Mick

and Fournier 1998). It has not been explored with regard to age, race, and class, yet teens' critiques and ambivalence around technology clearly emerged from my data.

Mick and Fournier (1998) elucidated a number of paradoxes which they claim characterize the technology consumer's experiences with regard to technology adoption. As a result of examining individuals' attitudes towards personal technology consumption through interviews, the authors identified eight paradoxes of technology consumption, including control/chaos, freedom/enslavement, and new/obsolete. Mick and Fournier claim that consumers' active involvement in coping with these paradoxes indicates their rebuke of "the idea of wholesale complicity with technology" (Mick and Fournier 1998:32).

Discussions of paradoxes of technology generally focus on the perspectives of adults. When young people enter into the discussion, they are often the subjects over whom adults express ambivalence regarding their engagement with technology. The assumption is often that youth are enthusiastic and uncritical users of technology—an assumption that often forms the basis for discussion of "risky" technology use by youth. Yet this perspective 1) is often based on research that focuses heavily on more privileged, middle-class youth and 2) elides investigation of the complex relationships youth themselves have with technology.

Though these paradoxes are generally discussed with regard to the "typical" middle-class adult consumer, hearing them expressed by young people from less-advantaged social positions led me to consider how race and class might inform their attitudes and experiences. These young people live within a culture with a paradoxical relationship to

technology, in which consumers are constantly grappling with the pressures and frustration of the increasing intrusion and expectation of technological immersion in daily life. My subjects were both drawn to it and wary of it, as are many “typical” technology consumers. These complex relationships occur within what Beck called a “risk society” in which we are increasingly interdependent in an increasingly urban and networked society, and thus increasingly exposed to uncontrollable risks which we yet seek to have control over (Beck 1992). This anxiety is arguably reflected in widespread social concerns over young people and technology—especially as there are complementary paradoxes in our culture’s orientation towards young people (Livingstone 2002). For young people who are already perceived as vulnerable (i.e. all youth), technology seems to add to these risks by threatening childhood and causing any number of social problems (Buckingham 2008). These fears, and perceptions of risk, become especially negatively targeted towards low-income youth, who are not seen as engaging with technology even at the level of middle-class youth. Yet much of this discourse happens *around* these youth, rather than involving them in conversations around technology in their lives and in the world. And, as I will argue, marginalized young people have much more complex relationships with technology than these discourses recognize.

Henry Giroux (2009) has argued that our orientation towards disenfranchised young people, as inherently “at-risk” and potentially deviant, as objects to be worked upon rather than active subjects, functions to render poor youth disposable and politically powerless. This study works to recognize the subjectivity of these youth within a technologically-dominated society which often places them within identities of deviance and scarcity—identities which do not capture the current experiences of many youth who

though marginalized, are active participants in this culture. This position will be shown to influence and interact with the programs I studied, which have been constructed from particular positions to empower youth.

As emphasized in the previous chapter, my work is in concert with the recent move in qualitative studies of technology and youth which see youth as actively constructing their social and cultural worlds, and which promote youth-centered frames of reference (Ito et al. 2010; Lange and Ito 2010). In examining how marginalized youth interact with technology, I seek to understand how they develop identities as part of their everyday engagements with technology. Here, identity is understood as a social process, rather than fixed (Jenkins 2004). It is accomplished practically through ongoing interactions and negotiations with other people, and is a fluid, contingent matter. This chapter shows how young people's technological identities develop in peer-based social and cultural ecologies that must be understood to inform digital media education efforts.

Their technological habitus is influenced by many factors, from home, to peers, to the CTC. These spheres of influence surround their experiences within the CTC, as well as provide clues as to the path which led these particular youth into these learning environments. By highlighting these intersecting spheres, I show how technology is embedded in young people's lives in ways that can reproduce inequality and vulnerabilities. I will also show, largely through young people's own words and experiences, what the community technology learning environment offers them in terms of new meaning making experiences around technology.

If meaning-making is our focus, efforts to alleviate technological inequality and its related effects cannot be abstracted from the youth who are involved in these programs. For vulnerable youth, environments such as community technology centers offer valuable spaces to build on existing relationships to technology. For the most vulnerable and “at-risk” youth, these centers provide a space of stability around technology that they do not have access to elsewhere in their lives. For others, the CTCs provide opportunities to think about technology in new ways or to expand upon a personal interest that connects to technology. In this chapter, I draw on my interviews with 40 young people, as well as extensive field notes, to better understand how various facets of young people’s identities affect and intersect with their relationships to technology. I listened to these young people as they discussed their relationships to technology and media, both inside the programs through which I met them, and also in their everyday lives, including the space of the home and within peer groups. By drawing on their subjective perspectives of their lives, I hope to complicate the picture of these youth as individuals within a technoculture that draws them in and simultaneously presents roadblocks to the promises of that culture. I follow my youth through several significant spheres, including home environments, social environments, and the CTC environment to better understand how they make meaning of technology in their lives and in the world.

First, I examine their experiences of technology as connected to their home lives. This includes taking living situations and family structure into account, as well as the place of technology within the home. How do parents shape youth’s experiences and interact with them around technology? How do limited economic resources influence youth’s primary technological environments?

Then, I examine themes around the social space of technology for my young interviewees. How do young people experience and utilize technology in their everyday lives? What are their interests? What conflicts and tensions exist around technology? What is the role of peers in the use of technology? How do young people express their identities through various technologies outside of the learning environment?

Finally, I move into the space of the community technology centers. What do youth say they are getting from participation in their given program? In this section, I will also connect the threads from the previous sections to argue that these other spheres of technological experience matter in terms of experiences within the technology program. A close examination of the experiences of young people who come into these programs makes it clear there are many variables at play. However, by identifying patterns, it becomes clear how the CTC environment acts to fill in the technological gaps for each youth –whether it be basic skills, personal interests, or by providing a stable, resource-filled environment. There are also clear trends in terms of what CTCs provide that benefit diverse youth, such as providing a social space and providing access to new or less-widespread technologies. Though youth differed in terms of their interests, backgrounds, and reasons for participation, I identify common threads that provide increased understanding of the power of technology in the lives of low-income and marginalized youth. By drawing lines across these multiple spheres and influences, the data provides a necessary complication of our understanding of the role of technology in the lives of this population.

Who are these youth as technological individuals? What kind of technological capital do they have and where does it come from? What roles do family, peers, personal

interests, and skill play in its development? How do inequalities manifest themselves through technology? Ultimately, what are these youth bringing into the CTC environment that influences what they do there, and how they react to it? In some ways, poor and working-class youth very much resemble their more-advantaged peers with whom they share much by way of youth culture. Yet, inequalities connect across spheres of social experience in ways that require attention, in order to address their detrimental effects and to build up their benefits. The way in which inequality informs technological experience is also particular to the experience of the diverse, urban youth I studied. Their experiences often highlight contradictions and limitations of technological culture, but they also illuminate new avenues of understanding and spaces of resistance through their experiences. This chapter pays attention to both in order to illuminate the complexities.

The Intersection of Race, Class, and Technology in the Lives of Young People

Understanding the role of race and class in young people's everyday experiences of technology is not as straight-forward as it first appears, especially as growing access across the socioeconomic spectrum makes digital inequality more than a binary category. It seems to be true that social background is a strong predictor of variables which account for access to technology, such as the presence of a computer and broadband internet in the home, or comfort with and use of the Internet (Holmes 2011; Mesch and Talmud 2011). Having broadband internet access correlates to more creative activity online, and expanded opportunities for exploration and self-directed learning (Watkins 2009; Tripp 2011b). Social class also undoubtedly has broad ramifications for the formal and informal support networks necessary provide technological capital to youth—whether it be in the

form of parents and other family members with advanced tech skills or resource-rich schools (Watkins 2009; Cotton et al. 2011).

But there are also suggestions that research on young people and technology is overly focused on middle-class and affluent youth, limiting our understanding of the many uses of technology engaged in by less-affluent young people (Buckingham 2008). While patterns and disparities of ownership and use across categories of race and class are undoubtedly significant, this sort of accounting is a legacy of the digital divide rhetoric that contributes to ignorance about active technological lives that poor and working-class youth, and non-white youth, maintain (Buckingham 2008; Watkins 2009).

In today's technological landscape, race and class present paradoxes around how young people use technology. While much research has focused on the lower rates of ownership and use by Black and Latino youth, Watkins (2012) suggests that higher rates of adoption of mobile phones by Black and Latino teens suggests that *they* are the early adopters and could be regarded as the technology trend-setters in the U.S., a phenomenon he calls the "mobile paradox." Watkins also cites data which suggests that urban teens, as well as less affluent teens, are *more* likely than their more affluent counterparts to share creations, such as photos and videos, online (p. 2). Yet he still acknowledges the lower rates of broadband in the home for these same youth, which may be more indicative of the substantial disadvantages in their lives, and their diminished life-chances (p. 7). The high levels of mobile technology use among Black and Hispanic youth could, like high levels of media use such as television, be constructed as a risk for these youth, rather than a platform for advancement (Morimoto and Friedland 2010; Rideout, Foehr, and Roberts 2010). Statistics regarding ownership and use don't tell us enough about the tensions

these young people engage in between individual choices and structural forces in their technological lives, or how they perceive and navigate the risks and opportunities presented to them in their digital lives.

It is also essential to interrogate the technological lives of marginalized youth to decenter adult-driven narratives of risk. Some researchers have begun to focus on perceptions of risk and ambivalence by youth themselves, suggesting that they also take steps to mitigate risk in their digital lives as they take on narratives of individualism themselves—though their perceptions of risk may differ from adults (Morimoto and Friedland 2010; Clark 2013). Of particular interest in my study is how these perceptions of risk and opportunity, ambivalence and critique, intersect with and are shaped by experiences of race and class. Ellen Seiter (2008) has noted how race and class can fuel a young person’s critique of technology in a way that leads them to reject technological skills and careers:

“Urban working-class children and children of color may reject computers for the values they represent (such as dehumanization) and denigrate digital media for its emphasis on written rather than oral culture, their association with white male culture (hackers and hobbyists), and their solitary, antisocial nature” (P. 41).

My study, in focusing on urban, low-income, youth of color who are involved in technology programs, provides a window into the lives of youth who embody many contradictions and complexities around technological engagement. While they do not reject it in the fashion suggested by Seiter, it is clear that their social backgrounds, their individual agency, and their participation in CTCs lead to relationships to technology – both enthusiastic and active, ambivalent and critical – that have not been well-understood to this point.

The Numbers: Technology Ownership and Access in Everyday Life

It is useful to have a picture of my participants in terms of their basic technology access and use in comparison to other young people. I collected some basic data via a survey administered to my participants before beginning interviews, and supplemented this data during the interviews to clarify any missing or unclear answers. Though my participants may have been atypical from the average youth because of their involvement in technology-based programs, they followed basic patterns found by other measures of teens.¹

In comparison to American teens in general, my participants were fairly typical or, in some cases, more connected.² All of my participants reported using the internet, compared to 93% of all teens aged 12-17 (Jones and Fox 2009). Ninety-two percent of participants reported having home internet access, compared to 86% of all families (Lenhart et al. 2010). My participants were also more likely to have a cell phone (84% versus 75%), and to own a computer (90% versus 69%) and a game console (84% versus 80%) than the national average (Lenhart et al. 2010). Though these differences may be connected to a general affinity for technology that related to their involvement in technology-based programs, it is also likely related to their urban location, which can make it easier to acquire access and ownership (as compared to rural locations). Youth who lived in housing complexes, such as the one in which The Free Program was located, were often provided with free internet access.

¹ It should be noted that this data only represents the 40 youth who were interviewed as part of this study and not ALL youth attending the centers or programs.

² Though more recent demographic data is available, I am comparing my youth to data from a time period comparable to when I conducted my interviews.

While data shows that white youth consistently have more ownership and access to technology than Black and Hispanic youth, it was not possible to do similar comparisons among my participants due to the small number of white youth in the study. In addition, the few white youth I did interview were fairly low on the socio-economic spectrum and did not have the privilege of access and ownership usually attached to their race. However, I did look at comparisons across race/ethnicities well-represented by my participants. I also had a large number of Asian-American participants, who are not usually counted in the statistical research on young people and digital inequality. While a side-by-side comparison of race and technology access and ownership between my participants and the national average is not necessarily useful because of the generally higher rates among my participants, it is useful to note racial patterns which persist across the data.

The Asian-American youth in my study were the most likely to own a computer or a cell phone, and Hispanic youth were most likely to indicate that they did not own a computer, and were least likely to own a cell phone. The notion of Hispanic youth as the least-connected group is in line with Pew Internet & American Life data, and this finding was echoed among my participants as well. African-American youth in my study were less likely to own a video-game system (80%) or handheld game system (60%) than Asian-American youth (90% and 80% respectively) or Hispanic youth (100%/86%).

As some have noted, there were also indications in my study that Black and Hispanic youth may be more active media and technology users in some ways. Hispanic (86%) and Black youth (73%) in my study were more likely to own an mp3 player than

the Asian-American youth (70%). Differing from national trend data, Hispanic participants were much more likely to report having mobile internet access (71%) than Black (36%), Asian (22.2%), or White (33%) participants (Lenhart et al. 2010).

I was able to do some cross-class comparisons among my participants. While the majority of participants were working-class or low-income (75%), some of my participants could be considered middle-class (25%), based on parent's education and occupation, as well as other information learned in interview about the participant's living situation. Unsurprisingly, higher SES participants were more likely to own a computer (100%) than lower SES participants (86%), and were especially more likely to own a laptop computer (70% versus 39%). For lower-income youth, a home desktop was also likely to be shared with other family members. Higher SES participants were also more likely to access the internet from home (100% versus 89%), own an mp3 player (90% versus 64%), and own a handheld game system (80% versus 57%). SES did not correlate to mobile internet access, however, with 40% of both groups having access.

But again, the suggestion that lack of privilege may in some ways correlate to higher media use appeared among my participants in that lower SES participants were slightly more likely (86%) than higher SES participants (80%) to own a home video game system. These findings were even more pronounced in some cases when class was examined only in terms of parent's educational attainment. The lower a father's educational level (high school or less), the more likely a participant was to own a cell phone (94% versus 91% for fathers who had completed some college or more.) Participants who had mothers with low education were more likely to own an mp3 player (93% versus

72%). Low educational levels for both fathers and mothers correlated with higher ownership of home video game systems.³ Participants were also more likely to own handheld game systems if their mothers had low levels of education (71% versus 43%). Finally, lower levels of parental education also correlated to higher levels of mobile internet use among my participants. Sixty-two percent of participants whose mothers had a high school education or less reported having mobile internet access versus 29% for participants whose mothers had higher levels of education.⁴

Technology in the Home

The home is, for many youth, the first environment in which technology is encountered and where first relationships with technology are established. Technology has assumed an important role in the family, and in relationships between parents and children. Research on technology in the home has shown that parents view technology in the home as important for children's future success, yet they also worry about the effect of media and technology usage, and often seek to set boundaries and rules within the home regarding use (Horst 2010:150). Young people, at the same time, seek autonomy and independence from parents' rules and often work to negotiate or find paths around them (Horst 2010:163). For less affluent or marginalized families, parents' comparative lack of experience with technology, and differing perspectives on technology and its benefits, can lead to different experiences and configurations of technology within the home (Horst 2010; Tripp 2011b). Children may play the technology expert and translator for

³ Home video game system ownership for participants whose mothers had high school education or less: 93%. If mothers had completed some college or more, this dropped to 71%. For fathers with high school or less: 94% versus 67% if fathers completed some college or more.

⁴ 60% versus 16% if fathers had high school education or less.

parents who don't speak English. Transnational families may depend heavily on technology to stay in touch with relatives (Horst et al. 2010). For working parents, or for families whose children are bussed to distant schools, the cell phone becomes an essential safety accessory (Chin 2001; Lareau 2003; Horst 2010).

Clark (2013) conceptualized the different orientations towards technology she observed in less-affluent and middle-class families, finding that “families from varied economic backgrounds experience and respond differently to the risks related to the introduction of digital and mobile media into their family’s lives” (p. 15). She finds that middle-class families see young people’s technology use within an “ethic of expressive empowerment,” which, similar to Annette Lareau’s (2003) concept of “concerted cultivation,” prizes self-confidence, expressiveness, self-control, intellectual curiosity, and ambition in children. On the other hand, Clark finds that less affluent families operate within an “ethic of respectful connectedness,” in which children are expected to put families and communities first, as well as to be loyal, patriotic, and to exhibit leadership and resilience against adversity (p. 16). With these typologies, Clark illustrates how technology in the home, and within family relationships, is shaped by existing frameworks of risk and “good” parenting in neoliberal societies, which are fundamentally influenced by factors such as socioeconomic status—and that these influences carry over into family relationships to technology and media.

Often, studies of the home and technology focus on parents and their perspectives about their child’s technology access. Less is known about young people’s perceptions of technology within the home, especially within minority and less-affluent homes. Though the youth in my study faced some limitations that affected the quality of technology in

the home, virtually every participant had some kind of access to a computer and broadband internet at home. Despite economic struggles, many families find a way to bring a computer into the home.

The Importance of Children's Technology Access in the Home

For families with limited means, acquisition of a home computer often occurred informally, which meant that home computers were not new, or they were pieced together from various available parts. Some parents had jobs which allowed them to bring home computers. Nia's⁵ parents were both teachers who acquired computers to bring home as part of their jobs; Hai's⁶ father worked in a computer store. Ricardo (18, Working-Class, Hispanic) recounted a story about his grandfather bringing home a laptop:

Ricardo: Well, the desktop computer, that's the family computer. The laptop, yeah that's mine. My grandfather found it.

Interviewer: He found it?

Ricardo: He found it. Well, he works at this fancy place so.

Interviewer: Like what kind of a fancy place?

Ricardo: I don't know, it's a weird place that my grandpa told me that they have all sorts of stuff. Like, they throw away old TVs, like, VCRs, I dunno. He works for a cleaning company...I mean, they pretty much handed him the laptop 'cuz the lady was having a new one anyway.

Here, his grandfather's position as a low-paid worker within a wealthy company that replaces its technology allowed him to have access to its cast-offs which were still in working condition, but which were not valued by the company. While Seiter (2008) cites the planned obsolescence of technology as a factor which makes it difficult for low-income

⁵ Age 14, Middle-Class, African-American

⁶ Age 20, Working-Class, Chinese-American

families to keep up with technology, I found that some families also managed to use this phenomenon to their advantage. The rapid cycle of consumer technology replacement became something which benefitted those who could make use of such “discards.” For low-income families, taking advantage of this turnover of technology, especially within corporate settings, offered families informal and adaptive ways of bringing technology into the home and into the hands of their children.

While many homes had multiple computers, and many youth had a computer they identified as their own personal computer, quite a few homes maintained one shared computer, often located in a central place in the home such as the living room. While this was sometimes a result of limited family resources, some youth also saw it as an effort by parents to supervise and limit their computer and internet use. Even if having a computer in the home was seen as essential for academic success, parents were concerned about how this technology would be used by their children and whether it would serve as a dangerous distraction rather than a route to mobility. The notion that computers in the home should mainly be used for school-related activities, and not for “fun,” is common among minority and low-income parents (Ito 2010; Tripp 2011b). In this framework, disadvantaged parents reflect popular discourses around computers as a pathway to educational and economic advancement, and seek to control children’s activities in a way that encourages them along this path. Similarly, their anxieties and fears about their children’s use of technology and the internet can function to limit teens’ use and their access to “potentially rewarding opportunities for personal development, social participation, and informal learning” (Tripp 2011b:563).

Asad (16, Middle-Class, African-American) expressed some good-natured frustration about the central location of the home computer:

Interviewer: Do you wish you had your own computer?

Asad: I do! Because my mom always watches me what I do and it's not that I have anything to hide, but it's also just kind of awkward to have your mother looking over your shoulders, asking "What's that? What are you doing? Who are you talking to?" Yeah, it gets kind of annoying.

Interviewer: She does that?

Asad: She does. It kind of limits my privacy...She thinks I talk to strangers. [inaudible] things like that. She also thinks I am going to bring viruses because I go on websites she doesn't know.

Here we also see parents' concern that youth's risky internet use will ultimately damage the home computer, a major investment. Asad then claimed that the worry was unfounded because he is a savvy internet user and he knows their computer has decent virus protection. For low-income parents, however, whose resources of time and money are often stretched thin, and who also may not feel entirely comfortable with technology themselves, trying to control the sphere and boundaries of their children's technological use was a tactic to ensure that their values and ideals around technology get transferred to their child. It is entirely likely that Asad was more knowledgeable about the technology than his parent, but some level of surveillance from his parent may have satisfied his mother's conception of "good parenting" around the home computer.

Parents also commonly were the ones to provide many of the youth in the study with their cell phones. Many of the youth indicated that parents or guardians bought them their first cell phones, and that they were on a family cell phone plan. Parental desires for

their teens to have cell phones also stemmed from a functional orientation to the technology intersecting with particular fears and concerns around raising young people in an urban environment while also being low-income and minority. An inherent level of risk in this environment led parents to want to be able to be in contact with their children at any time, to be informed about their whereabouts, and also to potentially call them home when needed. Youth's socioeconomic position also sometimes had the effect of taking children farther away from home than more privileged youth. Pearl (18, Working-Class, Asian-American) acquired her first cell phone from her parents in fifth grade when she was traveling daily to a school in the suburbs as part of a bussing program. Though she was perhaps acquiring a better education than she would have by remaining in the city, she was also traveling quite a distance independently on a daily basis, which concerned her parents. In these cases, providing a cell phone to a child was deemed a necessary expense, even if resources were limited, as it provided some peace-of-mind to parents of potentially "at-risk" youth.

Tensions Between Parents and Children around Technology

Cell phones were also a common area where parent and child definitions and interpretations of proper technology use conflicted, as when youth ran up cell phone bills by going over texting and talk limits while communicating with friends. Parents often seemed to take a functional approach to providing their children with technology, which often conflicted with young people's own meaning-making and uses of the technology. Parental intentions for technology use tended to center around their own goals and fears regarding their children, which connected to the vulnerability they perceived for their children within their socioeconomic status. Parents wanted children to use technology in

ways that adhered to typical pathways to success, such as for schoolwork, and were often not supportive of uses that they perceived to be frivolous. The differing intentions and meanings of technology in the home and in the family often led to tension between parents and children—not just regarding technology use, but about the larger purpose of technology and what its role should be in one’s life.

Youth often regarded themselves as much more tech-savvy than their parents and guardians which sometimes set up this relationship as, if not adversarial, then at least patronizing from child to parent. Youth often acknowledged that their parents had basic working knowledge of computers and other common personal technologies, yet many claimed to have to instruct their parents in some technological task on a regular basis, from sending an email, to sending a text message or performing an internet search. The reversal of this instructional relationship around technology had the effect of thus setting up the child as the expert, and thus perhaps weakening the stance of the parent in terms of setting boundaries around technology use and expectations.

Overall, however, youth seemed to respect, or at least attend to, parental rules and admonitions around technology use. In talking about the video game systems owned by himself and his brothers, for example, Michael (12, Working-Class, Hispanic) says he lets his brothers use “his” Wii, because his mother “always says, whatever comes into the house, everyone uses.”⁷ This did not mean that there weren’t tensions between adults

⁷ His brother Andre (15), who was also a study participant, told a very different story, however, indicating his strenuous efforts to keep his brothers from using “his” devices by buying a lock for his bedroom door. He also said that he gave his mother money to pay her back for the game system she bought him, so she wouldn’t have leverage to take the console away from him as a punishment, which was apparently a common disciplinary tactic of hers. By paying for the device himself, he assumed a level of control over the ownership of the technology meant to further remove parental controls and definitions of technology from infringing upon his own.

and children around technology, or that adult normative discourses did not strongly influence young people. Often, in the home environment, young people balanced their own technology use with parents' expectations.

In the effort to carve out their own technological space, youth acquisition of personal technology was essential for using it for desired purposes. Within low income households, youth often had to purposefully set out to acquire their desired technology, which often went beyond the shared household computer. In some households in which there was no computer, such as in Michael's, young people used game systems with Internet access as defacto computers. With such capabilities, not only does gaming often happen out of the parental eye, but so does internet use. The use of a video game console as a replacement for a computer also reflects the disparity of resources sometimes available to these youth in the home. A Playstation 3, which plays the latest games and connects to the internet, may do everything a young people wants in terms of desires around technology use, but such systems lack the openness and potential space for creativity available in a more general operating system. Many of the youth interviewed reported having multiple games systems in the home, many of which were given to them as gifts by parents and relatives, either for special occasions or rewards. Thus in some low-income households, parents may defer to children's desires in terms of bringing technology into the home, perhaps because they do not have the resources to insist otherwise. A household which has multiple game consoles but an inadequate, or no, personal computer results in a particular technological environment largely shaped by the parameters of (corporate-based) game consoles and content.

In some cases, parental concern about the role of technology in their children's lives extended beyond their personal use to efforts to direct a child's ambitions away from technology. For these parents, a child's leisure interest in technology was acceptable, but parents felt it necessary to direct or demand that their child follow a specific career path that they felt would be stable and lucrative. Generally, technology career paths that might have related to the tech interests nurtured at the CTCs, such as computer programming, were not encouraged by some parents. Both of the cases I observed of this were within Asian families, in which parents cultivated specific visions of future success for their kids, coupled with hard work and expected obedience. That these parents did not perceive tech-based jobs as the best path to success and upward mobility was especially interesting, since it conflicted with the dominant discourse that technology skills are associated with upward mobility. But in some ways, this perception, especially for youth of less-affluent families, may have been more realistic, in terms of the types of computer-based jobs that disadvantaged youth are most likely to be able to get, which are not the creative-class or more autonomous jobs most often talked about within STEM careers. These parents see IT labor from a working-class/vocational perspective, where it is alienating, stressful, repetitive, and not necessarily highly paid (Seiter 2008:41).

The teen most affected by this type of parental pronouncement was Kim (16, Working-Class, Asian-American), who harbored dreams of being involved in video game design, but who was resigned to becoming a pharmacist at her parents' insistence. According to Kim, her parents had watched her older siblings follow computer-based career paths with mixed results that led her parents to point her down a different path:

Kim: I really wanted to be a video game developer. I was into video games since I was really little and I keep playing it till now and if I wasn't gonna be a video game developer I thought I was gonna ...become a music producer for video games... So I want to do something video-game-related, but according to my parents, they said I have to become a pharmacist (smiles) for the sake of the family or something, and for the sake of my life. They thought that if I was gonna be a video game developer I was gonna have like, a bad life in the future like always looking for a job or something like that. Well it was because of my brother and my sister. My brother, he's a computer tech. He fixes stuff...software and hardware. So he's constantly looking for a job and now he works for this company and I have no idea what he does. My sister, she works at a government building... she handles like data for transportation, crashes, accidents, stuff like that, and all she does is sit there and just type away.

Though Kim was very skilled with technology and had a passion for it, she yielded to her parents' wishes, a deference which could be understood within the "ethic of respectful connectedness." She was expected to safeguard herself and minimize risk to her future, and to place her own individual achievement and ambition within her family's wider framework and understanding of the relationship of technology to work and leisure—attitudes which correlate to socio-economic status (Clark 2013:23). Parents with this attitude were very attuned to the forecasting of lucrative and stable career paths, such as pharmacy, which they saw as much more certain pathways to upward mobility. Hai, another youth who characterized technology as a major interest and who had considered becoming a computer technician, was also in college studying pharmacy—with less duress than Kim, perhaps, but also as a result of his family's influence. The parents who directed their children in this way seemed to feel that a technology career was not inherently promising, drawing on their own experiences and observations, but also paying attention to popular career trends which seemed to offer their children the best chance of upward social mobility and career stability.

For some of the most vulnerable youth in my study, the acquisition and use of technology occurred in the face of obstacles that came directly from parents and guardians. In these instances, technology products operated as objects of control and value within adversarial and distrustful, or distant, family relationships. Instead of parents endeavoring to provide as rich and supportive technological environment as possible for youth, they limited or removed technology in punitive ways. Tatiana (19, Working-Class, African-American), who was struggling to pay for her college education, recounted that her father sold her laptop after an argument. Terrance (18, Low-Income, African-American), who had bounced around several living situations in his young life, was now living with an aunt who seldom allowed him to use her personal computer for fear of him damaging it in some way—a marked lack of trust. In these situations, the home environment became even less conducive to basic technological use, not just because of a lack of resources, but because of instability in the home environment and difficulties in the guardian/child relationship.

For the youth in my study, technological instability in the home, characterized both in terms of ownership of computers and access to high-speed internet, and what youth were able to do with them, was a common occurrence connected to socioeconomic instability, though many parents made efforts to provide their children with basic computer, internet, and cell phone access because it was seen as an important investment in one's child. Parents and youth alike demonstrated adaptability and practices of “making-do” when it came to translating limited economic resources into technology access (de Certeau 1984). However, differing expectations and meanings around the purpose and

role of technology led to tensions between parents and children in terms of how technology should be used and how it should be incorporated into young people's lives. Technology in the home also sometimes served as a linchpin for battles for control in the home, whether it was about chores or future careers. Because of the potential for parents and guardians to determine the scope of tech use within the home, especially when they had paid for or otherwise acquired the technology, teens made efforts to carve out additional spheres and loci of control for technology use that removed or lessened these restrictions. In this way, they could be seen as embracing the "ethic of respectful connect- edness" described by Clark (2013), while pursuing individual interests.

For youth with very few resources at home, it was even more essential to secure access to technology in other ways. The CTCs became to them spaces in which expanded ideas about technology were introduced and encouraged, which teens sometimes brought back into the home, as I will later show. In the next section, I will address the ways in which youth created these additional spheres of meaning around technology in their everyday use of technology.

Technology in Everyday Life

For the youth in this study, as for many young people, technology represented more than simple technological capability; technology provided them with a way to establish spaces of identity formation, to communicate and connect with friends, and to explore and expand their personal interests and hobbies. The young people I interviewed and observed integrated technology into their daily lives in order to accomplish things that were important to them and to establish a locus of control and independence. Yet for

many of the youth in my study, even as they asserted their personal technological habitus, these desires and uses around personal technology intersected with their subjective social positions in ways that complicated and limited their tech use. Many experienced difficulties in maintaining a stable and constant technological environment which affected not only their ability to be agentic with technology, but also affected their attitudes towards the role of technology in their life and in the world.

In this section, I will outline the ways in which the young people I studied utilized technology in their day-to-day lives and the ways in which it mattered to them as low-income, diverse, and often vulnerable youth. Then, I show how these uses and experiences were often interrupted, as well as the ways in which youth exhibited adaptability and resilience in the face of these vulnerabilities. Finally, I show how their unique position as young and resilient tech users shaped some unique perceptions and attitudes around technology, which contradicts other recent findings about young people and their technological immersion and dependence. I posit that, as a result of the inconstancy of their technological environments, many of the youth in my study cultivated detached, ambivalent, and even critical attitudes around technology, even as they were avid users. They also developed some interesting shared perspectives on the role of technology in their lives. These perspectives connected to their particular positions as urban, low-income youth whose relationships to technology were shaped by their positionality in ways not applicable to more privileged youth.

Everyday Use and Interests

The youth I studied represented a wide spectrum of technology uses and interests as they came into the CTC environment. Their level of engagement tied to their personal interests and peer groups, as well as their socio-economic status. Youth with more stable resources were more likely to have sustained hobbies and creative projects utilizing technology in their everyday lives, largely unrelated to their participation in a digital learning environment. Youth with less stable and predictable access to technology were less likely to be pursuing such projects outside of the CTC, yet still utilized technology on a daily basis as best they could. Socio-economic status was not the only predictor of deeply creative and productive personal uses of technology however. The motivations of the most creative and productive youth often connected to personal interests, peer and family influence, and pop culture. In Chapter 6, I show how these interests connect to youth projects within the CTC, but here I want to highlight the presence of these technological relationships in the lives of youth who did not necessarily connect their interests to the programs they were in. These young people showed a diversity of personal interests expressed through and with the aid of personal technology products and access. They used technology to the best of their ability in the ways that were available to them.

A number of youth pursued artistic interests. Those who pursued these interests independently tended to be the higher-income girls in my study. Melanie (16, Middle-Class, African-American), an aspiring vocalist and musician had been scoring and producing music on her own using free music production software programs. She was starting to publish her music on Myspace and hoping to start getting a following. She was deeply influenced and very supported by her mother who had long been involved in

church choirs. Other girls, like Imani (15, Working-Class, African-American) and Jocelyn (15, Middle-Class, African-American), enjoyed writing poetry and had at times maintained blogs to feature their poems and other thoughts. A stable personal and technological home environment seemed to be necessary for youth to have the comfort level to incorporate technology into hobbies that weren't necessarily tech dependent. These girls also possessed the cultural capital that led them to develop interests like poetry and music. Melanie, whose mother had worked her way through medical school during Melanie's childhood, had taken several years of violin and percussion lessons and played in the school orchestra. The technological resources available to her were a set of tools which enabled her to expand and develop these interests.

Other creative endeavors were sparked by pop culture interests. Kim, who we met earlier, whose technological obsessions were developed despite her parents' efforts at redirection, was an avid anime fan, as were several others of the youth. During one interview, she described her most recent project. She had joined a "fan dub" community online, in which volunteer voice actors performed English dubbing of Japanese anime. She had auditioned by sending in a digital recording to the group's director, and been accepted into a group. She was excited to explore her interest in acting. The entire project was managed online using voice actors in many locations who submitted their work digitally. Kim utilized her pre-existing tech skills and resources to record herself for a small part she had been given. Kim's competence and avid interests came together to enable her to participate more deeply in a fan culture with which she felt an affinity, as well as allowing her to develop additional skills like acting and vocal performance.

Yet there were also class and cultural dimensions to her pursuit of this sort of activity and its position as a hobby in her life. This sort of activity within fan subcultures has expanded due to the internet's facilitation of such work, and has gained attention for its cultivation (and exploitation) of individuals' free labor outside of markets (Terranova 2000). Yet this type of activity among young people has also been variously interpreted through the lenses of productivity and creativity. For privileged youth, this type of independent and active involvement in creative internet communities is seen as very much in line with the ethic of expressive empowerment – a desirable type of labor which is seen as building technological capital, and the type of “geeking out” that leads to connected learning. It is also the type of labor that middle-class youth are able to engage in more of at home than working-class and poor children, who don't have the same home resources, including time, money, and parental support (Ito 2010). Kim represented a working-class youth who engaged in this type of work at home, yet without the explicit parental support that came from viewing this type of activity as positively correlating to future success. For Kim, though this activity was personally edifying, it remained firmly within the category of tolerated hobby in the home because of her parents' perspective of such activity as disconnected to her future career prospects – a perspective which was very different from the middle/upper-middle class viewpoint. Given these circumstances, Kim's free labor as a working-class teen was much more likely to remain just that – a hobby and a contribution to a non-market digital economy rather than an activity that would facilitate her transition into the market sector of the creative class.

Vulnerability and Technology

The young people in this study did the best they could to pursue their interests through and with technology. However, their social environments affected and influenced the stability of their relationships to technology. Competent and productive use of technology that allowed young people to pursue their interests, like that described in the last section, grows when young people have steady technology access and support in all areas of their lives. Youth attempted to cultivate their technological worlds in order to access the perceived benefits of technology, whether it related to personal interests, communication with friends, or schoolwork. Yet the inequalities that influenced their everyday lives also ended up affecting their technological lives.

Neighborhoods

Experiences of technology were often mediated and limited by teen's physical social location. Living in low-income neighborhoods or complexes provided threats to teen's technological ownership that prevented them from utilizing it to its fullest extent. Kadejah (17, Working-Class, African-American) talked about how, despite the fact that she owned several mobile devices including a cell phone and an mp3 player, she either left them at home or carefully concealed them in public.

Kadejah: Yeah, most of them stay inside 'cuz like, the area I live in, it's hard to have new technology out without getting it stolen, lost, or broken. So I try my hardest to stay in my house with my technology. Like, my cell phone, I usually stay in the house with it and if I have it outside, it's usually in my bookbag or I have it on my waist on my clip. But other than that, it stays in the house.

Interviewer: So if you're outside, do you try not to be just walking around talking on your cell phone?

Kadejah: Yeah I usually wait until I get to my destination to get on my cell phone. Like I don't walk around or get on the bus or the train with my phone out.

Interviewer: Do you have an iPod or an mp3 player?

Kadejah: Mmhmm, I have an iPod.

Interviewer: Do you listen to that when you walk around too?

Kadejah Yeah but I usually have it inside my pocket so nobody can see what it is. They just usually see the headphones in my ear so they can't really tell what it is.

It might seem counter-productive to most people to have a cellphone that doesn't leave the house. Indeed, the promise of mobile technology, espoused by numerous advertisements for cellphones and smartphones, is the freedom conferred by these devices which enable the consumer to communicate and be productive within a larger public arena, as well as to perhaps maintain ties with a homebase when out engaging with a larger world. But for young people in an environment that engendered the potential of threat to them by way of their technology ownership, this promise was sometimes unfulfilled. Their tech devices, which they regarded as items of value, often acquired with their own money, needed to be preserved and protected, rather than utilized, in some situations. Ironically, these were the very situations/environments for which these products were designed. Within their particular social locations, more vulnerable youth felt forced to limit their use to private spaces they identified as "safer" than the public, such as home, school, or among friends.

The majority of young people I studied did not go to the lengths Kadejah did to protect their technology; the potential gratifications of technology won out over an abundance of caution and the perception of risk. This had consequences for some youth which

further illustrated how personal technology ownership did not counteract, but rather amplified the vulnerability of youth who desired to be autonomous and fully-realized technologically-mediated individuals. There were several instances where subjects reported being involved in altercations with other young people that resulted in the theft of their technology. Such occurrences not only served to chasten these young people for publicly participating in techno-culture, but also had the prosaic effect of depriving them of the devices that allowed them to do this.

One particularly poignant example was when Claire (17, Low-Income, White) experienced the theft of her new iPod Nano at the hands of some acquaintances. Claire was a sensitive, good-natured girl at The Free Program who keenly felt the pain of her mother's abandonment years before. She described a stressful home situation where she felt pressure from her father's current girlfriend to move out in order to alleviate financial burdens. The iPod had been a gift from her father, who was raising her alone, and the loss hit Claire hard on several levels, from the feelings of victimization stemming from the initial incident, to the further marginalization she felt when she reported the theft to police, to feelings of guilt and censure from her father for having put herself in the position of losing the new, expensive (especially in the context of the family's finances) device. For her, the mp3 player was a device that enabled her to listen to music, yet her public use of it among peers had positioned her as a victim in ways that connected and added to the inequality, both social and digital, which was already present in her life.

Following the incident, she went to file a report with the police, and, from her account, they appeared to have taken her seriously and dealt with her complaint thoroughly.

But it was also clear that she felt discomfort and powerlessness when being “interrogated” for details about the theft that she could not provide, such as where the perpetrators lived. It was also clear to her from the police that she would be unlikely to get the iPod back, even though the thieves were local kids. She had even seen her iPod in the female thief’s possession since the incident. Claire mused on her motivations:

Claire: I just want her to know that she can't get away with it again. I just want her to... She probably did it to a bunch of people. She probably stole other people's stuff too, so she should get locked up because she should learn a lesson.

Interviewer: Why do you think she stole your iPod?

Claire: Just to prove that she has authority in her projects, just to prove that she's “Numero Uno,” and that “That's how she rolls”... That's a quote from her. And I was like, “Okay, it's different when it's me. Why can't you steal someone else's stuff?” And she was like, “You're not gonna do anything.” I don't know, she was really trying to push my buttons.

Claire recognized the larger social role played by the iPod, beyond it’s being a desirable, functional device. Within the social world she inhabited, the device was ultimately at the crux of a power play that she lost.

It is also interesting to note that the incident started when Claire acceded to a peer’s request to borrow the iPod, which was soon moved out of her sphere of control. It passed through several hands into those of the girl who refused to give it back to her. Sharing technology among peers is a form of socialization as well as a way to display one’s devices and thus display status. Yet the desire to participate in this aspect of technological culture can be especially risky in an environment where validation and power are in short supply, as with “at-risk,” low-income youth. Claire clearly felt terrible for being at all at-fault in losing her iPod. She describes telling her father what happened:

Claire: I was honest with him. I was like, “Okay Dad, my iPod got stolen.” He was like, “How?” and I was like, “I let this boy use it and then it got taken away from him.” And then he was like, “That’s why I tell you not to let people use your stuff.” I’m like, “I know. I know that now.” He’s like, “That’s like the time you let the girl use your textbook and she never gave it back.” I was like, “Okay dad...Rubbing salt into the wound.” He’s like, “I’m mad because I bought that for you, you know how much that cost?” I’m like, “Yes dad, not my fault.”

Here, even her father advised her not to share her technology, highlighting once again that for these youth, public enactment and engagement with technology in their everyday lives is curtailed in the interest of personal protection and preservation, relating to their sometimes risk-laden social environments, and the emphasis on personal responsibility to manage that risk.

While the majority of youth did not have such dramatic encounters around technology during the course of my fieldwork, nearly all of them reported incidents where technology was lost or broken in the course of daily use, most often cell phones. Again, we see how the nature of the technology itself, meant to constantly carried around on the person in order to make one more “mobile” contributes to situations where the technology can be easily negated, and its replacement necessitated. While the experience of breaking or losing personal technology devices might be quite common among young people across the socio-economic spectrum, for low-income youth such losses can result in lengthy or otherwise significant gaps in their everyday technological engagement. The consumer market for personal technology has built disposability and replaceability into the modern technological experience as yet another benefit of plenitude and progress. Tech devices represent a significant cost to most consumers, yet they are also perceived as items that become obsolete quickly and require the purchase of periodic replacements

and upgrades. The young people in this study, however, were not always able to immediately purchase replacements for lost, broken, or even simply “old” personal technology. This affected their inclusion and ability on two levels: in terms of the functionality lost by the loss of the physical object, and the temporary social interruptions experienced. The “promises” offered by a consumer-based technology culture were limited by the inequalities and resource gaps already present in the teens’ lives, serving to further exclude them from its benefits, which required ample resources to combat the risks associated with technology ownership.

One of my interview questions asked youth to envision how they would feel if they lost all of their technology devices for a period of time. I thought of this as an interesting thought experiment to uncover their feelings of dependence on technology with a hypothetical question. However, several youth’s responses revealed that this was not a simple thought experiment – that they HAD experienced periods of technology loss that they felt were as significant as the scenario I described, even if the loss was just one significant piece of technology. Sam (17, Low-Income, Hispanic), who had his cell phone stolen, but who had also broken a cell phone or two, discussed what it was like to lose all the information contained in his phone:

Interviewer: So what happens if you lose everything that's in your phone? How would you feel?

Sam: Yeah that's... That's very bad.

Interviewer: Has that ever happened to you?

Sam: Yeah. It's heartbreaking.

Interviewer: Why?

Sam: It's like everything you've got, everything you've had, like all the numbers you've gotten, all the friends you haven't talked to in a long time but you got their number, it's all gone. Like all your memories that you have in there, everything you've wrote before, it's all gone. It's like, mm mmm (shakes head).

Others, like Hai, made the connection between the hypothetical question I asked and their own experience:

Interviewer: So what if all your technology disappeared for day or a week? If you didn't have everything, how would you feel?

Hai: Oh man, why must you give me this nightmare!? That, wow, that is tough. Well like I said, my laptop is so old, I've had a couple hard drive failures, so I have had stretches of time where I did not have my laptop access, so I didn't have access to the Internet. I didn't have access to talk to my friends. I didn't have access to my anime. This happened last August. I didn't have my laptop for two weeks. And I was really bored out of my mind. It brought me back to my old days as a kid when I just had my TV. I sometimes had to go ask my sister to use her computer 'cuz I wanted to check my e-mail. But that was just my laptop. I still had my cell phone. I didn't use it much. I don't really talk to too much people on the phone. Yet if I was to lose all technology including the TV, 'cuz that's technology too, that'd be really hard for me to take. We'd have to have a complete power outage and phone system failure in one fell swoop. It would be pretty near traumatizing for me. I wouldn't know what to do for a while. Jeez, I can't even think of what I'd do. I'd be so bored. I don't know how long it would take for me to recover.

Many youth like Hai could identify how they would feel in light of a major loss of technology in their lives because of actual losses they experienced. They often described feelings of boredom and disconnection (from friends, especially) in the event of technology loss. While young people often embellished their reactions for dramatic effect, as boredom is likely not traumatizing, their responses to my question, as well as their other stories about technology loss and interruption illustrated the importance they attributed to technological connection and ownership. It also highlighted how technology loss is not hypothetical for many of these youth. These periods of loss were meaningful to them, not

because of the specific things they did with the technology, but the feelings of inclusion, exclusion, and personal control that they attached to technology ownership and use.

Adaptations

For most youth, these periods of technology loss were temporary because of the many tactics they had for acquiring or replacing technology. These practices indicated remarkable adaptability and resourcefulness among low-income youth which spoke to the importance of technology in their lives. Not surprisingly, these adaptations became more common the farther down the socio-economic ladder the youth were located. The fewer resources that youth had to replace technology the ideal or “legitimate” way via the consumer-capitalist market system, i.e. buying name-brand products brand-new, the more likely they were to turn to alternative methods for acquisition and use. This type of adaptation recalls Merton’s strain theory, which posits that individuals who internalize cultural goals, but lack the culturally approved means to attain them, may turn to innovative (and potentially deviant) means to reach those goals (1957). For young, low-income consumers, adaptations of all sorts can function as a means of exerting agency in the marketplace, and of meeting their needs and wants in ways that are less necessary for more affluent youth (Goldman and Papson 1998). The increasing role of technology in consumer goods, and the ways in which it is built upon the promise of innovative means for personal expression, adds to the possibilities for adaptation around consumption, in ways that are just beginning to be understood. Chalfen and Rich (2011) note how young people in general have been prime innovators for making their own uses of the technology that is available to them – uses that are subversive and sometimes bordering on the unlawful (p.

115). In this section, I focus on these innovative adaptations as a function of social position for the young people in my study, while noting that subversive innovations seem to be a common occurrence for young technology users in a consumer marketplace, rather than viewing deviance as solely tied to marginalized social identities.

For these young people, having technology *at all* was more important than having *the best* technology, or the technology that they might like to have given greater resources. One simple tactic was to simply make do with the technology they had, even if it was broken in some way. As long as it still worked and could perform its most important function, a teen might hold onto the device, as Elizabeth (16, Working-Class, Asian-American) described:

Interviewer: Okay. Do you have a cell phone right now?

Elizabeth: Oh, yeah.

Interviewer: And it's having problems?

Elizabeth: Well, the screen is cracked and the bottom is a little screwed. But it still works. That's the good part of technology.

While my subjects often bemoaned technology's delicacy, and the ease with which such expensive items broke upon being dropped or submerged in water, Elizabeth was grateful that her use of her cell phone was not inhibited by the flaws in its appearance. Though style and aesthetic appearance has become a recognizable attribute of tech devices, some young people identified the separation of form and function, and were satisfied with the latter.

Informal Economies and Sharing

As the teens were not always able to purchase new technology, they turned to other methods to acquire or upgrade their devices. They developed informal economies around tech use which enabled teens who wished to upgrade to new technology to profit from old technology, and also allowed peers to acquire “new to them” technology at manageable prices. Sometimes, youth shared and borrowed technology from one another. This might happen on a very temporary basis, i.e. when a youth would ask to see another’s cell phone or mp3 player, or wanted to try it. It could also be a long-term exchange, such as when Elizabeth borrowed an older Nintendo DS hand-held game system from a friend who had gotten a new one.

In addition to the lending of technology, youth often purchased technology off of one another, or traded pieces permanently in a barter exchange. This informal economy that youth built around technology allowed the buyers to access “new-to-them” technology and to replace older technology that had been lost or broken without having to pay retail prices. The sellers benefited from being able to profit from older, unwanted, or unneeded technology that might allow them to purchase something new, or to purchase a more desired piece of technology from someone else. Buying used technology from a family member or peer was very common, especially with regard to small, easily traded items like cell phones and mp3 players. While brand-new was ideal, the second-hand market among youth was an acceptable and useful way to participate, in a way that benefited both the buyer and the seller, in the aspect of technological consumer culture that emphasized constant upgrading.

The links of this informal economy around technology could sometimes be seen to connect from person-to-person as individuals worked to “trade up,” as in this exchange with Andre (15, Working-Class, Hispanic):

Interviewer: How did you get the PSP for free?

Andre: My friend, I gave him my Sidekick from before.

Interviewer: A Sidekick different from the one you have now?

Andre: No, same thing. Same color.

Interviewer: So how did you get a new Sidekick?

Andre: Oh, Ellis gave it to me. Because his Sidekick doesn't work. I was gonna get it fixed but now I can't find it.

Here Andre participated in two exchanges: the barter of a working Sidekick for a PSP game system, and the acquisition of a broken Sidekick from someone else. With the diversity of potentially desirable tech devices among youth, from video game systems, to cell phones, to mp3 players, there was a large pool of potential trades to be made. These types of exchanges were common among the youth I studied, with an exchange, sale, or long-term lease being as common as a teen acquiring a brand new device. The fact that Andre ended up with a broken and misplaced Sidekick, which he may not have been able to fix, illustrated that not all exchanges worked to everyone's benefit. But youth looked for the best trade they could make based on various factors, including the ultimate desirability of the item. Even if it was broken, perhaps it could be fixed, and was certainly worth taking off a friend's hands if they deemed it useless. By making these constant appraisals, calculations, and trades within their social circles, disenfranchised youth demonstrated an adaptability which allowed them to participate more fully and actively in the technology market than their economic resources might have allowed. These exchanges

were also social acts, which, rather than establishing status through the display and upgrade of technology products, enabled youth to cultivate their individual technology environments while helping and sharing with one another. This informal economy was largely collaborative and communal, rather than competitive.

A final adaptation that allowed youth to participate in the acquisition of technology was “finding” technology. This adaptation was the one that most closely bordered on, or crossed over into, unlawful or deviant behavior by individual youth. In these circumstances, youth reported acquiring technology by having found it, in a public place or otherwise. This was first touched on earlier in this chapter as a method of technology acquisition sometimes practiced by parents and guardians to secure technology access within the home. The act of appropriating found technology was also practiced by youth as a means of personal technology acquisition. While the teens who did this generally believed such technology to be lost or abandoned, sometimes these stories seemed to skirt the edge of legitimate acquisition. Rarely, youth would admit to outright theft as a means of acquisition –an entirely illegitimate means of acquisition. In telling stories of finding/acquiring technology, teens would often be vague about the circumstances or their ability to locate the original owner. Youth also regarded such easy acquisition of a new, valuable piece of technology as a “score” that they were proud of and willing to talk about. But it was a sometimes difficult task as an interviewer to tease out the circumstances of these incidents.

One particularly dramatic story was recounted by Izzy (16, Low-Income, White), one of the most economically vulnerable youth in this study,⁸ who told me about how she stole an iPod from a drunken man who was recuperating in her home:

Interviewer: Has anything interesting happened?

Izzy: No, but I stole an iPod.

Interviewer: You what? Why?

Izzy: Because.

Interviewer: From where?

Izzy: Some dude.

Interviewer: What dude?

Izzy: A dude that was in my house. He was drunk and he was sitting there, and like a whole bunch of money, he's a drug dealer, so, a whole bunch of money fell out of his pocket, and everything fell out of his pocket, and I took it, and he was bitching at his girl, 'cuz he was telling his girl, "I was here, this was the last place I was, now where the hell is my money?" 'Cuz he didn't know he was at my house. All he remembered is he was at his girl's house... Well, everything fell out of his pocket, so I just picked it up and put it in my closet. And then his phone kept going off and I was like, "Hello?" and his girl was on, and I was like, "I found your boyfriend." And I was like, "Here." Then that's when I just brought him outside and she found him.

Izzy was fond of embellishment and her stories sometimes stretched credibility, but the nature of her story reflects the volatility of her living situation in a nearby project. In such circumstances, where she had very few personal resources, surrounded by other individuals in vulnerable circumstances, the easy acquisition of a piece of new technology was likely very tempting. In terms of Merton's strain theory, Izzy would be categorized as an

⁸ Towards the end of my field work, Izzy became pregnant and stopped attending the center.

innovator in her rejection of legitimate means of acquisition, while accepting and recognizing the desirability of owning these technological objects.⁹

Most of the other stories in this vein involved finding technology somewhere and keeping it. Jaime (14, Working-Class, Hispanic) found a Palm Pilot in a cart at a supermarket. Tyrone's (18, Low-Income, African-American) grandmother found an iPhone outside in the snow which she gave to Tyrone and his siblings, and which they used as an mp3 player. Those who participated in this method of acquisition tended to be on the lower side of the socioeconomic spectrum of my participants. With fewer financial resources to spend on technology, finding a piece of technology could seem like a fair and opportune method of acquisition. The same characteristics of mobile technology which allowed them to easily lose and break their own technology contributed to these circumstances which allowed them to find the lost technology of others.¹⁰ This was another aspect of the informal economy of technology which they participated in, although without the social ties and obligations of fairness that structured the bartering and exchange system among peers.

This method of acquisition had a significant downside, however. These technology items were usually found without the accessories necessary to keep them functioning, such as chargers and USB cords. They may have also been programmed by their

⁹ I emphasize that instances of youth admitting theft in this way were very rare, and I do not think it was a common occurrence among the youth in this study. They were much more likely to have their technology stolen by others – instances of which are documented elsewhere in this chapter.

¹⁰ Often when discussing their own lost technology, youth exhibit a sense of *laissez-faire* and seemed to let it go fairly easily despite the frustration of lost data, function and connection. This detachment and ambivalence will be discussed in the next section.

owners with a passcode which made them inaccessible to the finder. While the accessories could be purchased, youth were not interested in investing in these “free” items, and found technology soon stopped functioning. This happened to both Izzy and Jaime, resulting in the quick abandonment of their prize. Jaime wrote little notes to himself on the Palm Pilot for a little while, but, at interview time, could simply guess at where the dead device was located. Izzy still had plans for her found technology, which required additional financial resources:

Interviewer: So where is this iPod now?

Izzy: It's dead, I have to get a charger for it. It's one of those little ones.

Interviewer: So did you use it at all?

Izzy: No. Just wanted it.

Interviewer: Well, so why did you do that, if you couldn't use it at all?

Izzy: Because I can get a charger and I can get a cord and I'll put my music on it and I can listen to it.

Interviewer: So you plan to do that? You just haven't done it in a year now?

Izzy: When I have money I can do it.

Whatever the iPod represented to her when she acquired it was hampered by its dependence upon various other accessories and their cost. Though the mobile nature of many of the devices discussed here makes them seem highly functional on their own, youth's attempts to own them solely as the device, without its accoutrements, highlighted how technology ownership and the promises embedded in it are not independent of other necessary investments in technology. While low-income youth attempted to subvert this and make adaptations that allowed them to participate in techno-culture, these requirements

became evident as more disenfranchised youth sought access in ways that moved them further and further outside the legitimate means offered by consumer culture.

Ambivalence

The unsteady relationships youth experienced with technology were evident not only in their adaptations around the acquisition of technology, but also in their attitudes towards the role of technology in their everyday lives. Though technology use was obviously an important part of their lives, and something they engaged with daily, youth commonly expressed ambivalence towards what they saw as technology dependence in others. While young people are often characterized by their enthusiasm, fervor and self-characterized “addiction” to their tech gadgets or online activities, the youth I interviewed commonly played down their levels of daily technology use and their dependence. Many also articulated critical analyses of the effect of technological dependence in society.¹¹ While I don’t necessarily think that the youth’s perceptions of themselves as not using technology as much as their peers was always entirely accurate, I see this somewhat detached relationship to technology as a response to undependable technological environments. This ambivalence could be understood as a defensive move by poor youth against the disappointment of not being able to participate fully in the culture, an attitude which must be repaired in order for youth to participate fully in the CTCs. This reasoning is partly true. However, its pairing with a critical attitude towards technology highlighted

¹¹ While it could be argued that youth were sensitized to critiques of technology by participation in the CTCs in which I was studying them, these critiques seemed to go along with youth’s claims that they didn’t use technology very much, as we will see. Critiques of technology that emerged from the CTC environment would make more sense if they were attached to youth’s increased use of technology that took place in the CTCs. Critiques of technology such as youth expressed were not cultivated in the CTCs as far as I observed, and I believe were much more strongly tied to youth’s everyday experiences of technology. As will be introduced in the next section, CTCs can provide the stage to counteract or focus some of this ambivalence by reducing uncertainty around technology.

the unique positionality these young people occupy as they enter alternative digital learning environments. It is this very position which allowed them to cultivate these critical views of technology, which informed what they do within the CTC environment, as well as how they made sense of their participation and what it did for them.

Don't Use Technology Much

It was common for youth to express in interviews that they were not that dependent on technology, whether in terms of how much time they spent surfing the internet, how much they used their cell phones, or how often they checked social media such as their Facebook accounts. Even though they acknowledged technology was very important to them, at the same time they stressed that it wasn't *that* important. Ricardo (18, Working-Class, Hispanic) characterized his daily tech use as limited by his busy schedule:

Ricardo: As far as overall, I would say like, combined, two hours, because I really...First of all, I work two jobs so I really don't have much time and when I get home, I get home late and I'm tired so, it might be from 10 to like 12. Or sometimes it might not even be 2 hours, it might, it could only be, check if I have email or something like that.

Interviewer: So you're talking about how much time you spend on the internet?

Ricardo: Internet, and on the phone, yeah.

Though he had a cell phone, which he paid for himself, he said it was “for emergency only.” It was common to play down cell phone use and dependence, and to characterize one's use as happening largely in reaction to others demands, as Nia (14, Middle-Class, African-American) did:

Interviewer: So, you have a Samsung cell phone? Are you dependent on that, too?

Nia: Not really. I just use it to call my parents, call friends once in a while, when I'm extremely bored, and text every so often. But, most of the time, it's my friends that are texting on my phone. So, not really me.

Interviewer: So, you're not one of these people who are texting all the time?

Nia: No, not all. No.

Interviewer: Why not?

Nia: Because I figure it's a lot easier to talk and I have a touch screen so, it's like my fingers are so retarded when I'm typing things in. [Laughing] So, I try not to.

Nia not only rejected the cell phone as important to voice communication, but preferred not to text, the increasingly preferred mode of teen mobile communication (Lenhart 2012), because of her perceived lack of skill in physically interacting with the technology. While the indispensability of these technologies was unquestioned, many youth denied its importance to them personally. They characterized it as a potentially useful tool, and a salve to boredom, but one that did not ultimately control them.

Don't Want Much

One of my interview questions sought to gauge youth's desires for new technology, and I expected that, given a consumer culture that cultivates a continual desire for novelty, and the especially fast cycle of technology consumption, youth would easily name a number of tech products they were longing to have. To my surprise, many youth expressed that, while they might certainly like a new cell phone or mp3 player, they were fine with what they currently had. While this may have occurred with some of the youth from higher socio-economic categories in this study because they were perhaps more easily able to attain the items they wanted and thus their desires were satisfied, it also occurred among lower SES participants. For them, this seemed to be a matter of either having acquired an acceptable level of personal technology ownership in the manner already

documented in this chapter, as well as an acceptance of limits around what they could acquire given current resources (*conformity* in Merton's terms):

Interviewer: Would you want a new phone?

Imani (15, Working-Class, African-American): If I could get one - like, when I get a job, and I have like a steady job, then I would get a phone that I would actually be able to - like, an iPhone or something; or like a G1, where I could do everything on it.

While many youth planned for new technology in a hypothetical future, youth were generally satisfied with owning technology that functioned and met their basic needs and expectations at the present time.

Could Live Without It (And Have)

Another common attitude expressed by youth was that, if necessary, they could live without technology. This was often connected to the interview question mentioned earlier regarding feelings about the loss of technology for a period of time.¹² While some youth instantly recoiled from this idea, fearing frustration, boredom and isolation, I was surprised by the equally common response from youth that they would welcome such an occurrence, at least for a limited time period:

Interviewer: If suddenly you didn't have any of your technology, your cell phone, your, do you have an mp3 player...?

Amina (17, Working-Class, Somali-American): I think I'd be more healthy.

Interviewer: Yeah, if suddenly all this stuff was just gone for a week, how would you feel?

¹² I often asked youth to envision different amounts of time without access to technology, moving from shorter time periods such as a week, to a month, to envisioning a world without technology all together. Teens' ambivalence about being separated from technology definitely decreased as the length of time increased. After a certain period of time, many expressed fears about being bored and being disconnected from social happenings and general information.

Amina: For a week? I want it to be gone for a while. No cell phone for a week, no television...

Interviewer: [If you didn't have any technology for a week], how would you feel?

Ricardo: (laughs) Go back to the old days! No, before I even had any electrical devices, I mean, all the time my fun and still is pretty much going to the stadium and playing soccer or football. So to me, it would be hard because you're so used to using technology, but I could always go back to that. Some people might have a harder time though.

Interviewer: What do you think a day in your life would be like if you suddenly had none of your technology stuff? You know, you didn't have your cell phone or your computer?

Hanh (15, Working-Class, Asian-American): I think it would be fine. 'Cuz usually I don't really use much technology. Well, I don't usually watch TV or on my cell phone a lot. But I just go to school, go home. I just usually walk all the time. Yeah so I'm fine without technology for one day.

Interviewer: How 'bout a week?

Hanh: That's fine too, but not a month. 'Cuz I don't know what's happening around me without technology for a month.

As mentioned earlier, many youth experienced actual interruptions of technology use that informed their understanding of this question. Sam, who had lost his phone as the result of a mugging, claimed to be enjoying the after-effects, saying, "Honestly, it hasn't been that bad. 'Cuz I don't really have a lot of people bothering me and stuff." A life without his cell phone was "stress-free," and while not ideal, had an upside he could take advantage of until he acquired a new phone.

Technological Critiques

These feelings of ambivalence and claims of independence from technology connected to larger critiques of technology for many youth, in their lives, in the lives of generalized others, and in the larger society. Their desires to separate from technology and avoid dependence were intertwined with their concerns about technology and ambivalent or negative attitudes towards the effects of increased technology use. In this section, I will detail some of these critiques and concerns around technology that youth shared, and delineate their linkages to the particular experiences of the youth I studied.

A common critique identified technology as inhibiting one's quality of life, especially in terms of communication, socialization and healthy interaction. Christie (15, Working-Class, White) described making a deliberate decision to spend less time online after the deaths of several people she knew, saying, "I just think it's important not to waste your time on the computer when you could be doing other things with your life such as teaching people what they should know or what they can teach to other people." Here, a non-technological series of events caused Christie to re-evaluate her activities, which involved intensive daily internet use, as separating her from the world rather than connecting her. She also indicated that she felt she was "missing out" on real world social gatherings by prioritizing internet use in her life, rather than feeling that technology was essential for organizing and finding out about such events. Her reference to teaching was likely also a reference to The Learning Program, in which she was participating, indicating a different type of technology use that she perhaps discovered to be more fulfilling and useful than her leisure-based use.

Other youth did not necessarily have such dramatic catalysts that led them to contemplate the role of technology, but they did draw on personal observations and experiences. Though they viewed technology as a tool for facilitating communication, an overdependence on this tool had observable consequences such as the inability to discern tone and complexity in a conversation, the loss of “real” human interaction, and the isolation and shift in thinking that comes from constantly interacting with a screen.

One youth with a tech critique that embodied all these elements was Amina, a 17-year-old, Working-Class, Somali-American Muslim who participated in both TLP and TFP. A bright and thoughtful girl, she had a solid critique of technology despite (or perhaps because of) her active participation in these programs. She felt that dependence on technology handicapped people’s ability to write and think, as people turned to the Internet for instant answers rather than taking the time to read books and engage in discussion and debate.¹³ Like Christie, she limited her Internet and television use, both because she was busy and because she was not pleased with what she perceived as a loss associated with intensive TV and internet use. She credits her mother with planting the seed that media use should be accompanied by some kind of knowledge acquisition or growth:

Amina: My mama always said to me, "If you watch TV for an hour, at least tell me one thing you learned today from watching it." ... She was like, "If you're going to watch all these movies, you're going to keep watching TV all day, at least by the end of the time when you're done watching it tell me what you learned." And there isn't...There's nothing I learned there.

¹³ Her thoughts were very reminiscent of Neil Postman’s argument about the loss of rational and complex thought in image-based societies (1985).

Here, low-income immigrant parents' concern around their children's technology use, which we saw earlier as in conflict with some youth's desires around technology, influenced Amina in terms of developing a technological critique which led her to evaluate the purpose of her everyday media use, and to assume personal responsibility for its effects.

Youth also commonly developed their critiques in response to what they saw as negative effects of technology and media use on younger relatives. Amina described watching what she saw as her young nephews' and nieces' overuse of television and computers, and criticized the children's mothers (her sister and aunt) for using these tech devices as defacto babysitters. She saw the detrimental effects of this tech use on one young nephew, who, despite not being old enough to talk in complete sentences or write his name, was an adept computer user:

Amina: He's about three years old. This kid does not know how to read, and he doesn't know how to speak so well because he's still a baby. But once you turn that computer on for him, the sites that he'd be going to – I don't even know how you get in. He plays all the games on the computer. He goes to Cartoon Network on his own. He goes to Nickelodeon on his own. He knows how to get to Disney Channel. I'm telling you, he knows how to get to all those sites... He can't even write his full name and he knows how to do all this stuff on the computer. It's not good for him. I tell him that all the time. It's not good for his eyes. And we turn it off, he starts crying. That kid will be on there for straight eight hours, even more if you don't take him out.

She described trying to encourage creative play when she babysat her relatives, not just for their own benefit, but also because she said that watching too much TV gave her a headache. Her own technological critique emerged from and interacted with a particular social and family structure – that of a large, immigrant family which was poten-

tially stretched for childcare resources, and in which media devices were, from her perspective, uncritically adopted as an entertainment device for children. Amina drew on her own discomfort with this use of technology within her own family and tied it to a larger technological critique around the negative effects of technological dependence.

Another structural aspect that allows many of these youth to develop technological critiques was first-hand experience in other countries where technology use was not prevalent and where technological and media infrastructures were less developed than in the U.S. A number of youth in this study were first- or second-generation immigrants with strong family and community connections in their home countries. These diasporic experiences allowed youth to experience less media-saturated environments. Rather than feeling deprived or disconnected, youth often expressed positive feelings about these situations, finding that disconnection and desaturated media and technology experiences could result in more communal and social environments. Amina recalled the difference in community and public life in Somalia and Boston:

Amina: Like where I'm from, the bus and the train is the most funnest place ever. Because when you go in to [inaudible] for the train, everybody starts talking to each other. Everyone is all friendly. But here, you get on the train, everybody's on their iPod. There's no community. But back there, there is community. Everybody is just, it's fun. You go, "Oh, hey, what happened at the radio? What did they say?" They always have something. They use politics, or whatever's going on they will talk about it. Neighbors are out more. The kids are playing together more. But here everyone is glued to their TV or their iPod or their this or that. There's nothing. It's boring.

While such a rosy view of her native city may have its roots in nostalgia and diasporic longing for an idealized homeland, Amina offered a stable and vehement critique

throughout my interviews with her. Even as she was an active participant in both programs, her early experiences in and continued connection to Somalia shaped her current attitudes towards technology in her current social world. For the youth who reported these experiences, they were generally comparing experiences in the American city in which they now lived, to the poorer nations from which their families had immigrated. While we have seen that these teens recognized the benefits of technological abundance in the U.S. and had many desires connected to this abundance, they also identified a beneficial simplicity to a social world where there was less technology in general. Specifically, less individualized and personalized technology allowed and required individuals within local communities to socialize together.¹⁴ It also prohibited the relationship between an individual and their technology, which often consists of constant interaction with a screen, rather than people, that many youth identified as being especially isolating and problematic.

Though it was not commonly articulated among the youth in the study, Amina even went so far as to form a much larger consumer cultural critique that connected to her technological critique, in which she drew a clear line between individual uses of technology and the motivations of those who produce such technology for mass consumption:

Amina: I think technology should be limited.

Interviewer: Limited? How would you recommend it be limited?

Amina: Instead of producing so much technology and everyone else. Because people who are really making technology, they don't care about you. They care

¹⁴ A lower level of technological development could actually contribute to community, as where there are fewer media and tech devices, they must be shared and used communally and collectively, such as when a group gathers to watch television.

about making money, so you have to be smart and not buy their products. I don't.
[laughs]

Her analysis explicitly made the connection between her critique of the role and effects of technology on individuals as consumers who, if uncritical about their technological participation, are ultimately serving the interests of profit-seeking corporations. It is in her constellation of personal experiences – experiences of technological and social vulnerability which stem from her socioeconomic position and ethnic background – which uniquely positioned her and the other youth to develop deep critiques of technology, even as they were avid users and had strong desires to acquire technology and be full participants in a technology-based culture. Their critiques, fully embodied in the example of Amina, were present in their technological experiences and emerged in tandem with their everyday relationships, tensions, and uses of technology that related to their particular social positions. They sought to compensate for the vulnerabilities they experienced, and worked to be full technological participants, but they also developed critical views of the role of technology, in their lives and in the world in general. They occupied complex positions as tech consumers and citizens, which influenced their relationships to technology before and during their participation in the digital learning environments that we move into next. Fundamental issues of access and stability throughout the lifecourse, which were often not assured or taken-for-granted for these youth, shaped their technological habitus – how they viewed themselves and others within a technologically-dominated society.

In the CTC

Understanding young people's situated experiences of technology is also essential to understand how the youth view their participation in the CTC environment. In this final section, I examine what youth said about their experiences within the programs they participated in, what effects they believed the program had on them, and what they took away from their participation. What do they draw from these environments, in their own words, and how does this connect to their broader experiences? I argue here that these environments provided youth with stable and consistent technological environments that allowed youth to compensate for the vulnerabilities they experienced in other areas of their lives. They were also provided the space to enumerate and elaborate their technological critiques and to establish a greater sense of control and efficacy around technology, especially as it related to other skills like teaching, project creation, and other personal goals. The digital learning environments offered important bridging spaces for the particular embodied technological relationships found within vulnerable youth populations. Their variety and flexibility also offered tailored experiences to different youth, allowing them to draw on and learn from the aspects of the programs that were most meaningful to them.

What Do They Like About the Programs?

Some of the clearest opinions and evaluations of the digital learning programs they were involved in came from the youth in The Learning Program, which made sense given that it was a clearly defined program with separate modules and projects that all students were expected to learn, as opposed to The Free Program in which youth were largely allowed to pursue their own interests in less structured ways. The Learning Program also included a strong emphasis on speaking, teaching, and articulation that primed the youth to be able to discuss their perspectives on the program. Because of this, it was much easier to get TLP youth to discuss and deconstruct their experiences within the CTC. However, the recurring themes from youth about what they liked about elements of The Learning Program echoed in the more limited expression by youth in TFP.

Though youth in TLP had many different opinions when asked about their favorite parts of the program and favorite modules, a common theme was preferring modules and technologies that they characterized as “hands on” and “interactive,” especially PICO and Fab Lab. Though they also expressed frustration around the challenge of creating real-world technological applications, many found it satisfying to create something material through technology. They also found the technology itself easier to learn when the process involved a physical manifestation that allowed them to visualize the technology and its effects, as well as to more easily remember the steps involved in making the object, as opposed to an entirely digital or information-based project. Here, Kadejah (17, Working-Class, African-American) described how her own learning style benefited more from these “hands-on” instructional modules:

Kadejah: Like, with me, I learn quicker with hands on. Like, I have to have hands on. If it's just lecturing, I get bored and I forget what was told to me. Like, I remember some parts of it but...I will remember the important parts but the parts that were not so important, or just somewhat important, I won't really remember it, but fab lab is like, I got hands [inaudible], I can tell you what I did just by looking at it. I went to the internet, got a picture, made it a vector, and made it black and white, cut it out and this is what I came up with.

Interviewer: So you're saying it's easier to remember what you did, and how you did it, and to do it again...

Kadejah: Mmhmm, 'cuz it's actually in front of you.

She believed this benefited the young children they brought into the Fab Lab from around the community, who were able to make small items, like a cardboard press-fit house, that they could take home at the end of the day:

Kadejah: Yeah 'cuz like, in the Fab Lab, usually most of the majority of things that they make there, they're able to take it home, so they feel proud like, after they go home, they show their moms, "I made this in Fab Lab." And they're just happy when like, circle-up comes and they're able to talk about what they did. It's not hard, 'cuz basically everybody can see what they did and 'cuz it's like "Well, I know what that is, I know what you did, I know what you trying to say."

As a fundamental part of what these centers offered to these young people that drew them in, this element of the “hands-on” and interactive recurred because it was a type of interactivity with technology different from their everyday orientation. Youth typically indicated a sense of efficacy around creation, of “making something” that subtly shifted their relationship to technology – a shift that was marked by moving from the realm of the entirely digital to the connection to the physical. Many youth indicated pleasure in holding something in their hands that they made, or by seeing a physical or action-oriented manifestation of their technological work, as when a car they have programmed with PICO responds to their commands. This common reaction from youth also

positioned the CTC environment as different and more engaging to them from other, more lecture-based and top-down learning environments such as they might experience in school and other traditional learning environments. For marginalized youth, these more open and interactive digital learning environments addressed not only their discomfort with deep engagement with the “black box” of technology, but also their distance and disengagement with more traditional learning environments. The importance of “hands on” and why it was attractive to these youth ties to the additional themes around their self-reported experiences in the centers. Youth reported a deepening understanding of, and engagement with, technology as part of their CTC experiences. The CTCs provided them with new technology programs, skills, and resources, but also the stable, guided, but open environments that pushed them to think about their relationships with technology and its possibilities in new ways.

Some of the beneficial effects teens identified from being in these programs included an expanded consciousness and critique around technology in their lives and the world around them, more conscious personal technology use, and greater feelings of efficacy and accomplishment regarding technology, including their ability to create and produce things, and to teach these skills to others.

Teens in TLP expressed that their participation led them to simply think more about technology, and to be more conscious of its presence in their lives as they learned to consider its impact and manipulate it in different ways. Both through the specific modules and through the group project focused on solving a community program, youth developed new connections between what they were doing in the CTC environment and

technology's larger impact and effects. When asked about the program's impact on him, Ricardo said:

Ricardo: It affects my view because it brings more meaning into me. For example, like, before I didn't really think much about it. Like, it's just there, use whatever you want...like how you would use it in your life. Like, for example, I would just think of a computer, you just download music, do your work, what I've said before. Now with this program you learn that there's so much more to that. You know, if you really care about something, you wanna bring awareness or change something, you have the potential to do it with a simple program that you can find online.

Ricardo drew the line between a shifted orientation towards technology and direct action he might feel empowered to take, utilizing his newfound feelings of efficacy around technology. While it has been established that new personal technologies are blurring the line between producer and consumer, these young people didn't necessarily develop a sense of that increased production power on their own. Ricardo indicated a less active, less empowered relationship to computers and their potential uses before entering TLP. This relationship seemed to be structured by the typical and accepted uses of technology to which he had been previously exposed. TLP provided the means as well as the environment to develop new possibilities and pathways around technology's uses.

Other youth in TLP detailed what they saw as a shift in their thinking around technology, and how it applied to their everyday experiences, before and after their experiences in the CTCs. It was common for youth in this program to articulate the shift from passive consumption of technology to active production and creation, as this was a recurring theme throughout the program. Tatiana (19, Working-Class, African-American) said that now, instead of just seeing a phone, she saw "that you can do more with it." Melanie

(16, Middle-Class, African-American) described a recent experience that she tied directly to the shift in perspective cultivated by the program:

Melanie: It's kinda funny, we were watching a DVD yesterday at home and my father paused it to talk on the phone a sec and then a screensaver came up for Samsung and I was like, I can make that. (laughs) So you think about things a little bit differently. Like different shows that you see or pictures that you might see, like how it can actually be made or robotics and things like that, I think I'm a lot more aware of what goes into making things. And even just thinking a little bit more about how it can be done, you know? So that's kind of one way that it's kind of changed.

Other youth, even if they did not have as sophisticated an evaluation of their experiences, did suggest that the programs allowed and encouraged them to pursue interests and realize goals through the technological resources made available to them, especially with regard to the recording studio in TFP. As Marcus (17, Low-Income, Hispanic), one of the avid rappers at TFP said:

Marcus: I feel like I can depend on myself to...I believe that I can rely on myself now more than having to wait for somebody else to help me out with the recording or making labels or [making an] animation. Or anything that has to do with technology.

Reported personal success stories of achieving material goals, completed projects, and sharing their knowledge and creations with others illustrated the particular ways in which particular youth utilize the CTC and its resources in ways that empowered them as technological creators and consumers. This environment not only provided youth with the technical means to create, and the introduction to new technologies, but also encouraged and allowed them to envision that which they would like to create while providing them with the means to do it. A shifted perspective around technology also allowed them to

bring new eyes to the technology they experienced in their everyday lives. Instead of seeing it as something pre-packaged to be consumed, they began to see these artifacts as created, and as something that they could potentially make themselves.

CTCs provided the tools and the stable spaces to expand their concept of technology use and to actualize other technology-related desires that they hadn't previously identified or didn't have the means to realize on their own. Sometimes youth acted as ambassadors for their centers by showing off their creations or telling their friends about the CTC and what they could do there. Sam, who brought a number of youth into the recording studio at TFP, reported the reaction he got when he told peers about the existence of a free recording studio:

Sam: You know but, there's not a lot of places where you get free studio time, you know. And when people ask me like, "You go to a studio?" I say yeah, it's free. That's when their eyes open, they're like, "Whoa, free studio, where at?"... Yeah, 'cause I feel like they have a talent and they have no way of using it, so I'd rather bring them here and let out whatever they have to let out.

Tatiana, who had used the embroidery machine in the Fab Lab on her own time to create some personalized clothing, said that when she wore the clothing out in public, people asked her how she did it – creating an opportunity she used to tell others about the program. These testimonies about their creations effectively linked their CTC experiences and shifting relationships to technology from consumption to production to the outside world in ways which solidified their own productive uses, as well as potentially spreading this altered relationship to their community and peers.

Another linkage between the CTC environment and everyday technological environment was made by youth who downloaded and used programs that they learned about

in the CTC onto their home computers. This was most common with GIMP, the open-source photo editing program, but some youth in TLP also reported using Scratch at home. Though one draw of the centers was exposure and access to technologies that they couldn't access at home, the programs also had the effect of exposing youth to open-source and free software that they could access on their own, as long as they had a computer and internet access.¹⁵ Beyond this, the instruction they were given around the modules often sparked their interest, gave them ideas, and established a comfort level with the technology that led them to use the programs on their own, to improve their ability to teach, to simply "play around" with them, or to do a personal project. Several teens shared these technologies with younger relatives at home, illustrating how technological capital acquired within the center can become a resource that spreads throughout the community. TLP envisioned building a critical mass of youth with exposure to STEM fields through the linked community learning-and-teaching structure of the program, yet this process also occurred informally as youth acquired the means, the enthusiasm, and the comfort level to share their newfound identities as technological creators. Nia (14, Middle-Class, African-American) described this experience with her younger brother:

I downloaded the Gimp and Scratch on my computer. So, I taught it to my little brother and he's not that much littler than I am, but he's twelve. And I taught it to him and [he] wasn't too interested in it, at first. Like, I showed him the cat and I told him like, "You could make PacMan with this," and he, like immediately became excited and wanted to learn more about it. So, I think teaching it can help, like, just give kids something different to do. So, I know a lot of kids are inter-

¹⁵ This points to the importance of open source and free software as a method of tech access for underserved populations, and CTCs as important proponents of this movement, in addition to providing access to technologies that are more prohibitive in terms of size, cost, or availability.

ested in playing video games. Like, I know my brother is. But, actually, understanding it and like realizing that, hey, I could do this too. Like, I can make the video games that I love.

In watching this process of discovery by her younger brother, which she helped spark, Nia seemed to mirror her own empowerment through The Learning Program. The excitement expressed by her brother prompted her to brainstorm additional projects and possibilities that might further engage him in taking on the stance of creator, rather than remaining a video game consumer. She was eager to encourage him to continue this process that she had begun within the center, of becoming more interested in technology and how it works, while developing a sense of creativity, determination, and problem-solving skills while utilizing these technologies. In doing so, she reinforced these connections for herself:

Nia: Like, when we come into a problem here, I take it home and expand on it more and think about it and figure just things. You know?

Interviewer: So, you're working on your own time? [Laughing]

Nia: Yeah, it's just for my own benefit and entertainment.

The manner in which youth reported their experiences in the CTC feeding back into their everyday technological relationships, both with regard to themselves and others, indicate the influence of stable and enriched digital learning environments for marginalized youth.

Conclusion

In this chapter, I sought to depict and describe the relationships less-advantaged and minority youth in my study had with technology outside of programs that sought to intervene in their relationships, and from their own perspectives. I show that the youth in

this study are active meaning-makers through technology, much like their more privileged peers – but they also experienced their identities from marginalized positions. I explored how they experienced vulnerability and instability in their relationships with technology, and suggested how these experiences tied into their ambivalent and critical attitudes towards technology. Understanding their everyday technological experiences in this way begins to lay the case for the importance of the CTC programs studied here, even though these young people proved to be adept and active users of technology in their everyday lives. These young people constructed their technological identities out of their experiences, which had elements of instability, adaptability, and participation within various social networks. Rather than focusing on the ambivalence adults feel around technology and low-income youth, I focused on the youth themselves to illustrate their complex relationships and attitudes towards technology, which I argue is intertwined with their social positions and with their experiences within digital learning environments.

The youth I studied were engaged with technology on a daily basis. It is important to them and they made consistent efforts to acquire and engage with technology in many aspects of their lives. They generally accepted that participation in peer groups, as well as the broader culture, is accomplished via technological means. But intersecting with their socio-economic vulnerabilities, many experienced difficulties that inhibited their ability to develop fully engaged and productive relationships with their technology. The CTCs they participated in provided a level of stability, as well as a safe and nurturing space for exploration and expansion of productive and empowered technological relationships.

While this sometimes simply resulted in a shifted perspective about their individual relationships to technology, it also resulted in technological capital – actual tools, skills, creations that youth took from the programs and introduced into others areas of their lives.

The CTC environment was also important for these particular youth because of the way in which their experiences engendered a level of technological critique and ambivalence, even as they were avid users with multiple desires around technology. This level of critique was a surprising finding, but one that made sense, if we understand that youth struggle to make sense of the digital inequality they observe and experience in a technologically-saturated world. For many of them, the potential and promise of technology use and ownership conflicted with their personal observations and concerns. For this particular population, the CTC is suggested as an important space for directing these critiques and ambivalences in ways that allow youth to become more empowered users of technology, to apply these critiques to their own uses of technology, and to address the issues they have with technology that stem from feelings of powerlessness and passivity.

Though the young people in this study had technological needs that could potentially be met by informal digital learning programs, the complexity of this project expands as we move into a deeper interrogation of these spaces. What sort of structures did these young people encounter within the CTCs? In the next chapter, I present findings from observations within the CTCs and interviews with the adult staff members to understand how these youth and adults co-construct these particular spaces of digital engagement and learning. How do individuals, with a focus on the adults in authoritative positions within DML environments, shape the daily structure of, and youth engagement with, these environments?

Chapter 5

In the CTC: The Co-Creation of Digital Learning Spaces by Adults and Youth

Having met some of the agentic young people in this study in the previous chapter, and having analyzed how their orientations to technology are constituted across multiple social spheres which intersect with their CTC experiences, I now turn to the construction of the CTC learning environments. Specifically, this chapter situates the adult staff members and volunteers as an important point of interrogation for understanding both the structures of the learning environment into which youth enter, and the trajectories of youth as they move through these informal, but still structured, spaces that emerge from adult discourses and values around youth learning, socialization, and technological use.

Within this chapter, I examine the structures and daily activities of the CTCs to better understand the guiding principles of these learning environments and those who enact them, as well as identify the everyday tensions and limitations which influenced how these ideals played out. I also explore how conflicting and converging discourses between adults and youth play out in the centers. These intersecting discourses co-create a sphere of digital learning which connects the environment to the lived experiences of both youth and adults. I show how adult staff within these community-based learning environments recognize the need to utilize youth's pre-existing technological habitus to keep them engaged in the digital learning environment, while attempting to shape youth's orientations to technology based on values emanating from adult-driven agendas. I argue that the adults who form the spaces of learning I studied are shaped by their individual

trajectories, as well as the structural constraints faced by independent, community-based, non-profit programs such as these. This places these mentor-figures within a particular constellation of effects which influence their agency and their perspectives when dealing with the youth in the programs. The structure of the CTCs and adult-oriented discourses, as enacted by these particular adults who are in direct contact with youth, intersect to create a space and set of discourses that interact with youth agency and identity.

In this chapter, my examination of the often messy, chaotic, and sometimes frustrating work of sustaining these programs on a daily basis expands upon the idea that adults are important co-participants in youth practices around technology and new media (Ito et. al. 2010). Yet I emphasize through these details that adults, and thus the construction of these learning environments, must be understood as operating at the intersection of their own set of structural constraints, constituted through the particulars of their organization, social inequities, and individual agency.

Adult discourses around/by/towards youth and their engagements with technology have historically been fraught with tension, as they often operate at the intersection of concerns around youth, risk, and modernity (Beck 1992; Selwyn 2003; Bond 2010). These discourses around how youth ought to interact with technology have a strong relationship to traditional education, which is based on a “systemic power differential between adults and children” (Ito et. al 2010:23). The spaces of informal learning at the heart of this investigation of youth’s digital experiences, however, often make efforts to break down this coercive dimension of education in ways that give primacy to young people’s experiences of literacy, learning, and authoritative knowledge. In breaking down

some of these traditional power relationships around learning, these spaces open themselves up to particular struggles, especially with regard to negotiations with youth and tensions over “appropriate” and “productive” activities within the programs. At the same time, adults often find themselves falling back on dominant adult-driven discourses because of the structural constraints inherent in the particular types of organizations they are employed within. In examining these daily processes, I concur with Ito (2010) that “the day-to-day struggles of educators, parents, and kids” in learning environments “need to be contextualized by these structural conditions and by our cultural imaginings and values around technology, achievement, and work” (p. 302). In the messiness of the everyday within the programs I studied, I show how the continued presence and influence of adults shaped the larger digital landscapes inhabited by these young people, as well as showing how adult and youth perspectives intersected and interacted to produce particular and local iterations of new media ecologies (Herring 2008).

Though educational environments often constitute spaces of intergenerational power struggles, CTCs and other informal learning environments provide spaces for alternative relationships to emerge – relationships that do not always position adults as authority figures. I found that some adults could occupy what Mandell (1988) calls a “least-adult” identity, in which they are simultaneously like and not like the young participants, and in this way were able to form connections across generational lines. Others have noted how youth programs can “serve as intermediate spaces that bridge the worlds of adults and youth” (Walker 2011:636). Walker (2011) describes the inherent potential in such spaces:

“Youth programs have been characterized as providing a bridging function or serving as a border zone that links youth and mainstream culture... These contexts often serve as a transition to professional worlds and adult life. This border zone allows program leaders to have role portfolios that are distinct from those of other adults in youth’s lives and that bridge peer-like and hierarchical relationships.” (P. 636-637)

Especially as the CTCs seek to move youth participants into leadership positions, and draw on the community to fill positions, the lines between teacher/student, and youth/adult have the potential to be blurred in ways that support redefined notions of literacy, creativity, and productivity around new media and technology. Though I depict youth-adult negotiations over technology, these are not adults who are operating from diametrically-opposed technology paradigms than the youth they are instructing. In general, adults have been catching up with youth in terms of hardware adoption and use (and young early adopters are becoming adults), challenging popular assumptions about generational technology divides (Weber and Mitchell 2008:25). Especially within the CTCs I studied, adult staff who were in close contact with the youth had themselves been active and early adopters of technology throughout their lives. They were not so removed in age from the youth participants they instructed that elements of the peer relationship couldn’t be cultivated *in addition to* the authoritative teacher/student relationship. Though the blurred lines of the relationships between adults and youth in these spaces could contribute to more tension, negotiation, and chaos within the daily processes of the programs, these relationships were essential for living out the missions and ideals of the centers. The depictions of these processes also point to the multiple roles adults can and do assume in the learning process, and in general, highlight the neglected, yet continual presence and influence of adults in young people’s digital landscapes.

Herring (2008) proposes that the current generation is a transitional generation – that young internet users are “characterized to varying degrees by a dual consciousness of both their own and adult perspectives” (p. 72). In an effort to temper exoticism around young people and technology, Herring emphasizes “moving away from a fascination with *technologies* to a focus on young *people* themselves and their communicative needs as they happen to be expressed through particular media” (p. 72). To do this requires a focus on the ways adults construct youth and their technological experiences, as well as how young people orient towards adults in their online behavior, either through acknowledgment or resistance. This chapter explores these co-constructions beyond online behavior to the expansive array of technological experiences and uses of new media I observed across my two centers. I show how these informal learning environments particularly position youth as agentic actors, but within settings operating in particular social and cultural contexts that permit and transmit agency.

While there are blurred boundaries between adults and youth in the informal, situated learning environment, I also argue that the boundaries are not completely broken down – adult/authoritative discourses in these digital learning environments bump up against youth interests and desires in ways that can create tension, frustration, and chaotic processes. The interaction of agency and structure can also function to recreate some of the inequities these programs are fundamentally working to ameliorate. This chapter demonstrates the difficulties for the CTCs, consisting of both adults and youth participants, to be as transformative and empowering on a daily basis as they would like to be, due to structural challenges, conflicting discourses, and the intersection of agentic adults and youth.

Funding as a Structural Constraint of CTC Programs

Before adults even interact with youth, they face structural constraints which place limits on the construction of these spaces of digital learning. These non-profit, community-based programs exist within broader social and economic forces that fundamentally inform their available material resources, as well as the activities and programs they are able to offer on a daily basis. Yet structure often goes unacknowledged as a context which limits educational technology programs and can influence the potential benefits of such programs (Seiter 2007). These constraints also function to prioritize and elevate certain pedagogical discourses over others, especially as the presence of corporate and state funding is often contingent upon certain types of activities. In this way, the subject of funding, primarily an issue dealt with by one or two staff members in administrative functions within the center, provides a useful entry point for understanding the constraints faced by the centers – a set of constraints primarily dealt with by the few adults who occupied managerial positions with the centers. Through my daily observations of the ways funding entered into daily processes of the programs, as well as from interviews with these staff members, I began to see how these structural constraints interacted with adult staff agency on a daily basis to form particular digital learning spaces into which the youth entered.

Funding in the CTCs of the Current Study

The centers in this study were representative of other many community technology programs and youth media programs in terms of their funding situations and tactics utilized to expand resources and compensate for shortcomings. Many CTCs rely on part-

nerships with other community organizations, and form or join networks to share resources and best practices (London et. al. 2010). The majority of youth media programs have small staffs, relying on part-time staff, volunteers, and consultants. They have low levels of funding, and seek to establish and cultivate wider community support in line with their goals for broader social change and positive youth development (Tyner 2011). Sustainability and capacity are primary goals, and also primary challenges for such programs.

Both centers in this study were fairly well-off in terms of everyday operating costs as they were connected to supportive subsidized-housing complexes. The center that housed The Learning Program was also part of the Timothy Smith Network. This generally meant that they were provided with a decent amount of equipment, space, and staff. They recognized the advantages they had over other community centers which struggled with those basics. Diane, the TFP coordinator, also expressed pride in what she saw as her center's advantages over other CTCs even though they were not a Timothy Smith Center, citing the fact that every Massachusetts housing property must have a technology center:

“A lot of places fulfill their duty to have a technology center by putting a computer in a closet-like space. The computers may or may not work. There's no staff or somebody that's doing four different things is supposed to be the technology center manager. And we have a real staff and we have classes. So that's why we're number one basically.”

For Nancy at TLP, in addition to her own funding needs, the funding situations at other centers had an enormous impact on her efforts, as she needed to recruit other centers to accept the youth teachers at their centers or to send younger children to The Learning Program to be taught. She found it difficult to establish relationships with centers

who were understaffed and who had aging or inadequate technology. Staff at these centers wouldn't return calls, would miss scheduled visits or would need hardware or software brought to them. Though to a cursory observer, these centers seemed uninterested in what TLP was offering, Nancy believed that her resource-rich program needed to compensate for the lack of resources and the concomitant stresses experienced by other community centers.¹

Yet these advantages did not mean that funding was not an issue. Both centers engaged in grant-writing and sought out additional funding for their programs. The nature of the funding environment affected staffing and program offerings. For one, many grants tended to be for short-term projects and for relatively small amounts. They were not grants that could sustain a large program for the long-term. The Free Program, for example, applied for and received a Digital Storytelling grant which then required that the youth create a certain type of project. Other times, grants required the submission of proposals, and Marco and others would try to come up with a project proposal that would impress the funders, such as a youth-produced television station. In this way, pedagogical and creative discourses around technology were influenced externally by the need for funding. There was a pressure, in accepting these funds from outside organizations, to have youth create projects FOR the funders. Here, we see the basic way in which centers were ultimately beholden to funders' ideas about productive and "worthwhile" youth projects, rather than letting creation come organically from the youth themselves.

¹ Though Nancy continued to believe this, she did rein in her efforts the 2nd summer and mostly involved community centers who were enthusiastic about TLP on their own and did not require such an expenditure of energy to chase down.

Throughout this chapter, I will return to this idea that tension and mismatched discourses between adults and youth are common in the daily patterns of the programs – a tension that is located within the structural constraints of the programs themselves that shape adult agency as they guide youth within these spaces. Over the course of my observations, there were several instances of staff telling youth they needed to produce something that could be presented “to the funders,” especially as deadlines approached. The space for youth to explore and create tended to constrict as deadlines loomed. While this sometimes came from a place of frustration as staff tried to get youth to finish something, it also highlighted the disconnect between funders’ ideas about what youth should be doing and what youth themselves are interested in doing, with CTCs, and specifically the adults, stuck in the middle.

Funding was generally available for centers to acquire new equipment such as computers. However, funding was less available for things like staffing and general operating costs, i.e. costs that tended to be long-term and constant. As Diane noted in one interview, “we need money for operation costs and nobody funds operating costs. No one pays for management staff....it's unheard of. Apparently you don't need managers to run programs.” These funding trends lead to conundrums for technology centers, when they are given new equipment but they do not have the staff needed to set it up or maintain it. It also led to some of the difficulties for the other centers Nancy approached, as she believed that the difficulty in getting centers on board was because of the difficulty of maintaining a technology program, both in terms of staff and hardware. Centers, she believed,

would rather run a basketball program than embark on a potentially resource-draining technology program.²

Another commonly available form of funding available to centers was that which created jobs for youth in the city of Boston, especially during the summer months when youth were out of school. As will be seen in the recruitment section of this chapter, youth were themselves very interested in finding employment and both centers took advantage of this as much as possible. Youth were thus a potential source of labor for the centers, but jobs were also a way to draw youth into the centers. The Learning Program as a whole was an educational program designed primarily around the employment of youth. Yet, there was not a single funder for this enterprise. As Nancy pieced together youth job funding from a large number of sources, one significant portion of her job duties involved riding her bike around the city picking up youth paychecks so they could be distributed on a weekly basis. Along with the intense and meticulous bookkeeping that accompanied this complicated financial situation, it was clear that Nancy's boundless energy and expertise was spent on these mundane tasks around daily/weekly sustainability, in addition to her close involvement with the youth themselves.

The structural constraints that centers faced, and their influence on the center's organization and offerings, both positive and negative, point to a common struggle for digital learning environments – the decision to emphasize vocational or creative/critical skills for youth. Many programs which focus on underserved, low-income, or “at-risk” youth,

² It required, she believed, spreading the gospel of technology education and changing the cultures of other centers. Patricia, the TLP satellite coordinator, also noted how she was being paid overtime by the city to set up the new equipment at another center that had no one to perform that function.

such as those studied here, face a fundamental question of how much to emphasize technology skills which fall in the realm of vocational training – teaching skills which could be directly applied to future employment in the current economy – versus broader literacy training, critical appreciation, or productive/creative skills framed by a social justice mission (FisherKeller 2011). However, these are not always discrete categories in practice, nor are they likely to play out as planned within centers even if they establish priorities towards one discourse or the other. Ito (2010) found that educators in youth media programs see the media production engaged in by youth in their programs as “tied explicitly to the hope of employment in creative-class jobs,” demonstrating that creative production and vocational training are often intertwined (p. 305). For low-income youth in particular, technology training as tied to future employment and upward social mobility seems essential and easy to justify. It is also a concrete goal that is endorsed and supported by outside funders – as opposed to the more elusive and difficult-to-quantify notions of “empowerment,” “youth voice,” and “social justice.” The issue of job preparation is central in public debates around education and new media, and correlates directly to support for remedial and vocational IT training for youth (Buckingham 2008). Yet this focus on work and job preparation for low-income youth is problematic as well, as it reinforces established discourses around pathways to success in the 21st century workplace. It leaves little room for critiquing economic and social structures, and it builds young people’s relationships to technology within the same terms. For low-income youth, vocational job training and preparatory work is often seen as a more “appropriate” and achievable pathway than non-market activities (hobbies, volunteerism, noncommercial production) with which more privileged youth commonly engage and which are connected to social, cultural, and

economic capital, and upward mobility (Ito 2010). Other critics emphasize that this focus on employment in a “knowledge economy” is connected to problematic assumptions about the nature of employment, necessary skills for workers, and the attainability of these jobs for low- and working-class kids given the current class structure (Seiter 2007; Buckingham 2008). Still, the promise of social mobility undergirds support for many of these programs (Ito 2010). Even critical pedagogies are not invulnerable to being directed and agenda-driven, “ultimately the work of an adult-initiated vision of justice or social change” (Goldman, Booker, and McDermott 2008:193).

Yet this has so far been framed and studied as a pedagogical or policy debate, or understood from the top-down within programs, as a decision made and then implemented. My research shows how engagement and deployment of these discourses is influenced by structural constraints experienced by the centers as a whole, but engaged with by various adults within the programs. There are hierarchical elements to this process of engagement, as various roles within the program have more power to set the terms of the program and make administrative decisions. This power filters down through these (loose and fluid) hierarchies in my centers – and those with less administrative power often have more contact and interaction with youth. Within the daily processes of these programs, adults and youth struggle and work together to find their place within the process, with varying levels of success. As I introduce some of the major adult players within the center, I will show how engagement with these discourses is a complex process made out of daily interactions – between adults and between adults and youth – that is important for understanding spaces of digital learning and their outcomes.

Staff as Agentic Individuals within the CTC structure

“The field in general just...comes with high staff turnover because we're not offering medical benefits. We're offering a wage that isn't high enough for people to live off of and it's a part time job. I think that out of desperation I sometimes hire unqualified people...I think out of desperation, I just want a body in here. This person's resume, they interviewed pretty decent, get 'em in. Bam.” – Diane, Youth Education Program Coordinator, The Free Program

In order to understand the roles adult staff assume within the centers, it is useful to begin to understand who these individuals are, and the pathways by which they enter into and out of the centers. In this section, I introduce the major adult figures within the centers as agentic individuals with varied personal histories that shape and interact with their orientations to their jobs, the missions of the centers, and the hierarchies of power structuring their workplaces. This then leads into an examination of how discourses are understood and enacted by this diverse group of adult staff on a daily basis in interactions with youth participants.

Assembling and retaining a staff of committed, caring adults who are technologically skilled and who interact well with youth in an informal educational environment like a CTC was one of the primary challenges within both programs. Despite Diane's assertion above, I was impressed over the course of my time in the centers with how many of the staff remained involved in the programs long-term. Both programs benefitted from staff members who met those initial requirements and then some. Staff turnover and staffing challenges certainly did present themselves, and served to illuminate the difficulty of creating a vibrant technology-based program. The complex array of skills needed to implement a creative technology program, and to get teens invested, is essential to its continuation, while high staff turnover makes it next to impossible. Here, I introduce the staff members in my study and their place in program hierarchies to understand the role these

individuals played in the world of the CTC. I also show how these individuals have as much variation and diversity as the youth – a level of complexity in the world of youth programs that is little understood even as it is essential.

Both programs had a highly-educated female staff member in a day-to-day administrative leadership position:

Diane, The Free Program, Youth Education Program Coordinator: Diane was a 30-year-old African American woman with a Masters in Education and an eye towards furthering her education. Despite often talking about future professional plans, and sometimes sounding frustrated with her job, she remained at the center since taking her position in September 2006. Highly capable and with an ascerbic wit, Diane seemed to be constantly working, whether at the CTC or from home, organizing and supervising all the youth programs at the center, writing grants and supervising staff. With one of the few full-time positions at the center, Diane worked around 60 hours a week. Despite her dry manner, she obviously cared about serving low-income and “at-risk” youth and in 2010 was recognized by a local Youth Workers Alliance for her dedication.

Nancy, The Learning Program, Program Coordinator: Nancy was a middle-aged white woman who completed her Ph.D. during the course of the study. An enthusiastic and caring woman with seemingly boundless energy, Nancy also seemed to work endless hours in the service of the youth and the program which she believed strongly in. Though highly educated, Nancy dedicated herself to the low-paying center job, and had even acquired subsidized housing at the attached apartment complex. She described herself as the “glue” of the program, doing whatever was necessary to keep the program running smoothly, from funding, to curriculum, to dealing with problems with individual youth. She did less in terms of daily youth supervision during the course of my observations of the TLP program and moved to a more administrative position.

There was also a male staff member in each program who had a leadership role and tended to interact directly with the youth as an instructor more than the female leaders who assumed more administrative roles:

Marco, The Free Program, Project Manager: Marco, Latino and in his late 20s, came to the center as an Americorps VISTA working on a project to bring wireless internet to the entire housing complex. As his tenure was coming to an end in 2007, he was asked if he wanted the job of tech center manager which he accepted. Though his hours increased over the course of the study, his position was part time and he took on some web design jobs in his spare time. A college graduate from a working class background, Marco called himself a lifelong “technology geek” who had always enjoyed tinkering with electronics and understanding how they work. Marco coordinated and taught classes to youth and

adults in the CTC, and conceived of and executed projects and programs for youth at the CTC. With his youthful and laid-back manner, he was liked and respected by the youth and adults at the CTC.

Jon, The Learning Program, Program Coordinator: Jon, African-American and in his early 30s, did much of the hands-on daily supervision of the youth in the TLP program but was not otherwise employed by the center. He identified as a programmer and “hacker” with a computer science background, and he worked as a consultant developing his own projects when not working with the program. He came to the center as a user and volunteer himself in 2005, becoming involved with the Fab Lab, and he accepted a leadership position in TLP a year later. Reserved and pragmatic, Jon was a counterpoint to Nancy’s warm and ebullient style. He had high expectations for the youth and did not tolerate time wasted during work hours.

The CTCs were also populated with other adult staff members who served as instructors and mentors in more specific capacities.

Fred, The Free Program, Digital Film Instructor: Fred was a college-educated White independent film maker in his mid-40s who had served as youth film instructor at several community programs, including The Free Program since 2006. He worked between 5 and 10 hours a week at The Free Program as part of the Digital Film and Music program on Tuesdays and Thursdays. He was fairly well-paid for these hours as a consultant. Outside of this work, he created his own films, showing them at festivals around the world, and regularly secured grants for his own films. Coming from a working-class background, and having lived, as a youth, at the apartment complex where The Free Program was housed, Fred had a strong connection to, and identification with, the neighborhood, as well as with sharing his passion for film with underserved youth.

Daniel, The Free Program, Digital Audio Instructor: Daniel, White and in his mid-20s, was one of the younger role models in the center. Though he came out of college with a business degree, he went back to school for an associate’s degree in audio production. He came to the center in early 2008 after responding to a craigslist ad looking for a youth audio instructor. Though his hours varied, his was a part time position and he expressed a need for additional employment. Daniel came from a low-income background and had lived in subsidized housing himself as a youth. Street-wise and with a youthful urban style, accompanied by his technical knowledge of hip-hop and rap production, he was popular with the youth who frequented the studio.

Alex, The Learning Program, Grad Student Mentor: Alex was an African American MIT Ph.D. student in his late 20s who was part of the partnership between TLP and MIT. He was one of the programmers of the Scratch technology and was writing his dissertation on its pedagogy. So, working within TLP served as research and a data source for his dissertation, which was in the area of Media Arts & Sciences. He supervised and instructed youth when they spent time at MIT early in the program and continued to drop in

and help throughout the summer. He anticipated that his role in the program would end once he earned his doctorate and accepted a position elsewhere.

Patricia, The Learning Program, Hub Supervisor, White, early 40s: Patricia was the friendly and energetic director of another CTC in Roslindale, which, in the Summer of 2009, became the first hub of the TLP Program. Patricia had volunteered with the TLP Program in the past and volunteered her center when The Learning Program was looking for a pilot hub center. Patricia was actually a full time city employee under the Boston Center for Youth and Families, which meant she was compensated well. Stating she was on her “second career,” she was a corporate drop-out who had started volunteering at the community center, which then led to a job. As the head of a small hub of TLP, she embodied a bit of all the roles held by Nancy, Jon, and others at the main program.

Maya, The Learning Program, Mixed Race/African American, late 20s: Maya was the one adult I interviewed who had a shorter tenure in the CTC environment. She served as a Program Coordinator at TLP during Summer 2009. She was a college graduate and artist with an art education specialty. Nancy brought her in to alleviate some of her load, to be a female role-model-of-color to the youth, and to add a bit of artistry and creativity to the youth creations. Though Maya was well-liked, it was agreed on both sides that she was not a great fit for the program and it was unlikely that she would serve in that role again in the future. This situation will be discussed more within the chapter.

Here I have focused on the staff I interviewed and observed over the course of my study, but it is not an exhaustive list of all the adults who worked in the programs and with the youth. Some adults who were involved left for other pursuits or were fired if they were not performing well within their jobs. These circumstances and individuals will also appear in this chapter as I discuss the roles adults played in these programs.

The Path to the CTC

One of the major issues in staffing non-profit community technology centers is finding tech-savvy individuals who have skills that would be better remunerated in the for-profit marketplace. After all, these skills are some of the same skills that the programs are trying to instill in young people so that they too can acquire high paying, professional employment. However, there were several reasons why the CTCs in this study were able to attract the adult staff members that they did.

First, they attracted skilled and educated individuals who believed in the missions of the programs. They often believed in the necessity of educating youth and sharing their skills with under-privileged populations before they came to their specific organization. For some, like Patricia, this is the result of a privileged and highly-educated, progressive, and liberal personal history, where coming to the non-profit world was an active rejection of the corporate world. But for the majority of my interviewees, participation in CTCs was a way of coming full circle. Many of them came from working-class or low-income backgrounds, or were people of color with strong ties to urban environments and especially to their Boston communities. Having acquired an education, many staff felt a sense of obligation to give back to the community and perhaps make education possible for other young people.³ These individuals were either willing to work for low wages because they had other sources of income, were working on a volunteer basis, or were actually fairly well-paid as consultants by the CTCs, which sometimes allocated money for such a purpose.⁴

Another segment of the staff, though technologically skilled, came from less privileged backgrounds or more disenfranchised social positions. These individuals were either self-taught in their area of expertise, perhaps in addition to some formal education, and perhaps did not have the degree or experience necessary to get a private-sector job. In addition, in a depressed economy, many were looking for any opportunities for employ-

³ A more detailed examination of staff members' beliefs will be examined in the later section "Missions and Philosophies."

⁴ Patricia was the only one who had a fairly well-paid city position. A splurge on a highly paid skilled employee in a CTC was rare. Part-time, lower wage employees were more often the norm outside of the salaried positions.

ment and thus responded to craigslist and other CTC advertisements for jobs. This category of employees embodied the alternate paradigm of technology that they come to be employed within. These were often technology users who became passionate creators and explorers of technology outside of formal education and employment, whether as a hacker, musician, or filmmaker. Because of this path, they were forced to remain outside the mainstream technology economy and thus they ended up in a position to pass on their tech-ethos to young people in under-served communities.

The Path Away From the CTC

Though the staff at the programs were fairly stable during the course of my fieldwork, staff turnover did occur. Other mentors, volunteers, and employees moved in and out of the programs which contributed to some instability in the programs. Reasons for departure also corresponded to the categories for being drawn *to* the program. Highly educated or upwardly-mobile employees often had other options and obligations in their lives which made their involvement in the CTC temporary, and they moved on. For example, Elijah, a music professor and developer of Hyperscore, who instructed the program at TLP in Summer 2008, did not return the following summer. Jude, the first youth coordinator at The Free Program left to continue his education. CTCs often looked towards local colleges and universities in their college town to supply interns and volunteers, yet these were always temporary arrangements until students graduated or fulfilled even shorter terms such as a semester. Though Alex was highly connected to the TLP program, as a PhD student, it was fully expected that at some point, he would sever his daily connection to the program.

In other cases, employees underperformed in their positions and were fired or simply not asked to return, though this was not common. But as indicated by the opening

quote, Diane felt there was a short supply of qualified applicants for the positions she needed to fill. Sometimes, her begrudgingly-hired employees indeed did not fulfill their promise or lived down to her expectations. The one active firing that occurred during my study was Robert, another audio instructor, who did less and less work as time went by. However, it took a great deal of frustration on the higher-ups part before a firing would occur, and many other times Diane and others would simply express frustration over under-performing staff. In the case of Maya, where both Nancy and Maya felt that she was not a good fit for the program, both sides were fine with Maya fulfilling the terms of her employment for the summer, and then simply going separate ways. Often within CTCs, if a relationship between the staff and the program was not mutually fulfilling, it ended with the staff member moving on of their own volition.

Creating a Replenishing Supply

Though these programs had a core of dedicated staff, there were always holes to be filled, and a desire to create a system that would ensure the CTCs would always have an ample number of employees. One way to do this was through partnerships with other organizations, especially local universities. Though students were temporary, a partnership might ensure that new students were constantly supplied. The Learning Program's relationship with MIT was the most successful example of this. TLP was so intertwined with the MIT Lifelong Kindergarten Program and the Media Lab that it was clear they would continue to benefit from this relationship for years to come.

Alternatively, CTCs looked to make employees out of their own young center attendees. Employing young people within the centers had the benefits of provided needed jobs for youth, but it was also beneficial to the centers. Though youth employees required a great deal of training and supervision, they were cheap compared to adults. But youth

employment also potentially built a bridge between being a youth participant at the center and being an adult employee who, like those I have sketched out, would maintain a connection to the world of community technology because she saw it as important in the context of her own background. The continuation of community technology programs requires those who believe in its importance. What better place to groom those individuals than within their own walls?

Missions & Philosophies: Multiple Discourses as Understood and Enacted by Adult Staff

I have shown how adult staff members have different trajectories and personal histories that lead them into and away from working with youth in community digital media and technology programs. Next, I analyze their articulations of the discourses which guide their pedagogical philosophies within the programs. How do they orient themselves in terms of the missions of the programs as they understand them, but also in terms of their own views of who the youth they serve *are*, and what they need? The diversity of these adult mentors also means there was diversity within their individual orientations to, and interpretations of, the CTC environment. These diverse orientations intersected with the agency of the youth participants. Though these agencies have their “official” mission statements, we see that the enactment of these missions as discourses in the daily work of the programs is not monolithic, nor agreed upon by all the adults. There are tensions as adults grapple with competing discourses before, and as a result of, actual interactions with youth.

Internal Contradictions

Variance in staff's individual philosophies was not necessarily surprising, as CTCs themselves were open to many possibilities when it came to how to engage youth around technology. Individual staff would even express contradiction and ambiguity throughout their interviews as they were themselves struggling with finding best practices and evaluating the success of current practices. The key area of ambiguity was whether these programs should serve the pragmatic and practical function of providing youth with job readiness and skills that could lead them up the socio-economic ladder or whether they desired a more creative and community-based technological model that emphasized sharing, exploration, personal expression and empowerment. For example, early in one interview Marco stated what he believed the mission of the center to be:

“So I think a big part of having access to technology is sort of being able to educate yourself about the latest tools or whatever websites are out there that people are using and just having an understanding of basic computer literacy and computer skills can just make a huge difference in what kind of job you can get, how you live your life, you can pay bills online, you're able to deal with e-mail and applying for jobs.”

Here his emphasis is on the development of specific and practical skills. But later in the same interview, he expresses his admiration for and emulation of the Computer Clubhouse philosophy:

“So one of the things they encourage is project-based learning and kind of a, not a necessarily very structured environment. I mean, like I said, we have injected a lot of structure, a lot of rules into the center, but in terms of the programming itself just giving them a chance to explore and having them kind of be the creators is very important I think.”

Making basic skill-building and structured learning available alongside space for exploration and creation was not necessarily a total contradiction, but rather a way to support as

many productive variations of the youth relationship to technology as possible. Staff also characterized the practical skills they were imparting to youth as important tools for youth's creativity and expression. By providing skills and space, instruction and encouragement, CTCs hoped to enable one of several positive outcomes: a youth who creates and expresses himself through technology, a youth with the skills and confidence to achieve economic empowerment, or the best outcome: a combination of the two.⁵

Structure versus Freedom

Another common debate⁶ among and within staff was with regard to how much freedom to allow youth or whether to enforce a more structured experience. This connected to the different missions and philosophies staff brought into the space, but also had to do with staff perceptions of the youth and the type of environment in which they work best. Staff were constantly trying to figure out if youth could be “productive” and “creative” when given space to explore or whether they fell back into “passive” or repetitive leisure use of technology when left to their own devices (in more ways than one).

This was perhaps more the case at The Free Program where the program was fundamentally more unstructured than The Learning Program. One avenue of effort there was focused on improving the structure of the organization itself. Staff participated in a strategic planning retreat before Summer 2009 in order to clarify job roles and evaluate effectiveness. Diane implemented a process of employee documentation and evaluation which required all employees to write up their own job descriptions and perform self-

⁵ Emphasis on one or other of these goals also corresponded to position in the centers. Those with more responsibility to show outcomes, such as those in administrative positions like Diane, were more likely to emphasize tangible, skill and job-based goals for youth.

⁶ I use debate not to denote a topic that was a clear topic of actual spoken disagreement among staff but which clearly constituted an internal debate for individual staff and a source for experimentation and discussion among staff.

evaluations, all with the anticipation that the implementation of organizational systems would lead to more effectively reaching their “clients.” Still, the independence of individual instructors led to different approaches with regard to the amount of structure applied directly to youth.

While freedom was important, staff often invoked the notion of structure – the need for it and how to balance it with freedom. Fred often noted his failure to insist on structure as a reason for lack of youth commitment and retention:

“I can't place the blame on other instructors there or coordinators, but I think what we lack quite a bit is structure...and I've been trying to do it for two years and like I said, not very successfully in my estimation is to bring a structure. Even though we have a curriculum that I helped develop and it's sorta just sitting there. But I think one of the reasons that we have this problem is that the kids who come there...they tend to take it for granted and they see it as almost like a clubhouse, a place to go to get a snack, check your e-mail, check YouTube, say hi to your friends and then leave.”

A structured program was seen as necessary to get youth to take the program seriously, as something that requires their consistent attendance and effort, as well as their willingness to learn something new. While TLP had a great amount of structure built into the program, Jon emphasized that this was something that had been built up and refined over the years:

“Some kids from three or four years ago saw the program as, it's an easy summer job, just hang out with your friends. You know, not much structure. And that's been changing so, the youth teachers this year, even though there were some so-called bad apples returning youth teachers, I think the new youth teachers got the idea that this is a structured program, that we take it seriously, that there's accountability.”

These struggles around the shape of the programs highlight the difficulties for adults to fully embrace and implement situated learning on a daily basis, as youth were at the same time seen as needing protection and direction. This latter discourse signaled a

fallback on more traditional discourses around youth, education/literacy, and risk, as embodied by a traditional educational environment where adults occupy authoritative positions, and youth autonomy is suspect. This was not desirable to the CTC staff; it was agreed that youth needed structure, but there was also a reluctance to make it too much “like school.” Students spent all day in school and the continuation of the school-type environment outside of school was a deterrent to youth. Also, the CTCs sought to be different from what many of the staff saw as the overly-structured school learning environment, especially when it came to learning about technology.

The Learning Program had the clearest articulation of this philosophy echoed among the staff. The program provided just enough structure to provide the space for technological exploration and creation because they believed that exploration, building, and actively using these technology modules was the best way to spark an interest in either teaching or learning about technology. As Jon said when talking about the importance of the group projects,

“...[I]f they're really into their project, the idea is that it's gonna make those ideas stick. Stuff that went in one ear and out the other and you might remember, yeah, somebody said that...it makes it so much different when you're living it and you realize, ‘yeah, I have to be careful about measuring this because I don't wanna cut something 15 times,’ when it really is important to them.”

Here, a structured environment was envisioned to support the hands-on approach that staff saw as most effectively cementing youth’s technological knowledge and engagement, as opposed to the typical top-down school curriculum.

Process Over Project

Having a certain kind of environment that led to tech projects of real consequence to youth tied into many of the staff’s goals for the youth. This also corresponded to an-

other phenomenon that was echoed by staff across both the centers, the idea that the process that youth go through in engaging with technology was ultimately more important than the quality of their final project. The notion of “process versus project” as a delicate balance has been raised in other ethnographies of youth media and technology programs (Goldman et al. 2008). This notion was raised time and again during interviews as the adults discussed their opinions about youth creations within the centers. Staff generally indicated that because it is difficult for anyone to gain a deep understanding of any technology, and furthermore to create or build a sophisticated finished project, especially with the limited time and resources of these programs and centers, they weren’t necessarily expecting mastery from youth. Rather, there were a variety of lessons and skills youth could gain from going through the process of working as a team, trying to bring a project from concept to finished project, gaining confidence, etc. Instructors reported being satisfied when the interim goals that they themselves prioritized were met by the youth.

Sometimes this had to do with the content of the project and giving youth credit for engaging with a difficult topic, whether personally or socially. In one instance, Fred discussed a film project of Kyle’s in which he explored his personal experiences with racism in the apartment complex, drawing on a specific event that bothered him. Ultimately, to Fred’s disappointment, Kyle did not feel comfortable sharing the finished project with a larger audience, fearing he would be accused of racism himself since he was discussing an altercation between himself (an Asian-American youth) and a Black youth. However, Fred also acknowledged the final piece had shortcomings:

“I don't think it's his strongest piece either. That's the only thing. I think he could have – visually, it could have been more imaginative. But the point is he tried to explore that issue and I think that was courageous of him and he didn't go far enough mainly.”

The weaknesses of the film were less important than Kyle's attempt to grapple with and express himself around a complex and difficult topic. Fred was hopeful that Kyle gained something from the process even if the film did not reach a larger audience.

“Process over project” also appeared in a more programmatic and pedagogical sense to emphasize all the benefits of attempting the difficult tasks set before the youth in The Learning Program. Within the group projects, if the youth came up with a concept, applied themselves to the project consistently throughout the summer, and used failures and setbacks in a constructive way to move forward, staff regarded youth as having embraced the process regardless of the quality of the final project as it was presented at the project expo at the end of the summer.⁷ On the flipside, Alex noted that skipping the process and producing a perfect project was also not ideal, as he discussed a particular project:

“So if that ended up being one of the greatest projects ever, it still wouldn't have impressed me because I still wanted the process to be in the spirit of the program, which it wasn't.”

Though it was never the case that youth produced an “impressive” project without putting in the necessary work and going through the process, Alex emphasized here how the process takes precedence when it comes to youth embodying the mission of the program. Staff were careful to distinguish between process as important for creation, as opposed to “process over project” as an excuse for non-productivity or laziness on the part of the youth. Alex's comment suggested that “coasting” within the program was not okay

⁷ Jon changed the emphasis of the projects in Summer 2009 to encourage youth to solve a very specific and practical problem rather than a social issue or an awareness project because he felt that, in addition to the technical difficulties, expecting youth to “solve” a social problem was too much to expect of them because of the complexity of social issues. In this way, the scope of the process and the project was narrowed down a bit to allow for greater success for youth on both fronts.

because there was always something to be learned from the process. In general, however, this aspect was also constantly balanced against the challenges of keeping youth active and involved, as will be seen in the section on Challenges. An emphasis on process did not eliminate the wish to have youth produce high-quality finished products, but could be seen as a concession to the perception that in a situated learning environment such as this, where youth were granted a great deal of autonomy, finished projects which adults did not find simplistic or problematic in some way were rare. In order to identify successes within their paradigms of success for the programs, staff often shifted their view towards identifying successes “along the way” – or during the process of creation.

Goals for Youth – What is Success?

Staff struggled discursively with each other and with their daily experiences of youth to identify and frame successes within these learning environments. CTC staff consistently endeavored to help youth attain certain goals within the CTC environment according to their own philosophies. Their definitions of successes were also then shaped by their experiences with the youth. Talking about “process over project” highlights some of these tensions and concessions, as does discussion about what the staff regard as a youth success story within the programs. These definitions of success, constructed among adults and emerging out of interactions between adults and youth, highlight how these sites operate at the intersection of multiple discourses around youth and technology to create specific spaces of digital learning. Though different adults enacted different visions of success for youth at different times, several overarching themes emerged out of these varied discourses across the centers in terms of goals for youth and the definition of success.

A major goal for youth within both CTCs is for them become creators of technology or with technology, and for them to take advantage of the space to explore technologies with which they may be unfamiliar. Staff clearly articulated their understanding of youth as passive consumers of technology and that this was something they sought to change. The TLP staff also tied race and class into this construction of young consumers and the dearth of low-income youth of color in STEM careers:

“Well, they're consumers of technology. Young people of color are targeted as consumers 'cause they will buy these things, right? And we want them to be the inventors, and because we believe that they'll shape technology in a really different way than it is being shaped right now by white people.” (Nancy, The Learning Program)

Creativity through technology was also a goal simply for the goal of encouraging self-expression and development of voice among youth, as when Fred cited youth telling personal stories through film as marking successes of varying degrees.

Another set of goals had to do with individual development of the self. Staff want youth to develop qualities such as confidence and a sense of capability through individual projects and teamwork. Successes in this area often depended on the individual youth and their areas of growth as part of their participation in the CTC. For some particularly “at-risk” youth in TLP, this simply meant successfully participating for the entire summer. For more advanced youth, this could mean building a sophisticated project. The TLP group projects were often a space where individual development was noted, because it was so process-oriented and long-term that individual youth could develop in different ways.

The importance of problem-solving and working through failures was a common refrain for staff at both centers. As opposed to youth's consumer orientation to technology, which adults characterized as being tied to instant gratification, creating with technology was often a laborious and time-consuming process. Youth were encouraged to develop project management skills and to feel the pride and accomplishment of seeing something to completion. In addition, youth were encouraged to work through the specific difficulties of technological creation, which often involved complex problem-solving and trial-and-error. Marco cited one success story within the Computer Repair Clinic where he trained some of the youth to diagnose and fix computer problems, when they applied the process to solve a problem:

“I feel like the biggest thing that I taught them was how to troubleshoot, which means looking at the problem – I mean, step by step, ‘Does this work? Yes. Does this work? No. This work. No. This work. Yes.’ And just testing each part and then searching on the internet kind of, ‘What does this mean?’”

Staff saw their role as helping youth develop this in-depth, familiar, and process-oriented relationship to technology, rather a passive, shallow, and “instant” relationship engendered by the black-box of personal consumer technology products.

A third set of goals tied into CTCs' economic missions and the betterment of youth's economic futures, i.e. the vocational discourse. Gaining skills or experience which would perhaps lead to future education or professional employment was a recurring goal. Youth who went on to higher education were constantly cited as success stories. TLP had specifically built the goal of encouraging youth into STEM careers into their program mission.

A final goal was to develop young people's sense of community with the center and the surrounding environment, so that youth felt comfortable to create and also to contribute to the community. If you created capable, empowered youth who were connected to their community, staff believed that they would then perhaps become technological creators who felt an obligation to their communities even after they left and went on to become successful adults. This was also accomplished by creating a center or program that was a safe space for youth populated by caring and supportive adults. Community-building thus began on a small-scale within the CTCs for youth who may not have had strong supports outside of the CTC.

Over-arching goals like these are common to CTCs and other youth media and digital learning programs, and often give the impression of stable and conscientiously constructed programs which enact their missions and ideals on a daily basis with little variation (London et al. 2010; Tyner 2011). What the study-at-hand shows is that these goals and discourses do not emerge holistically nor get applied evenly. Rather, they emerge from the diversity of the building blocks of these programs, both in terms of materials and individuals. Specifically, in examining the agency of individual adults within the constraints of these learning spaces and in interaction with sometimes competing, and othertimes co-existing, discourses around low-income youth and technology, we see how adults in the programs occupy important roles in the creation of these youth programs. I have shown how this is structurally enacted in these programs; I now move on to how this occurs within interactions with youth during the daily processes of these programs.

Interactions Between Adults and Youth – Challenges, Tensions, and Opportunities

Adult mentors within informal digital learning environments have been shown to occupy a “least-adult” space for young learners. The importance of “techne-mentors,”

who aid individuals in adopting or supporting technology use in a specific context have been noted elsewhere, especially as they are able to adopt fluid positions in the situated learning environment (Horst et al. 2010:59). Rather than adopting a permanent, authoritative role with youth, these techne-mentors move in and out of the “expert teacher” role, and the relationship is more ad-hoc and informal. The techne-mentor may not be an adult at all, as many of these programs build in and cultivate peer-to-peer mentoring relationships. The intermediate space provided by youth programs such as these often function to bridge the worlds of adults and youth, providing a “border zone” that allows program leaders to “have role portfolios that are distinct from those of other adults in youth’s lives and that bridge peer-like and hierarchical relationships” (Walker 2010:636-637). Walker observes that adults in these programs often move between various roles as needed, including Friend, Parent, Mentor, Teacher, and Boss. This flexibility gives the adults in these programs an advantage when it comes to guiding youth and gaining their trust by avoiding the roles and constraints of less intimate youth-based settings. Being able to move across multiple roles can make program leaders more effective and help them meet the diverse needs of the youth they serve.

Yet the ways in which these valuable relationships between adults and youth play out is not without its difficulties and complexities. For instance, the multiple and fluid roles occupied by adults, while invaluable to diverse youth populations, can also lead to conflict and role confusion, as it is not always possible to quickly switch from one role to another in a way that youth recognize and to which they will respond. The remainder of this chapter illustrates how adult/staff agency, program structure, and youth agency inter-

act within the daily processes of the programs. It is within these interactions that the actual co-created space of learning is made, which requires adults and youth to make adjustments to their expectations and goals around productivity, creativity, and learning in ways that frame youth as “empowered” or “productive” out of sometimes chaotic, frustrating, or messy experiences. Specifically, these moments of interaction, especially as they illustrate multiple discourses at play, are most vivid in moments of tension or challenge, whether with regard to the adults and barriers to enacting their goals for youth and for the program, or between adults and youth with differing priorities and expectations. I separate these examinations temporally. First, I further examine the issue of recruitment of youth participants, and then I move into the daily challenges of engaging youth once their participation is initially secured.

Recruitment

Over and over again, when asked about the basic challenges of their jobs, staff referred to the difficulties of getting youth into the CTCs and their programs, closely followed by the challenge of keeping them involved and returning once they had been brought into the world of the CTC. This was more evident for The Free Program since their daily attendance was much lower than The Learning Program’s, but staff at both centers echoed similar ideas about the difficulty of getting teens involved in community technology programs. It was common for adult recruiters to allow and accept the discourses which youth needed to bring into the centers to allow their own participation, even if it corresponded to presenting an *image* of disengagement.

Staff understood that for image-conscious teens, it was simply not perceived as “cool” to enthusiastically participate in such programs. They also knew that semi-autonomous teens had other options for how they could spend their time; they had to make the

choice to return to the CTC. Staff dealt with this in several ways. One method was to make an effort to cater to youth interests and allow them some freedoms, while subtly directing them towards the ideals of the staff and the center, as seen in Fred's explanation of his approach:

“So my challenge is to not necessarily get them away from [Myspace and Youtube] because I feel like I have to come to them. I don't expect them to come to me to learn my ways of the kind of films that I feel they should be making, no. I have to look at their lives and kind of think about it. How can I make this program attractive to them...?”

He did not discount youth's desires and interests around technology but tried to use them to draw youth in and make the programs interesting to them, and acknowledged that he might have to let go of his preferred or ideal image of how youth might create or utilize his expertise.

Offering youth technology-based employment was another way to help them overcome the barriers to forming commitment to the CTCs. Not only did a job provide the basis and expectations for youth participation in the center, but it also gave the teens an acceptable frame for active participation, both for themselves and to present to their peers. If being into computers and technology wasn't “cool,” being employed – having a job and earning money – was generally regarded as a positive thing. For many low-income youth involved in these programs, it was a necessity – they not only needed to earn their own disposable income, but it was not uncommon for them to be contributing to family finances as well.

Another tactic was simply to accept the fact that teens would maintain their front that participation was “uncool” while understanding that teens truly did enjoy and value their participation. Nancy described observing this in one of her success stories:

“He'll act like he doesn't care...And for me Timothy doesn't seem to be that engaged. I mean he has gotten a lot more responsible. He shows up on time. And...he tries to pretend he's more gangster than into stuff. But he builds stuff and...made sure it got done...but it had a huge impact on him to be able to do that. Now he's interested into going into something that has to do with technology. But it's a huge obstacle for him to even admit that he likes this place or that it's kind of cool to have a job.”

Nancy believed that even as Timothy maintained face by holding back his enthusiasm for the program, it masked his recognition of a beneficial experience. Though it would certainly be desirable for youth to not conceal their engagement like this, it was acceptable if it enabled youth to participate. Nancy recognized how Timothy framed his participation via a “cool pose” (Majors and Billson 1992) which allowed him to create an acceptable role for himself as a participant in the program. In this way, Nancy’s familiarity with Timothy and her perceptiveness around Timothy’s attitude toward the program allowed her to accept his framing of his involvement, even if it did not match her ideal image of an engaged and motivated participant. She was able to place his current level of engagement within a narrative about Timothy and his background which allowed her to perceive his current level of engagement as a step forward for *him*.

Recruitment Obstacles – Structural Inequality

Another roadblock to getting youth involved in these programs were the very technological disparities that the centers are trying to address. Though low-income youth acquired personal tech devices that would seem to enable communication with them, their tech ownership was characterized by a level of instability that could make it difficult for staff to get in touch with youth or maintain communication with them over a long period of time. Cell phone numbers were often changed or disconnected. In addition, teens often did not check the email addresses collected by staff as the bulk of the teens’ regular

communication moved to social networking sites and cell phones. Even if they did have email addresses, youth may not have had internet access or a working computer at home. Beyond this, in low income households, a household landline telephone was not a given. Staff tried to compensate for these obstacles by doing face-to-face and word-of-mouth recruitment, as well as encouraging peer-to-peer recruitment.⁸ But these were very labor intensive methods, especially for small, already-stretched staffs. It is notable how CTCs, despite their basic technological capability, were unable to rely on the communication advantages of technology to reach their target audience, because of the disparities experienced by those they were trying to reach.

Technology emerged as an issue in other ways as well, such as transportation. For youth that came to the CTCs from farther away, paying for public transportation could be problematic (as well as traveling/walking in unsafe areas after dark). Though there were city programs that subsidized youth travel, this was limited in many ways – such as the fact that free travel ended at 8pm. Consequently, it could limit youth involvement in community programs.

Other Obstacles

The lives of low-income youth provided other obstacles to participation that staff recognized. Home lives were often unstable in ways that could hamper youth involvement. Nancy even reported the difficulty of getting “snail mail” to youth in public housing developments because youth might not have written their addresses correctly, because the postal service did not prioritize mail delivery in such neighborhoods, and because

⁸ This type of recruitment also cut through some of the noise of technological communication that allowed youth to ignore/miss communiqués from adults.

complex family arrangements may mean that youths' names didn't match the name on the mailbox.

Families themselves could be supportive of youth involvement, but they could also pull youth in other directions, such as when teens were needed at home to take care of siblings, or if youth felt pressure to get a "real" job in order to help out the family. Sometimes families just seemed resistant to youth participation in community programs that they didn't necessarily understand; such participation could be perceived as a waste of time. As will be examined in the next section, gender was also a factor, as some families, especially from close-knit and conservative ethnic communities, preferred to keep girls close to home.

These circumstances could make it difficult for a young person to maintain a commitment to the CTC, even with the structure of employment. It could be difficult for a youth to fill out an application, make it to an interview and present himself well in order to secure a job, let alone show up consistently and on-time, if he had never experienced such expectations before. While TLP worked to be supportive and instructive in this area, there were instances where a youth's inability to fulfill his job requirements led to him being asked to leave.⁹

Getting Youth to "Appreciate" the CTC

Though adults worked to recognize and validate youth-centered agency, they still wanted to draw youth into the center's missions. In this way, they often struggled on a

⁹ Difficulties in other areas, like school, could also hamper involvement, such as when James (Asian-American, Working-Class, 17) had to drop out of his second summer in The Learning Program in Summer 2009 because he had to go to summer school. Struggles in one sphere of a youth's life made it more difficult to maintain participation in other areas which were beneficial to youth who struggled with traditional educational environments.

daily basis to reconcile their own visions of how best to enact processes that would lead to social change in general, and how to provide bridging capital in particular for individual youth, while still honoring the critical pedagogies they embraced, which sought to empower young people by recognizing their agency. One recurring discursive mismatch that led to frustration for the adults was their wish for youth to recognize the space of the CTC, and its available resources. They wanted youth to appreciate what the center had to offer them, rather than taking the space for granted and “wasting” the opportunities presented to them there. Though recruitment in terms of bringing bodies into the center was a basic goal, its accomplishment was merely a precursor to the daily management of expectations between adults and youth and the daily struggles to work together to produce outcomes which satisfied all parties – sometimes successfully and sometimes not.

The adult staff often felt frustrated with what they regarded as certain attitudes and expectations youth had towards the CTC and the adult staff members/instructors. Staff had a general assessment of youth not being interested in structured, yet creative, opportunities. Rather, they were interested in getting paying jobs within the CTC or else just want to “goof around and bother you” (Marco, Interview). There was a sense that a key to bringing youth in and keeping them coming back was to instill in them a sense of the value of the place, beyond the casual and informal uses the youth came to expect with open internet use and free snacks.

Yet staff felt that youth’s pre-existing relationships with technology, characterized by passivity, shallowness and instant gratification, made it difficult to build that relationship. Staff saw youth in general as tech-savvy consumers, but also saw that as a very lim-

ited type of knowledge which did not naturally lead youth to have a curiosity to understand how technology works, how to build it themselves, or how to create with it. In fact, staff indicated that the manner in which consumer technology is constructed – as making everything easier and instantly accomplished – worked against the CTCs’ presentation of technology projects, which often required intensive, long-term involvement and work by youth to understand the technology and to build a tech project from start to finish. Fred summed up this challenge echoed by several staff members:

“My observation is that the kids are very fluent when it comes to how to use their phones and their iPods or other little music type players, and how to quickly text and send images to their friends. But when it comes to producing something of their own...I don't know if its fear, ignorance, or just laziness that they just don't have that curiosity of how to really manipulate an image on Photoshop or edit a video or use the camera. They'll do it but just enough to get the project done. It's a bit disheartening. I mean, I would hope that they would be more curious but again I think a lot of times...the challenge is to get them from consuming to producing. So they're fully engaged with their phones and their iPods or whatever other brand they have, to consume and to play around with those and use all these features on them. But when it comes to actually doing something creative with them, that's the challenge.”

Though youth have technology woven into their lives and are intimately familiar with it, this familiarity breeds a complacency, a surface level acceptance of technology, that staff feel they are working against. Thus staff felt they were often working against seductive external discourses and structures of technology consumption and use, and that it was a formidable task to alter the perception of youth who relied on black-box technology, in which they were not required in their day to day lives to understand how the technology works in order to use it and benefit from it.

Daily Challenges

What becomes evident in these informal and open learning environments around technology is that they were not technological utopias enacting their missions and goals

for youth in ways that integrated perfectly with youth desires/discourses around technology and youth agency. Rather, adults were both representatives of the center as a structure, struggling to enact their centers' missions, and individual agents who embodied conflicting or negotiated discourses regarding the young people in the center. Both the center as a whole, and the adults as individuals, advocated for recognition of youth agency, but this happened within a larger discursive structure which forced them to grapple with the structural limitations by which they and their participants were shaped and constrained. The dominant discourses and relationships youth brought into the programs were often perceived by the adults as clashing with the goals of the program. In addition, the conditions of having a structured program of some kind required adults to take on authoritative roles of administrator, teacher, and rule enforcer more often than they might ideally like (as opposed to mentor, peer, or supporter), but which they felt was necessary to manage a youth program on a daily basis. In this way, discourses around youth as "at-risk" or troubled, or simply in need of rules and guidance, infiltrated these spaces which were also critical of such discourses around youth.

This struggle characterized many of the daily interactions between youth and staff as well. In this section, I examine how staff characterized and dealt with some of the daily challenges of their jobs, both in terms of the youth and the structural limitations of the CTCs. I also show how staff's efforts to enact their own discourses around Missions and Philosophies in the face of youth's technological desires and preferred discourses around technology was a source of tension and challenge on a day-to-day basis.

Structural Challenges in Everyday Practice

The structural constraints faced by the programs manifested themselves in everyday challenges, especially with regard to accumulating and maintaining potentially expensive and quickly outmoded hardware and software. Though both centers had somewhat stable sources of funding and equipment, keeping upwards of 20 computers, plus additional equipment, up-to-date and running, especially when it was being used and handled by large numbers of people, was a constant burden. If there was a lot of freedom for users to download programs onto computers in the center, computers could be riddled with viruses or simply cluttered with documents and programs in a way that made it slow or difficult-to-use. Especially if CTC users had not received any digital literacy pedagogy about how to safely use the internet to prevent viruses, maintaining computers could be a very difficult task. This sort of maintenance usually involved going from computer to computer, a labor intensive task.

CTCs tried to have security and anti-virus software on computers, so that users could not download from the internet and save to the computer without permission and so computers would identify and isolate malicious programs. This required obtaining free or paid anti-virus software. Obtaining costly software and licenses was generally prohibitive for any CTC, as software could be extremely expensive for one license, let alone 20 or more. The availability of free and open source software was extremely important to the centers and shaped not only their ability to maintain their computers but also the programs they could offer. In this way, CTCs are not only aligned with the Open Source movement ideologically, but also practically. They embody the necessity for freely available software with full capabilities in order for underserved populations to engage in creative relationships with technology. TLP built open source software like Open Office and

GIMP into the program. Using open source software also enabled them to bring their program elsewhere since these programs could be installed on computers in other centers.

The one commercially-licensed program they used, Hyperscore, was phased out because of the limitations inherent in continuing to use it:

“Well, we had 100 licenses (given to them by the company) and then what happened was, you have to activate over the internet...and they gave us 100 licenses but I can't deactivate a license remotely. I have to go to the PC that it was on. So let's say the PC's at a community center and they wipe out their harddrive and re-install, or they throw out the computers and get new computers with a new grant or something. That license is lost so we're down to, I dunno, 20 licenses or something and we're just...not on a lot of computers at the center, I dunno. It's definitely a hindrance.” (Jon)

It was not just a financial issue for the center; this incident highlighted the complexity of providing software for other CTCs with their own computer issues. Valuable licenses were lost as other centers struggled to maintain their centers. The community-based philosophy embraced by the program also opened it up to vulnerability through its links to other centers with similar issues, but separate and independent finances and decision-making structures.

The Daily Challenges of Youth Creation: Discourses in Action

On a day to day basis, staff were constantly trying to balance youth's freedom to engage autonomously with technology with the structure and aims of the program which represented adult-directed discourses around youth and technology. Often, adult's perception of youth's consumer and leisure-oriented uses of technology as presenting barriers to creativity and engagement set the stage for staff to engage in moments of tension over appropriate engagement with technology, and with the space of the center in general. In these moments, we see how adult discourses around youth and technology can

emerge and operate in opposition to youth desires and agency in ways that lead to tension, even within an environment that was fundamentally interested in supporting agentic youth creation.

Both the audio and film instructors at TFP indicated that they felt that youth often viewed them as their own personal producers, rather than being interested in taking the reins of tools required to create their music video or rap album. In the studio, Daniel was willing to show the audio production process to youth and generally tried to explain to them what he was doing. A few youth did take on the role of producer. But in general, the scene reflected that of a performer and his producer, with Daniel attempting to coax better performances out of youth and then producing a track for them that sounded as professional as possible. Youth often had opinions about how their recording should sound, based on their favorite artists and trends, or what they thought “real” artists did. Here, Daniel talked about trying to convince a young man that he didn’t need multiple layers of vocal tracks:

“Diego came in and said, ‘You have to record me like, 4 times!’ He just thought it was a rule. And he had one of his songs so cluttered. He was like, ‘No, we gotta do that 3 more times.’ I was like, ‘No we can’t do it 3 more times.’ I was like, ‘This song already sounds a mess. Like, it’s cluttered. You can’t do it.’ He’s like, ‘Nah, but the guy at the other studio said you HAVE to.’ I was like, ‘No, he didn’t say you have to. You made that part up. It’s a good idea to do it *sometimes*.’”

While Daniel tried to correct what he saw as misconceptions about the production process, he generally ended up being the one to implement the fix for the youth. This connects back to the earlier discussion of a black-box relationship to technology for youth, but also incorporates the draw of the notion of the celebrity performer who is not expected to work behind the scenes, which Daniel saw as a common aspirational identity for these youth – one filtered through popular culture. Daniel understood that many of

these youth aimed to be recording superstars and that the recording studio was a space for them to practice and enact this identity, which partially explained the studio's popularity among participants. The adults also felt, though, that youth saw performing as more fun than the hard work of media production, and that many of them opted out of it when they could get one of the instructors to do it. Daniel and Fred gave into this to some degree in order to keep youth in the creation process at all, but expressed frustration about the difficulty of engaging youth in the technical aspects of production process with the same enthusiasm they applied to the social and creative process of writing and performing.

On the subject of music creation software, Daniel also expressed annoyance with programs that have emerged to give people the illusion of creation while teaching few of the underlying principles, in terms of musical or technical creation and production. Other adult staff, especially those in more administrative and supervisory positions, seemed happy with any efforts at creation by youth, both because of their desire to have youth produce in general, and because of the funder-driven need to show results. In addition, some instructors saw the use of "simple" and easy-to-use computer programs as a way to instruct and encourage less-skilled users in technology with less-intimidating interfaces. But Daniel, drawing on his own extensive experience in audio and music production, saw the beat-making programs in use at the center as simulating creation in a way that led to passivity, and a surface understanding of production:

"It aggravates me because these kids aren't really learning too much. I mean, it's just, it's training wheels. All this stuff is training wheels, and after they get done with the training wheels, they keep riding the bike with training wheels, and then suddenly their grown men on a bike with training wheels... Like, all the samples they have are all cleaned up, they're all panned out, they're all just professionally adjusted... So if you play out these melodies in a certain way and just sample them and just leave them like as pieces of a puzzle, you can mash 'em together however you want and they're just kinda gonna fit. And that's what the kids do. But I'm

like, if you ever gave them actual beat-making equipment. Not beat-making equipment, but if you gave them raw materials, they're not gonna be able to do much with it.”

Youth end up making beats that sound exactly like the beats made by anyone else using the program because they are all using the same building blocks – similar to assembling a “hand-made” item from mass-produced parts. From Daniel’s perspective, these programs were technology “training wheels,” which youth weren’t likely to abandon if they were not pushed past the “beginner” programs to more “authentic” creations. This “authenticity” was defined loosely and imprecisely by Daniel, but seemed to reference an earlier period of music production when beat-making was a grassroots, urban creation, before polished and packaged “beat-making programs” were made available by mainstream software companies. Even though Daniel was not that much older than some of the youth he instructed, his authoritative position within the program positioned him in a way to discursively frame youth creations as less authentic and creative – ironically, creations made via the resources provided by the program. He felt that the software used for music-making led to a shallow understanding of the technology, which further led to a limited creativity engendered by such programs.

Though these sorts of critiques by adult instructors were limited to personal opinions expressed in interviews and conversations, and were not directly and explicitly expressed to youth, the presence of these frustrations pointed to the presence of a discursive gap between adults and youth even within these supportive learning environments.

Adults’ visions for how youth would interact with this space often clashed with how youth themselves wished to interact with the space. Adults then engaged in negotiations with youth on a daily basis, trying to influencing their creative process when possible

while honoring the youth's interests and desires around creative production. At the same time, adult instructors battled internally with their own preferences around how youth "should" create and produce – preferences which connected back to their personal philosophies and visions of how best to enact program's mission. These philosophies proved to be impractical or overly idealistic in practice, i.e. when interacting with individual, diverse, and agentic youth.

Distractions and Restrictions

Another way in which the intersection of adult discourses around youth and technology intersected with youth discourses became evident in restrictions and rules set up in the spaces, intended to direct youth's uses of technology in particular directions, and away from those uses deemed "wasteful" and "less productive." As staff worked to keep youth focused on projects and uses in line with CTC missions, they saw themselves as dealing with a constant barrage of distractions for youth, in the form of personal tech devices, computers, and the internet, which needed to be reduced and managed. This often led to attempts at restricted uses – with mixed results. While in agreement over the level of distraction, staff expressed wide disagreement over the best approach to some aspects of these issues.

Youth bringing their own personal tech devices into the center was seen as a distraction. Cell phones were the main target as youth used them to constantly socialize via text messages and chat. Adults viewed this type of use as dependence on the part of the youth – a dependence encouraged by the fact that these devices were very portable and easy for youth to keep on their persons at all times. As Patricia noted, "They're addicted to it. If it's in their pocket and it vibrates or something, they can't not answer it... it's just so hard for some of them." The Learning Program, in an attempt to limit this use during

working hours and to emphasize to youth that personal distractions weren't acceptable while they were on the clock, made it a fairly clear-cut rule that such use was not allowed during working hours. Even with this understanding, many youth would turn to their devices when they had a spare minute, which would lead to chastisement by adults and perhaps confiscation of the devices. By constituting it as a violation of their job agreement, however, TLP did manage to attach a degree of severity to such distractions that youth took the injunction fairly seriously. Jon felt that this improved over the years as it became ingrained in the program culture and returning youth teachers modeled behavior for new teachers; Jon believed that youth lived up to the responsibility expected of them. At the same time, Patricia, managing part of the program on her own for the first time, mentioned it as an issue but still qualified that it was not as bad as she thought it was going to be. She credited the system of demerits enforced by the main program, from confiscation to probation to docking of pay, for such infractions.

Other distractions identified by adults involved the computers and internet access that were already available in the center. Here, staff often entered into complex negotiations and give-and-take with youth to ensure that youth engaged in staff-approved activities, while allowing youth some freedom to do what they wanted. A particularly difficult issue arose with regard to censoring or blocking of certain types of computer or internet use, because even though certain uses were seen as a distraction, blocking sites completely could also hamper creative and productive uses of technology by youth. Blanket restrictions or rules were sometimes regarded as a necessity, but they were not regarded as perfect or desirable solutions. Adult staff recognized the blurred lines between productive/consumptive, and active/passive uses of these tools by youth. Adults made decisions

on a daily, and momentary, basis based on what they determined was necessary to lead youth to be productive on a given project. Because of constraints tied to their identities as representatives of the center, rather than of the youth, staff often had to create these rules and restrictions in opposition to youth desires.

The simple availability of computers and the internet in the CTC was regarded as a distraction for youth. If they were supposed to be working on a specific project on a computer, it was easy for them to open up a browser window or a chat program. What youth seemed to regard as efficient multi-tasking, adults saw as a dispersion of focus. In addition, youth were adept at quickly moving between windows, minimizing them, and generally concealing from adults the extent of their activities, beyond the center-sanctioned project on which they were ostensibly primarily working. One solution was to move the computers out of certain spaces so they were simply not available to distract. This led to computers being removed from the recording studio at TFP, for example.

Daniel complained about the computers shortly before this:

“There's 3 computers in the studio, the one I work on and there's 2 on the other side of me. They're just a nuisance. All they're good for is, so one kid can show the other kid what they found on the internet and they can show them by talking to them. "Yo, check this out yo!" While someone's trying to record! It's just a complete distraction.”

With this sort of solution, adults sought to direct youth to focus only on the technology needed to perform the task at hand, rather than having a lot of technology generally available to everyone at all times.

This sort of restriction was not feasible on a large scale however, as computers and internet-access were necessary for many projects. Unfocused leisure-based internet

use remained a concern, both in terms of it being non-productive and passive, but also because of concerns over internet safety and youth's access to potentially inappropriate content. Staff understood that social networking loomed large in youths' lives and somewhat respected it as something important to them and as something that drew youth to the center. These mixed feelings led to differing opinions on whether the Internet should be restricted and how much – feelings that I trace back to the multiple roles adopted by adults within these informal learning environments, their close connection to youth culture, and the “least-adult” status some staff occupied, as well as adults' own heavy involvement and inhabiting of heavily socially-networked worlds. Thus, the answers to these dilemmas were not clear-cut, nor did they remain constant.

At The Free Program, Marco implemented software that blocked Facebook and Myspace as well as blocking objectionable content. He said the main rationale for this was the difficulty of regulating what youth do in online environments, both in terms of content and for the sake of productivity. But this also made it difficult to use these sites for “legitimate” uses, such as uploading a creation or pulling personal pictures from a site for use in a project. In some instances, Marco would alter the block so these sites could be temporarily accessed, or youth would be allowed to use staff computers that were not blocked. He also experimented with incorporating Myspace into an html programming class, hoping kids' interest in the site could be connected to learning how to create webpages:

“To a certain extent that works but then they just go back to chatting with their friends and forget about what they're supposed to be working on. So I think it's better to just teach them HTML without the MySpace stuff and then if they want to go mess around with MySpace at home, fine. It's up to their parents to kind of deal with that. But they don't have to learn HTML through MySpace necessarily.”

Access to SNS and learning programming was seen as an incompatible combination here because of the distractions presented by such sites. At The Learning Program, internet access was not so regulated, possibly because there were more people working on many more projects at any given time, but, as mentioned earlier, the expectations of employment served to structure for youth what sort of internet use was acceptable when, without consistent adult admonitions; it provided a structure for self- and peer-surveillance by youth.

Yet, there was not a single, unified discourse agreed upon by all the adults within a given center. Even though Marco was given wide-berth to do as he saw fit with internet access, others weren't necessarily on board with the decision to limit internet access at all. Others felt that, if these were the activities youth wanted to engage in, then it should be allowed as a way to draw youth to the center (which tied into recruitment challenges as well). Otherwise, these adults believed, young people were just going to go where they could access these sites. It was better, within this discourse, to get the bodies into the center any way they can and then try to direct their use. It is notable though, that this strategy does not represent a fundamentally different discourse, i.e. one that seeks to validate and activate youth agency and autonomy around creation and production. Rather, it remains practical and pragmatic, and originates from adult's perceptions of "typical" youth behavior fused with the basic structural constraints of needing bodies in the centers, regardless of their activities.

In addition, there was disagreement over the CTC's responsibility in terms of internet use. Though Marco's quote above indicates he thought supervision of internet use was a parental responsibility, Diane preferred having youth using the internet on the

desktop computers in the center, as opposed to their personal devices, so she could keep an eye on what they were doing. Here, the adults expressed different levels of investment in the discourse of “at-risk” youth in need of supervision on the Internet, yet both still reinforced this discourse in general.

Another argument against restriction was that youth often knew of ways to get around the blocks, sometimes in surprisingly sophisticated ways. In this way, the blocks were seen as ineffective anyway, and the time and effort youth spent trying to get around them could be better spent on actual projects. Youth knew how to access proxy sites to get on Facebook and Myspace. They also knew of alternative internet-based chat programs, like Meebo, which allowed them to use their AOL Instant Messenger accounts without downloading the software. Staff also knew that youth easily got around the age-based restrictions built into social networking sites like Myspace, Facebook and Youtube by simply lying about their age. These occurrences showed just how difficult it was to limit and control youth’s agentic technology use, as they proved time and again that they would and could work to get around adult controls and constraints. Adults often came to accept that “giving in” a bit, both to get kids in to the centers, but also to supervise and direct their use, was perhaps necessary and inevitable, if not ideal.

Still, the adults maintained the belief that given the chance, this sort of social use, video watching, and game-playing was ALL that youth would engage in – the sort of “hanging out” which is not viewed as “productive use” in more traditional pedagogical discourses around youth and technology. The adults believed youth mainly interacted with technology in these ways outside of the CTC, and they worked to make the CTC a space where youth would have interactions with technology that, even if built upon

youth's outside interests, would be in some way different or expansive upon those uses. How or whether to transfer those interests to activities more in line with the CTCs' aims was less clear to the adults, and led them to try several different approaches, and to disagree on best practices. These spaces of digital creation did not get established based on clear and agreed-upon discourses, nor were they achieved by consensus among the adult staff. Rather, it was a daily and constantly shifting creation involving negotiation and compromise around various aspects of the digital learning environment between adult staff members, intersecting with the structural constraints of the environment and the agency of youth participants.

Public vs. Private: Youth and Technological Vulnerability in a "Safe Space"

Another set of discursive challenges faced by staff had to do with various issues around the public nature of the social technology embraced by the youth, as well as community-centered nature of the CTCs. Though both of these characteristics encouraged the youth to use technology in a public manner, there were concerns that connected to the youths' status as an "at-risk" population. Having youth engage with technology in this manner had the potential to expose them and make them vulnerable in ways that needed to be managed and reduced. Even though young people are seemingly inured to and comfortable with the always-public nature of the social networks which they enthusiastically participate in, and this sort of personal sharing online is "increasingly central to youth's everyday communication and identity construction," the adults at the center, in their supervisory role, felt the need to be cautious regarding youth's safety and privacy online, especially as they engaged with the internet in the quasi-public space of the centers (Horst et al. 2010:47). While these were supposed to be open and informal learning

spaces, they were still constructed as safe spaces for youth – a safety which would presumably extend from the physical space to the online space.

Yet safety and security in the physical space was an issue that required adult intervention as well, highlighting that the “digital” characterization of technology is never completely disconnected from material concerns. Theft of technology, both belonging to youth and to the center, happened occasionally and had the effect of temporarily cooling the atmosphere of trust and community within the centers, and led staff to introduce more stringent rules regarding who could be where in the center. When these incidents occurred, it was always another youth who was suspected and named as the culprit, both by other youth and by staff. The ease of theft connected to the communal nature of the CTC, where technology was freely available, where youth often left their devices lying around as they moved around the center, and where sharing of technology was common. Incidents of theft often caused a short-term change in this relaxed attitude, challenging beliefs in the discourse this “safe space” both for youth and adults. Youth who had their belongings stolen not only lost expensive and symbolically valuable personal items, but also, at least temporarily, lost trust in the center and in their peers who may have been, or brought in, the thief. For the adults, theft of items from the center represented a loss of resources from the center and a breach of trust with their young charges. Feelings of distrust and suspicion, both between adults and youth, and between peers, were highly disruptive to the sense of community the centers were trying to create. The adults felt forced to take on more authoritative and punitive positions in the aftermath of these incidents, pulling back from “least adult” roles.

These incidents could cause a permanent rift in young people's relationships with the center, such as when Hai had his Playstation stolen, which he regularly carried in a backpack to the TFP center in order to play on their high-definition monitor. After this incident, Hai became a much less frequent visitor to the center. Partly, this may have been because his main reason for visiting was missing, but it was also clear that he was unhappy with the center in general and the other youth, one of whom had been the culprit (and who was never identified), after this incident. The status of this space as safe and as "his" to use was permanently altered as a result of this personal violation he experienced within the center.

Though the adults added rules and restrictions after incidents of theft in order to preserve the space as safe and secure, staff felt the sense of security and trust could be recovered over time as long as there were no new incidents. Which discourses took precedence at any given time between adults and youth could thus change over the course of weeks and months, as a result of disrupting incidents which revealed vulnerabilities for both adults and youth within these communal spaces. In the immediate aftermath, there was a reflexive fall back on adult discourses which framed youth as both "at-risk" and as potentially criminal – discourses which temporarily subdued and limited youth agency and autonomy. Ultimately, however, staff wanted to return to a more open and trusting environment, as they were extremely invested in creating a safe and trusting space in the centers. They also sought to validate youths' losses and experiences of vulnerability within the centers. The staff took youths' theft reports as seriously as possible, including aiding young people in reporting thefts to the police. Beyond making individual youth feel safe and welcome, staff wanted to maintain the image of the CTC as a safe space –

one that was technologically rich in resources, but also one that was respected as such by the youth in the community. If youth respected the center, understood its value to them, and felt invested in it as a member of the community, then, it was hoped, it was less likely an individual young person would see stealing from the center, or a peer within the center, as an acceptable course of action. Developing a true community within the center, which incorporated youth as trusted and full members in these communities, was dependent upon mobilizing these discourses in practice in the daily life of the center as often as possible. Yet, events which revealed the vulnerability, both of the youth and of the centers, temporarily disrupted these desired discourses.

Youth were also potentially made vulnerable when they were sent out into the community with technology, as in The Learning Program. In one incident, an all-male teaching-group was jumped while visiting a housing project, and their cell phones were stolen. As a result of that incident, Nancy said, they learned to send out mixed-gender groups of youth teachers into the more high-risk areas, because they were less likely to be targeted than all-male groups. Here, gender and technology were linked as young men of color were identified as more “at-risk” for encounters like this while they were attempting to publicly practice community technology. Due to external constraints like this, the program was forced to alter the way in which it enacted its engagement with the community in a way that proscribed certain possibilities, i.e. that a group in the community would be taught by an all-male group from the community.

Finally, there was a vulnerability associated with getting youth to create projects and content intended to be shared via social media, or with an online public that could be very large and anonymous. One goal of the CTCs was to share the work being done by

youth with a larger audience and to garner positive attention for the program. The tools that make up Web 2.0 tools made it possible to do this far beyond the local community. Usually, youth were eager to share content with the world via Youtube or Myspace. While this type of expression is valuable for allowing low-income and “at-risk” youth to have a voice, such sharing also has the potential to place youth in a vulnerable position or deliver other unanticipated consequences for which the adults felt they would be responsible. In these situations, adults took on a protective, parental role which mobilized the “at-risk” discourse as applied to youth engagement online, while still trying to maintain the mentor role which encouraged youth to create and share their work with others.

Activities encouraged by the center could also put youth in a vulnerable position, by encouraging them to make very personal projects, including digital stories or documentaries, in which they divulged sometimes intimate thoughts and information. This occurred in the incident described earlier in this chapter, when Kyle created a very personal film but did not feel comfortable sharing it with a wider audience, for fear of the reaction of unknown audiences. I found it to be very illuminating when young people, who were otherwise very confident in their use of the internet and social media, hesitated to share. These moments indicated that, in some way, this thing they had created through the center was somehow different from their usual engagement with technology. This spoke to the success of the program in its ability to produce a new set of relationships between a young person and technology, and which allowed the participant to express his voice in a poignant and thoughtful manner, using the tools and resources provided by the program. Yet the youth participant was not always able to comfortably resolve the personal nature of this creation with the public sharing that the digital nature of the creation seemed to

make natural. Adults then often needed to balance their desires both for the youth to share an important personal creation with a wider audience, and for this project to represent the program more broadly, with sensitivity to the youth's sense of exposure and right to decide, as an agentic individual, how or if his creation was shared with others. In this case, the film might have reflected well on the center, but Fred capitulated to Kyle's sensitivity about making his technological creation public, even if initially it was conceived of as a public project.

These moments illustrate the difficulty of invoking full participation in idealistic discourses around technology even with youth who entered into the full spirit of these programs. Staff embraced a progressive discourse around technology and the internet that viewed its public-ness as beneficial for young people, especially those whose voices were marginalized in mainstream society. But they were also forced to reckon with discourses that framed youth's participation online as risky. Interestingly, however, within these spaces of situated learning, adult discourses were not only shaped by mainstream discourses around youth's technological participation largely dominated by adult voices; in responding to youth's resistances around sharing, the discourses in circulation within the center were also influenced by youth voices. It was not "riskiness" as defined by adults (about young people's participation online) but rather youth's own sense of what they felt was risky in terms of their participation online, thus validating their agency.

Beyond simply invoking authoritative and protective discourses around youth, the adults tried to ensure that public exposure was safe and comfortable for the youth, and reflected their desires about how to participate in the public space of the internet. This required acknowledging and validating youth's concerns about their creations, even if the

staff found it frustrating to be unable to share a promising project created within the program. This sensitivity is potentially more important for the low-income youth population involved in public technology programs such as these than for more privileged youth, because they may be at increased risk for exposure and exploitation; something to which these “safe spaces” do not want to contribute.

Staff and Gender: The Co-Creation of Inequality

The previous sections of this chapter have illustrated how the adult staff play a critical role in the creation of the digital learning space as they balance and negotiate structural constraints and agentic youth. In the remainder of the chapter, I offer a closer look at the staff’s efforts to grapple with gender disparities within the center in order to show how dominant discourses around technology enact structuring power within these spaces in ways that are difficult to combat. Despite conscious efforts to correct for gendered disparities in technology participation and digital creation, it proved very difficult to create a space that combated these disparities, or even to solicit girls’ participation on an equal level to boys’. Through a particular focus on gender within the programs, I show how the ecologies of these programs are inextricable from the new media ecologies adults and youth participate in everyday, ecologies which incorporate hegemonic ideologies around gender, race, and class.

When it comes to girls’ participation in computing and technology, the centers face a number of challenges connected to larger conceptions of technology as a male-dominated interest and discipline (Seiter 2007). Studies have found that boys and girls respond to social messages around the use of computers, which provides significant incen-

tives and disincentives for engagement (Seiter 2007). Recognition of the need for particular strategies that target girls, such as the specific recruitment of groups of girls, has begun to emerge within digital learning. This helps prevent feelings of isolation or incompetence experienced within male-dominated computer courses, and is tailored towards girls who may be drawn to technology as a social activity, rather than a skill-based one (Margolis and Fisher 2002; Seiter 2007; Cunningham 2011). The presence of female role models is also a key resource for girls that allows them to identify alternatives to the image of the male “hacker” or computer programmer (Seiter 2007:59-60).

Though digital learning initiatives may incorporate these techniques, gender inequality and dominant discourses around girls and boys in technology are often recreated within these spaces. Programs and their staff are often limited by their own problematic understandings of how gender plays out within their programs. Though programs focus on technological literacy, they generally don't specifically interrogate, and work into their pedagogy, a deeper understanding of how technological literacy could increase gender equality. In addition, there are often gender, race, and class differences between female participants and instructors that may influence girls' participation negatively (Cunningham 2011). The masculine construction of technologies is seldom questioned or critiqued within these programs, especially if gender is not a main focus of the program. When centers are struggling with the many issues already documented here, a focus on gender generally falls low on the list of priorities. Yet this underrepresentation of females has reverberations for girls' sense of inclusion. For instance, Cunningham found that game design and teaching styles, within a video game programming class for girls, conveyed normative assumptions of femininity, and failed to recognize diversity in the forms

of participation taken up by girls. Examining the particulars of girls' participation within these programs, or lack thereof, can challenge and extend the goals of these programs. Yet this requires a greater understanding of why girls, especially those who also experience their identities as intersecting with race and class, participate as they do within these programs. Here, I examine how the adults understood and incorporated gender into these spaces of digital learning in ways that at various times recreated or ameliorated gender-based inequality within them.

The intersection of gender and technology had implications for the staffing of the CTCs and thus for staff members gendered interactions with youth and their efforts to recruit youth into the center. Specifically, I highlight here how gendered staffing patterns and staff's gendered understandings of technology shaped the programs and their participants. While there were attempts to bend and break gender stereotypes around technology, and a general recognition of the need to attract and involve girls, there was also deliberate and unconscious (i.e. by default) gender segregation in the programs, especially at The Free Program. While the CTCs were progressive in many ways, the lack of examination of gendered uses of technology often put the project of specifically encouraging girls' use of technology on the backburner. Youth agency and desires also affected efforts to include girls and integrate around gender, as did the lack of female staff to act as mentors and role models around technology.

While there were a fair number of female staff at both centers, they were outnumbered by the men. Moreover, men were much more likely to be in instructor positions while women were more likely to take on administrative positions. While teaching is typically feminine job, the nature of these teaching jobs as technology-based seemed to mark

them as masculine positions. The positions taken on by men and women within the centers generally corresponded with the backgrounds of the staff members; those with technology skills became technology instructors while those with administrative or educational backgrounds became administrators or project coordinators. That men tended to be the former and women the latter seems to be an effect of trends in gendered job selection.¹⁰ However, this was also the case for female staff who had technical backgrounds themselves and who certainly had the skills to serve as technology instructors – most notably Nancy, who had an engineering background. While she had a bigger role as an instructor in early years of the program, she had moved into the coordinator/administrative position because, it seemed, she was needed there and because she had the “natural” talents to act, as she called it, as the “glue” of the program. It was hard not to see this as her moving into a more typically feminine position as well, as the caretaker of the program of the whole and of the individual youth as she attended to their various issues during the program.

Searching For Female Role Models

Nancy and other staff were aware of the lack of female role models in the world of technology and wished to address it. Certainly, TLP made a concerted effort to bring girls into the program. Nancy was explicitly concerned with having role models for the young women – not just female role models, but women of color in particular. Patricia, who was white, was a welcome addition at the Roslindale hub, as she also had a technical background. In Summer 2009, TLP brought in a few female speakers – women who were

¹⁰ There were some exceptions such as Maria, who taught the young children at the after-school program at The Free Program. Still, the fact that she was in charge of the young children seemed to put her in a childcare position crossed with technology education. The instruction of more advanced technology to older youth was generally still male.

involved in various creative technical projects – to share their expertise with the youth. One of them, an African-American woman who specialized in technology sewn into clothing, stayed on as a mentor to the boys in the “Corruption in Authority” LED T-shirt project (featured in the next chapter). While women such as these certainly existed, it was another struggle for the centers to find them and solicit their commitment to the program. Just as it was hard to find committed staff in general, finding technologically-skilled women, let alone women of color, was an added challenge. TFP, with its less-structured approach, was less able to provide female role models and less likely to reflect on and strategize around this disparity. In general, they were more focused on getting staff and filling positions with the best person they could find, whoever that may be. That this was generally a male applicant for technology-instruction positions was not surprising.¹¹

Employing Maya in Summer 2009 was another effort by Nancy to provide another female role model of color. Yet her presence and participation in the program, which ultimately “failed” as it was decided she was not a good fit for the program, reinforced some of the gender divides her inclusion was meant to break down. Maya was an artist, and one who made distinctions between art and technology, even though she herself used technology in her art at times. She was brought on to take on some of Nancy’s overwhelming duties, especially those involving day-to-day oversight of the youth. From the start, she was brought on as another feminine caretaker/administrative type. But she was also involved in helping youth with their technology lessons, and was supposed to inject a more artistic and design-based sensibility into youth’s projects. While Maya was

¹¹ There were a few times when female tech instructors appeared. In addition to Maria, there were a couple of female college interns and volunteers, including an audio production student from a local college. However, I only ran into these women a few times during my fieldwork. They generally worked with the boys who already frequented the studio rather than working to recruit girls.

adept at GIMP, the imaging program, she was new to the other modules and had a steep learning curve. At times, she was often behind the youth in terms of familiarity with the modules and was not necessarily able to help them. She also felt stressed by the daily schedule, which was not her preferred way of working. While she was able to identify good things about her involvement with the program, she ultimately came to the conclusion that the relationship with technology cultivated by the program was not for her:

“Something that I really understood was that, as much as a consumer of technology that I am, I'm not particularly interested in creating it. Like, I'm ok with just being a consumer. It was pretty cool to see how it was made and how excited the youth that were learning about it were about making it. My interests are elsewhere. I'm a visual artist and that's my focus... I think I'll stick with my hands on, manual sense of doing things, which is what works for me I think. But also the hands-on teaching and working with youth, that's where I'm at.”

Though it is not clear that Maya, as one role model, influenced youth's ideas about gender and technology, her “failure” as a female role model around technology and her inability to buy into the mission could be understood as gendered, and reinforcing mainstream discourses around gender and technology. Specifically, Maya's identification as an artist, and specifically as an artist who did not feel a strong connection or affinity for technological creation, emphasized gendered divisions between art as feminine and technology as masculine – a division which was reinforced by her departure from the program. Maya's identification as a visual artist and her “incompetence,” as a technology instructor – identified both by herself, Nancy, and the students – did not need to be the end result of her employment at TLP. None of the parties involved were able to reconceive of her participation in a way that resolved Maya's orientation towards creativity and production with the goals and methods of the program, and thus one of the few female role models of color brought into the program left. However, there was another way in which TLP

did manage to supply strong technological female role models and this was from within the program itself, as new youth teachers became returning youth teachers. The young women who graduated and grew within the program became role models for incoming teachers as well as for the young children they interacted with throughout the city.

Recruitment of Young Women

When asked about why there were not more teenage girls in regular attendance at The Free Program, some staff expressed befuddlement and a sense that that's "just the way things are;" that boys were more likely to become familiar with the center and to come around regularly, while girls were simply less interested and choose to do other things. A closer look reveals the manner in which this disparity was structured by gendered attitudes towards technology, both outside and within the center.

The lack of girls was part of a cycle of constructing technology, and thus the technology center, as a male-dominated space. The explanation by staff – that boys were more involved and active because the program activities more naturally fit in with boys' interests – led to acceptance and reinforcement of certain activities as "boys' activities," especially those around audio and film production, computer repair and programming. The supposed "naturalness" of the definition of the space left little room for alternative definitions that might be more inclusive to young women, who were then less present in the center, which was then also attributed to their lack of interest. Staff were aware that a male-dominated space was likely off-putting to girls and created a "boys' club" that girls did not feel comfortable participating in actively. This was true in the recording studio where girls often accompanied boys but rarely recorded themselves. Fred noted this passive stance of girls who did come into the center:

“The girls... It's interesting, they just stay on the periphery. They'll come by, will play with the computer, they'll come by to see a boy or hang out, but they really won't produce much and that's always been an issue, a big one.”

He and others saw this environment as something that needed to be changed, but it was not at the top of the list in terms of program concerns for staff. Though staff could understand girls' “legitimate peripheral participation,” in which girls get sidelined during learning experiences in ways that reproduce gender hierarchies (Cunningham 2011), as an issue the center could probably do more to change, they also saw girls' participation as a result of youth's individual choices and larger gendered social patterns that had little to do with how the center and the program itself was structured.

There were also external social forces around gender that constrained recruitment of young women into these programs. Staff identified outside obstacles to getting girls into the centers, most notably familial expectations and obligations for young women that did not seem to be as constraining for young men. This often connected to differing cultural expectations for girls in strongly ethnic communities. Diane, for instance, understood that the preponderance of Asian-American families at The Free Program resulted in more boy children than girl children in the community in the first place, and that ethnically Asian families preferred girls to stay closer to home and not participate in as many after-school activities as boys. Nancy faced a similar struggle in getting Aida, who was from a conservative Ethiopian family, to be allowed to do TLP, and spent many hours on the phone with her father convincing him to let her participate. While these obstacles had little to do with technology itself, it is possible that parents' sense of a technology space as a male-dominated space increased their apprehension of their daughters' participation. This manifested itself more clearly when Diane talked about her frustration in trying to

get some of the other male staff to work on recruiting young women into the center. It was common practice for staff to make phone calls to families within the housing complex to familiarize them with the CTC and its youth programs. But, she said, male staff stopped calling to recruit girls after parents expressed suspicion about why men were calling their teenage daughters. Here, the weight of gender norms and expectations ultimately had the result of closing up another avenue for girls to enter the center.

Gender in the CTCs

Even though there were outside structural constraints on girls' participation in community technology centers, the programs themselves could often function to produce the lack of participation by girls that Fred bemoaned. Once girls were in the centers, gender differences that persisted were relegated to expressions of "natural inclination." This understanding then reinforced gender segregation with the centers, especially at TFP, where they built employment and technology programs around teens' expressed interests.¹² Thus, in terms of employment, male youth tended to be employed in technological jobs, while female youth tended to be employed in the afterschool program, supervising children. Marco did recognize the circular logic inherent in this organization:

"I feel like all of the girls that come here looking for jobs want to work with YEP [the after-school program] and all the boys want to work with computers, and they're just – we just split them up that way. Maybe we should do like an integration of your crossbreeding-type of program where we force them to try the other person's job for a few weeks or something."

He recognized that something could be done to break down the segregation but still spoke about it in a way that saw the gendered groups in two different camps with their own jobs, wherein the Other could be tried on, but still seen as Other.

¹² At TLP, the application and selection process ensured that there were an equal number of young men and women in the program.

TFP staff attempted to create some girls-only programming that catered to “girls’ interests,” such as the group led by Jude, a male African-American Youth Coordinator. The girls’ group was a singing group that had the goal of recording an album. They also developed their fashion-modeling skills and portfolio, culminating in a fashion show. As in Cunningham’s research, these activities closely hewed to normative assumptions of femininity, as well as a femininity closely integrated with consumer culture. Even though the girls in this group were pursuing creative projects of particular interest to them, it also offered a limited picture of “girls’ interests” within the center, and girls who may not have been interested in such activities did not have another group to join – there was a lack of recognition of the diversity of girls’ interests and engagements with technology. Even this one girls’ group did not enjoy a permanent place in the program’s roster – once Jude left to go to school, there was nobody to pick up the mantle of girls’ programming coordinator.

Here it became clear once again the space of the CTC was by default, a male-gendered space. Offering girls’ programming was one solution, but it was separate and unequal. Its existence was tenuous and less permanent because it was not the default.¹³ Staff lamented that girls seemed reluctant to dig into technology, to physically play around with it in the same way the boys did. But listening to Marco talk about the fun he had building video game systems with some of the boys, and the free and easy bonding that happened with the male youth over the course of that process, it became clearer that girls’ reluctance was perhaps not so wholly internal and natural, but was the result of numerous cues, social interactions, and gender norms embedded in these learning spaces.

¹³ Marco did apply for a grant for a girls-specific technology program but did not receive it.

TLP had a much more equitable gender arrangement because of its application process. In addition, the nature of the program had the interesting effect of requiring both genders to partake in every activity, whether or not it may be understood as gendered task. The boys and girls all had to teach, to program, to craft, etc. at some point during the program. Staff generally believed that any youth, regardless of gender, could excel at all parts of the program, even if he or she entered with some socially-influenced gendered predispositions. Nancy, for instance, believed the young women in the program had a more relational, emotional, and communicative relationship to technology and were less drawn to invention than boys. She saw the effect of the program as altering some of these tendencies for young women and men.¹⁴ Maya saw this as well for the boys involved in the LED t-shirt project, who were being mentored by Nina, an African-American female volunteer who was an expert in integrating technology with textiles, and who instructed the boys in using the embroidery machine in the Fab Lab. Maya commented:

“They were sewing! People were like, they teased them a little bit because they were guys and they were sewing and they're embroidering and their work was amazing. They learned so much, it wasn't just technology, they learned how to silkscreen, they learned how to sew, they learned how to combine all those things with technology and seeing how invested they were.”

Here, a female role-model did not just benefit the girls in the program, but also facilitated new orientations to technology for the boys. This is especially important for low-income boys, because class has been shown to complicate relationships between gender and technology in ways that disrupt common assumptions. Ellen Seiter (2007) discusses how the advantages boys are assumed to have with regard to the masculine association with tech-

¹⁴ She recognized, as mentioned earlier, that more female authority figures and role models were necessary to do this well.

nology are often lost in digital learning environments populated by working class and minority youth (p. 40). In these environments, girls, who more easily adopt the role of the ‘good student,’ often hold the advantage. While I observed that many different youth, of both genders, could occupy roles of “good students” or “bad students” throughout the course of the programs, the boys involved in this project (detailed in the next chapter) were some of the most precariously positioned in terms of their engagement with and performance in the program – until they became involved with this project.

A deliberately gender-integrated environment, which requires all participants to participate in a diverse spectrum of activities around technology, had the potential to minimize gendered distinctions between categories of creation and participation – categories which are often subject to gendered dichotomies, such as creativity and logic, art and technology, or teaching and knowledge-building. In addition, the structure of The Learning Program constructed a pathway that could help youth move past their own embodied notions of gender and technology.

Conclusion

I use gender to show how a specific social structure influenced the spaces of the community technology centers in this study, as well as the discourses around technology engaged in by the adults and youth who created these spaces. Through this example, I focus the broader findings of this chapter which illustrated how the adults within informal digital learning environments for low-income youth occupied important, but complex, positions in creating these spaces. Within their positions, they negotiated, on a daily basis, multiple conflicting discourses regarding the purpose and best practices of the programs. These discourses originated from multiple positions, including the interests/beliefs

of bosses and funders, their own individual orientations and those of their co-workers, and, of course, the youth whose presence was essential, but whose agency and autonomy – its promotion and cultivation, as well as what it looks like – was often a point of contention for the adults who wished to “help” them.

The adults I observed and spoke to within these programs illustrated the difficulty of constructing the ideal digital learning environment, as embodied by mission statements and personal philosophies. The tensions and challenges experienced by the various adults as they sought to create and sustain the everyday and long-term success of the centers and their programs pointed to the complexity and difficulty of creating an environment that is community-based and which seeks to empower marginalized youth, but which is also firmly embedded within larger social structures that constrain and limit how these discourses can be enacted – sometimes in ways that adults are quite aware of, but also in ways that are unconscious in how they recreate inequalities.

Adults also faced constant challenges in relationship to the youth they instructed, supervised, and mentored within these spaces. They worked to create adaptive learning environments, which recognized and allowed for the different interests of young people, while encouraging them to learn and grow in their relationships to technology. But they also had to carefully calibrate and adjust their methods and take on multiple roles, from formal to informal, in order to draw in youth and keep them returning. In spite of these efforts, there were still times when adult discourses clashed with youth orientations in ways that led to tension and frustration for both parties.

Ultimately, adults within these programs can be understood as operating at the intersection of a number of key discourses which characterize the structure of informal digital learning programs that struggle with how to engage with low-income and marginalized youth. On one hand, they are situated within well-established discourses around these youth as “at-risk,” and as young people who need structured and authoritative guidance from adults. On the other hand, they want to recognize youth as empowered agents who can benefit from a supportive, stable community space. At the intersection of these discourses, the adults I observed worked diligently, as Tyner (2011) observed of youth-focused non-profit programs, to emphasize youth voice and decision-making, and to position themselves as an environment for youth to explore and express themselves outside the boundaries of school rules and hierarchies (p. 43). The adults were committed to the youth they worked with, and sought to incorporate youth perspectives and validate their voices whenever possible – yet there were always ways in which more adult-oriented discourses, as well as broader structural constraints, influenced adult agency in ways that led them to conflict with youth. These alternate positions were necessary for adults to adopt in order for the centers/programs to operate within their current structure – both locally and more broadly.

It was also clear that within these environments, the relationships and daily interactions between adults and youth were a key component of the creation of the spaces of digital learning. Processes and outcomes were often messy or frustrating because of the way in which adult-initiated and adult-driven agendas structured the spaces, but were forced to reckon with and intersect with often contrary youth agendas. Adults and youth

struggled separately and together as they worked and played within the space of the centers. Their successes and failures were part of a process by which diverse youth engaged with a process that fundamentally sought to expand their ability to engage with technology, express themselves in new ways, and connect with their communities. In the next chapter, I present in more detail some of the creations of the youth within these programs, in order to explore more closely the fruits of this process. What do agentic youth create when they interact with these spaces, and how can these creations be understood as a result of agency and structure?

Chapter 6

In the CTC: Youth Creations, Agency, and Identity

Throughout this thesis, I am building on the concept of youth’s “new media ecology” which understands youth engagement with technology as a phenomenon which connects all spheres of experience: “The everyday practices of youth, existing structural conditions, infrastructures of place, and technologies are all interrelated; the meanings, uses, flows and interconnections in young people’s daily lives located in particular settings are also situated within young people’s wider media ecologies” (Horst et al. 2010:31). Recent literature on youth and digital practices has sought to rectify the lack of in-depth understanding around how youth new media practices are embedded in a broader social and cultural ecology. My study in particular investigates the new media ecologies of urban, low-income youth and youth of color, and how they develop literacies and competencies around technology in these particular spaces, while expressing their own desires, and engaging in their own identity-creation via technology (Ito et al. 2010:24). In this chapter, I examine the processes of creation, as well as the end results, to assess how youth incorporate their perception of technology from their individual contexts into the informal digital learning environment. I show how two different structured digital learning environments provide unique *scenes of agency* for youth – primarily, the difference between an individualized and interest-driven environment and communal and community-driven environments. Throughout, I illustrate how these differing spaces work to connect to youth

agency and identity. This chapter illustrates how youth agency develops through, and interacts with, their tech creations in the CTC space, and how youth agency interacts with the structures of the CTC program.

In Chapter 4, I situated the technological habitus of the youth in my study as it emerged from everyday experiences outside of formal or informal learning environments. I presented evidence from interviews with youth who participated in community technology centers to establish the ecology of new media and technology in their everyday lives and to substantiate a more thorough understanding of marginalized youth as pre-constituted technology users and consumers before and while they enter into digital learning environments. Chapter 4 showed how the youth in this study existed in technological worlds and developed identities in conjunction with their experiences outside of the CTC, which they then brought into this environment.

In Chapter 5, I examined the structures and daily activities of the CTCs to better understand the guiding principles of these learning environments, and the everyday tensions and limitations that influenced how these ideals played out. I also explored how conflicting and converging discourses between adults and youth played out in the centers to co-create a sphere of digital learning which connected the environment to the lived experiences of both youth and adults. I explored how different learning environments, in their own ways, recognized the need to utilize youth's pre-existing technological habitus to keep them engaged in the digital learning environment, while attempting to shape youth's orientations to technology. I showed how the structure of the CTC and adult-oriented discourses were shaped into a space and a set of discourses that interacted with youth agency and identity.

In this final data chapter, I further explore the connections between the technological habitus of marginalized youth and its intersection with informal digital learning environments by looking at the actual projects and creations made by youth during my fieldwork. By examining these creations, and the processes by which they came into being, we can better understand the diversity of youth who enter into these spaces, as well as the diverse outcomes that happen within these spaces. Specifically, I find that the youth's technological habitus interacts with digital learning environments in ways that cannot be untangled or ignored. Digital learning programs like the ones I studied "seek to direct youth people towards a more proactive engagement with media and technology than they may otherwise have experienced and thus towards construction of a more positive self-identity," especially when "traditional identity markers" are seen to be "socially problematic as with 'at-risk' or socially disengaged youth" (Hopkins 2010:189). However, as I found, youth consistently engaged with learning technology in agentic and identity-building projects that bumped up against the walls of social constructions of technology and progressive organizational ideals, which highlighted how worldly relationships around technology, and social inequality, get reproduced.

In this chapter, I focus on some of the actual youth projects and creations to illustrate the dynamic elements of youth identity and agency for urban youth, for whom participation in these programs provides "scenes of agency" and "ladders of participation." But youth interact with these spaces in complex and sometimes unintended ways – ways which illustrate their desires and their aspirations, and their projects of identity-creation, but which also reflect dominant ideological and established interests. At the same time, spaces of the CTC can also reinscribe inequalities via their processes and structures, as

they are not isolated from the effects of socially-constructed inequality. What types of *ladders of participation* or *scenes of agency* do these programs provide, and what do youth do with them? How can their development of agency and identity be connected to raced and classed identities through their creations? This chapter aims to connect youth experiences and the CTC environment to show how race, class and gender play out in youth engagements with technology within informal technology learning environments. This chapter will look at what happens during moments of youth creation and engagement within the CTCs.

What I find builds on the need for supportive informal technology learning environments for marginalized youth, both in terms of providing stable environments with rich resources for technological exploration and skill-building, as well as providing learning environments which valorize and encourage youth agency and identity work. It is also necessary to recognize and allow for differences among youth in these spaces, who vary not only in terms of race, class and gender, but skill, ability, interests, and motivations. I also call attention to the ways in which outside inequalities and hierarchies enter into these informal learning environments, resulting in their reproduction and reinforcement. Additionally, my findings illustrate the difficulty of addressing the diverse needs of diverse young people while maintaining an open learning environment.

Youth Agency, Identity, and Media Education

At the heart of these informal digital learning programs are ideas about what is desired for the youth involved, especially with regard to the development of agency and voice for youth who have historically been muted by virtue of youth and race/class. Such

programs see participatory media programs ideally as providing a “ladder of participation” for youth, allowing them to move from “token representation to active determination” as they move through the production process (Goldman et al. 2008:192). Production work is thus not seen as a means to an end, but the essential part of youth participation in these programs which “fosters youth agency by nurturing those silenced voices that otherwise go unheard in contemporary culture” (Poyntz and Hoechsmann 2011:305). However, the complexity of youth agency and identity, especially as it exists before youth enter into the digital learning environment, means that the process and outcomes do not often represent a harmonious and smooth transition up the ladder. Recognizing youth agency and identity, while seeking to shape it, has been a difficult space that media education has needed to work within. My examination of these creations as expressions of youth identity-in-action is in line with contemporary theories of identity which “conceive of identity as a process, rather than a fixed possession or a label. From this perspective, identity is not something that can ever be achieved once and for all: it is fluid and open to negotiation, but also subject to many constraints” (Weber and Mitchell 2008:43).

Dezuanni (2011) claims that media education has been limited by its assumption that young people, as a result of the influence of media and popular culture in their lives, have diminished agency. A more complex understanding of youth media education should account for the types of agency young people *do* exhibit around media. Dezuanni believes a shift is occurring in which discourses of participation, play, and experimentation are being prioritized over discourses of consumption, effects, influence, and critical response around young people’s relationships with media. Yet media educators remain concerned about the perceived power imbalance between young people and media, and

the nature of young people's agency (Dezuanni 2011:121). Young people quite commonly resist and repurpose media products. However, they are also likely to resist and repurpose formal education: "[M]edia educators cannot assume that young people will take up opportunities to produce media in preferred ways" (Dezuanni 2011:126). Even as media education programs encourage youth agency through the development of voice, youth may use this opportunity to produce unsanctioned media – and the definition of what it means for youth to "possess" agency becomes contentious. Youth engagement with media creation can reflect Bakhtin's (1984) notion of the "carnavalesque" wherein boundary-crossing expression is an expression of agency among those with little social power, especially youth within a learning environment (Poyntz and Hoechsmann 2011:313). Youth can also engage in identity politics and reclaim identities that may be regarded as illegitimate or less legitimate by those who hold power in society – laying claim to positive identities quite different from those envisioned by adults, both in the CTC and in other spheres of their lives (Buckingham 2008:7). Media educators in general face a challenge in determining how best to harness the role of pleasure in creation and learning. In this chapter, I highlight how the negotiated entity of youth voice in media production becomes even more complex when the voices are those of historically marginalized youth (Gibbons, Drift, and Drift 2011:172).

My investigation of youth identity within CTCs reflects a dialectical mode of identity, where identities are both personal and social. Youth creations within the CTCs operate at the crux of youth identity from both outside and inside the learning environment, and connected to peers, adults, and society. Media production by young people, it has been suggested, offers important lessons to youth about media literacy (Chalfen and

Rich 2011). I expand this notion by looking at technological creation as well as media production. Especially as the politics of media production and reception have changed, young people have been offered “new opportunities for power and influence in direct and indirect ways” (Chalfen and Rich 2011:116). However, this “power” is always connected to, and dependent on, social and cultural factors. Especially for low-income or marginalized youth, this power can be seductive but illusory. Here I refer to Willett’s (2008) approach regarding her study of youth’s online activities. Drawing on Giddens’ (1991) concept of structuration, in which agency and social structure act through each other, Willett seeks to look past the structure-agency dichotomy with regard to young people’s digital engagement. While young people should not be regarded as passive, we should be careful to not overlook the values they are buying into through their engagements with digital media – values which may reproduce inequalities and disempowerment through consumer engagement (Willett 2008:50).

Through youth creations, I examine the tension around the agency of marginalized youth. The structure of the programs I examined offered youth opportunities and possibilities for agency: “scenes of agency” in Judith Butler’s terms (1990). Youth digital creation and production within structured learning environments provides a useful lens through which to witness youth “identities in action” as they interact with and resist “ladders of participation” provided for them. Not only do youth interpret and incorporate the environments provided for them in the CTCs, their creations represent an engagement with a larger media culture, which “facilitate a blending of media, genres, experimentations, modifications, and reiterations” (Weber and Mitchell 2008:27). My analysis builds on others who use youth creations to illuminate their relationships to their social worlds:

“Digital productions tell stories of sorts and leave a digital trail, fingerprint, or photograph... Young people’s interactive uses of new technologies can serve as a model for identity processes” (Weber and Mitchell 2008:27). Where my analysis extends this is in the way I consider how youth identity is socially situated for youth marginalized by race, class, and gender, and how this influences youth as cultural producers and autonomous technology users. I examine how digital production and tech creation within community technology spaces allow youth to manipulate raced, classed, and gendered identities, and yet also how the structured nature of these identities replicate within these spaces in ways that perhaps call attention to youth identities-in-action, but also to the replication of inequalities.

Youth creations illustrate the diversity of engagements and contexts of understanding youth bring into the centers, merged with the context of particular learning environments. The centers provided structures for situated learning around technology, yet these centers, and the youth who enter into them, were not isolated from the new media ecology which existed outside their walls. In order to understand these particular youth’s media ecologies, whose use of technology is not well understood at this point, even as interest in digital pedagogy explodes, we must recognize the unexpected and innovative ways youth use technology within learning spaces. It is also important to recognize the way in which technology lends itself to the blurring between public and private spaces for youth, and the potential benefits and drawbacks this has for marginalized youth, who get constructed as both consumers and citizens (Willett 2008:53). While there has been growing attention to “digital youth” as a population, to their practices, developing literacies, and social competencies around technology, my observations of this process among

marginalized youth revealed particular needs and small opportunities that demand special recognition, rather than eliding them in favor of romanticizing young people and their digital engagements.

In this chapter, I identify the spaces of empowerment for young people who need it – while calling attention to inequities which shape their experiences within the centers. I also highlight the need to recognize the variety of interests and engagements there are with technology among low-income youth and youth of color, to which there has not yet been a great deal of nuanced attention. Though he was focusing on the internet, I concur with Holmes (2011), who contends that there are:

“[f]ew research projects which allow us to assess how youth perceive the internet and its relevance to their individual contexts....These findings indicate substantial diversity in young people’s social constructions of the internet and their engagements with it...A more refined approach is needed which properly accounts for diversity in engagement” (P. 1109).

Even as our attention to the “participation gap” grows, disadvantaged tech users are often lumped together demographically.

I offer a view into the intersection of marginalization experienced by youth and their technological engagement within informal spaces of digital learning. New research and learning initiatives are multiplying which validate young people’s participation in networked publics, build on this participation, and incorporate it into digital learning environments. But inequalities still influence and play out in these environments.

The Multi-Sited Approach

Within particular CTC programs with different levels of boundaries and structure, youth build their relationships with technology through engagement and resistance to the prescribed uses of technology. In this chapter, I will show how youth identity work and

social learning processes illustrate the interaction of their raced, classed and gendered identities with digital learning environments. I will illustrate how these tensions show up in youth creations across the two centers, connected to the specific program structures, and the specific youth involved. The enactment of situated or connected learning for these youth does not always happen neatly and cleanly, as agentic youth bump up against learning environments of all kinds in ways that highlight their interests. The different structures and environments of the two centers present different lenses and potentialities for the youth involved and serve to highlight different constellations of raced, classed and gendered engagements with learning technology. Thus, a major structuring theme of my findings is the nature of the two programs I studied.

Gibbons et al. (2011) note that the expression of youth identity in digital creations is not a simple relationship between youth and technology; these expressions differ among organizations, depending on whether they are focused on the building of individual or collective identity. Within my study, the structure of the organizational learning environment is also of great importance – youth’s relationships to digital learning were much more structured in one environment and much looser in the other. I also provide insight and connection between the structure of digital learning environments and identity expression by individual youth within these environments – a perspective which is often lacking. Different youth can embody Ito et al.’s (2010) “Hanging Out/Messing Around/Geeking Out” categories at different times, but the connections between these categories can be hard to bridge for marginalized youth even within supportive and technologically rich and creative environments.

While I pay attention to the completed projects in both centers, I also look for the small moments and opportunities in project creation that are easy to overlook but point to the importance and significance of technology engagement for the youth in this study. These small moments often point to youth voices and agency coming through, even if it seems to be working against the program's desired goals for youth.

Youth Agency and Identity in The Free Program

Because of the largely open nature of The Free Program, youth agency and identity was generally located within individual youth interests and outside motivations, supported by the structures and staff supplied by the CTC as part of the Digital Film and Music Program. The “ladder of participation” here was very individualistic, self-motivated, and self-directed – which allowed youth to pursue their particular interests. This environment lent itself to being intensely utilized and dominated by youth with particularly intense interests and aspirations, rather than those with a social or hobbyist interest. Highly active and productive youth were motivated by their job aspirations, often tied to glamorous careers highlighted by the pop culture and consumer culture which served as repertoires of knowledge for their creations. In open environments such as this one, *scenes of agency*, while guided by adults, were largely defined by youth.

The Studio: Individual Interests, Pop Culture, and Peer Networks as Motivators

The recording studio was an intense scene of youth agency, especially for many of the young Black and Latino men who frequented the center and who dreamed of becoming famous hip-hop performers or producers. Their interests encompassed a variety

of music creation activities, such as the making of beats, music videos, and complete albums. But the initial draw for some youth was the ability to perform in the recording studio, and the production of professional-sounding recordings of their own material. Teens would spend hours “hanging out” in the studio, scribbling lyrics in notepads and loose sheets of paper, selecting background loops, and painstakingly editing tracks, aided by Daniel, the audio production instructor. With the staff member acting as a guide for the technical aspects of music-making, much of the rest of the music-making process was left to the youth, making it one of the more purely youth-motivated spheres I witnessed – and therefore analytically rich as a space for examining youth agency and identity processes through technological creation. The “ladders of participation” that youth ascended thus tended to be self-defined, which generally meant the CTC functioned to aid their participation in wider social networks, their ascension in peer hierarchies, or in their achievement of personally-defined success. Yet the dependence on individual youth motivation and interest also allowed for the reinforcement of peer hierarchies, and participation in potentially disempowering discourses and social networks for some teens.

In the studio, the youth engaged with the “complex cultural terrain” of hip-hop culture, which has long been a sphere of cultural production and technological aspiration for youth of color (Watkins 2012:3). Watkins notes the similarities between hip-hop culture and the space of digital creation and production. Hip-hop has long been a space of creative innovation around technology, as well as a powerful social space where practitioners developed subcultural capital within networks of peers. Just as early hip-hop was “interest-based, peer driven and propelled by a rich informal learning ecology,” it makes sense that the young people drawn to TFP for the recording studio would be motivated by

these same elements (Watkins 2012:4). Though when left to their own devices, the youth were more interested in Black cultural capital which “enables young black to gain what they perceive to be an authentic position of cultural status in their peer community – but it is not assigned the same institutional values of other forms of cultural capital” (Watkins 2012:4). For many of these youth,

“[h]ip-hop culture is the dominant medium through which black and Latino teens construct their digital identities, master unique linguistic practices, assemble social ties, and navigate their interests in pop music, videos, fashion, sports and civic life... The digital media practices and identities of young black men reflect the extent to which they covet fantasies of fame, wealth, and status that color the most popular expressions of black masculinity in the production of corporate hip-hop. In this context, content creation and authorship with digital media develop culturally specific notions of authenticity, social currency, and cultural capital within a distinct peer community” (P. 4-5).

Additionally, Raiford Guins (2008) suggests that hip-hop as a cultural practice of young people must not be dismissed or trivialized – that hip-hop’s cultural models must be engaged with to “ascertain how race and ethnicity are experienced and articulated across digital media, and how these emergent social functions of communication technology disperse and decentralize ideals in a networked public sphere in the form and styles of hip-hop culture” (p. 66). These approaches to youth’s racialized engagement with hip-hop and music creation help inform my analysis and interpretation of youth creations within the studio at TFP.

The Studio and the Ladder to Stardom

The recording studio at The Free Program represented an important scene of agency for several of the young men I observed there. Access to the creative means of production as presented by free studio space was highly attractive to them especially as they sought the subcultural capital associated with mastery and performance of rap, and

as their aspirations were attached to a potential career as hip-hop performers and producers. For them, the recording studio provided a means up a “ladder of participation” that was more defined by interest-driven peer networks and fame, wealth, and status in the mainstream hip-hop culture, rather than the community-based or technological-skill-based missions of the CTC. The tech skills acquired by these youth were generally in the service of the production of professional sounding tracks and “authentic”-looking albums, photos, and other production aspects which enabled them to enact the identities that would give them this status.



Figure 1: Marcus's CD Cover art

Sam (17, Low-income, Hispanic), Terrence (18, Low-income, African-American), Aaron (23, Low-income, African-American), and Marcus (15, Low-income, Hispanic), the most frequent users of the studio, were often accompanied by their friends or acquaintances who collaborated with them or who simply “hung out” while others recorded. These four young men were prolific writers and performers who were interested in producing authentically “professional” albums at the studio which they could promote, sell and use to build their music careers.

Sam represented the self-directed rap impresario who took full advantage of the resources made available by the CTC, to the point of dominating the studio space and time in a way that the CTC staff felt they had to address, even as they appreciated his avid use of the center and the fact that he brought other youth into the center. Sam was a quiet and polite, but confident and charismatic, 17-year-old Dominican-American male with dreams of becoming a big-time music producer. His natural leadership skills and ambition led him to gather a number of friends and acquaintances who also enjoyed writing and performing. He formed a record label of his own, called Annihilation Records.

For a time, he and his friends (and a few other interested teens) seemed to establish a monopoly on studio time; they would enter the studio as soon as access hours began and remain until the center closed. The staff identified this as a problem since it made it difficult for recording for other projects to be scheduled.¹ Yet the staff largely supported their use of the studio for these creative purposes, while encouraging them to use other available technology to create a finished project. Staff would help teens with photo sessions and photo editing so they could create CD covers and promotional materials for their song, album, or record label. Several boys recorded documentary-style videos about the production process and the studio which they intended to put up on their Myspace music sites or on Youtube.

The recording studio was a largely “open” scene of agency for these self-motivated young men, who were drawn to, and entered into, this space for the chance to climb the “ladder of participation” that represented status and cultural capital for many young

¹ Other projects included recording narration for documentary-style videos, for instance.

men of color. Here, the CTC provided a self-motivated space that utilized pop culture knowledge and imitation to allow youth a space to develop their own voice and to allow their participation in networked publics through creation and sharing of media productions among peers, the local community, and online. While others have found that many youth engaging in creative production through technology do not have professional aspirations (Lange and Ito 2010:284), that it is a social activity or hobby, I did not find this to be the case in the studio. It is within the recording studio that I found youth with intense professional aspirations – young men for whom an open CTC space which allows them to pursue individually-defined dreams and aspirations. The studio provided them with a space to express voice in a way that is often ghettoized by society in general, and by particular spheres in which they participate, such as school. It allowed them to participate in cultural forms which meant the most to them and offered the most status and validation within their peer communities and as part of their personal identity-building projects.

The Importance of Peer Feedback

Another important aspect of youth-motivated and directed *scenes of agency* was the level of peer sociality – a high level of interaction and a high premium placed on feedback and peer approval through the filter of popular culture and authenticity. Popular culture provides an entry point for many youth to engage with technology, and popular culture makes up much of the shared culture among youth, sometimes referred to as “collective memory” (Bromley 1996; Parry 2012). I found that within individually-motivated and youth-defined spaces such as The Free Program, peer networking and feedback was an important way in which youth engaged with popular culture and with each other to make agentic connections between their creations and larger publics. Peer feedback and

approval also marked a level of authenticity around the studio recording and production process, as well as lending legitimacy and recognition to the final products.

For the rappers, peer feedback was an essential part of the creation process. It seemed to be essential for an “authentic” rapper to submit his work for public consumption and feedback. Even in my researcher role, I was conscripted into this role, especially by Aaron and Terrence, who were often working on their own in the studio, and thus didn’t have much immediate feedback except from Daniel if he was producing them. When I asked if I could have a copy of their recordings, Aaron told me I could, but that I would have to promise to give him feedback on the songs in exchange, once I listened to them. This type of barter – a chance to listen to new material for me, and “peer” feedback for him, which might allow him to gain new insight on his work – was an essential part of the creation process for him. Though I wasn’t sure how much useful feedback on the content of the music I could give, it was often asked of me by the youth when we listened to their creations, and I endeavored to offer up some critiques and suggestions in exchange for their willingness to share their music with me.²

For Sam and his crew, the idea of a “label” represented a local social network for music production which consisted of a group of peers, led by Sam, but which utilized the talents and input of many members. While their evenings of “hanging out” in the studio were social in nature, and sometimes not very fruitful in terms of tracks produced, the collaborative aspect of the label contributed to a peer-based production process which

² Another form of exchange could be monetary. When I asked Terrence for some of his tracks, he offered them to me for a price of a few dollars. In this way, he could achieve his goal of being a paid recording artist.

was very important to their idea of a creative and productive community defined on their own terms and producing a series of objects which reflected their identity as group. This has its roots in the hip-hop community, which they were certainly emulating, but the transference of this model to the CTC was important for its provision of a supportive and safe space for young people to utilize and develop their own voices and identities, and to participate, not just consume, within mainstream pop culture paradigms. This space within the CTC functioned as an amateur community of media production which was important as a starting point for those youth with specific aspirational trajectories – and which could perhaps help them move from a local context to a larger, more public one, given the necessary resources, both technical and social.

Youth-formed and -directed creative communities and peer networks allowed youth whose interests and aspirations may be marginalized by other spheres to create and dominate their own spaces for engagement, and to work with and rework popular culture in creative ways. Though informal and largely shaped by youth participants and youth interests, they formed their own creative communities, and developed mechanisms and norms for feedback which allowed them to learn and improve within the schema of the group – by sharing creations and ideas with fellow creators and incorporating feedback (Lange and Ito 2010:280).

Self-Directed Youth Projects and the Replication of Disempowerment

In addition to providing a space for self-motivated, interest-driven youth, a free, nurturing, supportive and youth-friendly space can be important for opening up media production to youth who might not otherwise have tried it. Such spaces can be important

for encouraging youth to try new technologies and to move out of their comfort zones around media and technology use. However, youth-dominated and structured production spaces and open program environments can also have the unintended effect of replicating power structures, hierarchies, and exclusions that carry over from peer social networks and the popular cultural models the youth are often emulating. In these situations, spaces can be less empowering as *scenes of agency* for young people who are trying to fit in and navigate social status networks, or who don't feel welcome to engage in these spaces that are dominated by others.

Even as Sam took on a position of leadership within the studio that was empowering to him, his dominance, and the dominance of a few young men within the studio space, created a status hierarchy among peers that made it difficult for others to claim and utilize this space in the same way. Sam, as the "boss" of Annihilation Records, generally set the agenda in terms of planning and executing recordings over the course of an evening. Because of his position, other youth would defer to him, whether they were part of the label or not. Since the studio could only support one person recording at a time, this further limited opportunities for people to record, as a single track could take hours to put together.

This also proved to be a very gendered pattern of dominance, as it was always these young men who headed up studio time. Sam's label, and other regular groups of recorders, consisted of both boys and girls. Some girls were ostensibly interested in performing. Sam's girlfriend Sabrina was a regular fixture, and Sam told me in interview that she was a talented rapper, with her own rapper name. I often witnessed these young

women scribbling lyrics into notebooks, like many of the young men. Yet at no time during my fieldwork did I ever witness a young woman performing and recording in the studio – and certainly not one who did it in front of the boys. Some girls wanted to perform, yet often were pushed to the margins and took on spectator roles in the studio while the boys worked. These gendered patterns reflect gender roles and patterns of behavior clearly shaped by broader social patterns that marginalize young women, especially young women of color. These patterns are evident in the hip-hop industry that so many of these youth are incorporating and modeling themselves after in which there are fewer models for female performance, let alone for women in leadership roles, such as production.

At times, staff members intervened when they felt that a few youth were dominating studio time so much that other projects that required use of the studio were not able to get in. They tried to institute a studio scheduling sheet which required people to sign up for the limited recording hours. At other times, staff would become annoyed when they felt that large groups of youth, such as Sam's label, were only using the studio as a social space, and not a productive one – evidenced by too many youth in the small space, many of whom were observing whatever recording was going on, not writing or creating themselves, incidents of theft or vandalism, or trash left behind in the studio. Generally, though, adults did not intervene in the nature or content of the projects, or how young people organized themselves as they worked on their creations. Instead, interventions took on a functional aspect, when youth creative communities enacted behavior which drastically impacted the health of the studio or the CTC as a scene of agency for others and as a larger community. These interventions attempted to correct for some imbalances

and inequities created by agentic youth, but generally corrected for symptoms rather than by trying to control youth actions on a more fundamental level. So while youth were allowed a great deal of autonomy around technological creation and media-making, this deference to youth-directed agency and identity-creation had the effect at times of sidelining and reinforcing marginalization for some of the youth involved.

The Content of Youth Raps as a Source of Tension

While hip-hop and music production has been and can still be a powerful avenue for voice and expression for marginalized communities, the lyrical and subject content of many of the creations of these young men within the studio tended to follow mainstream industry models of popular hip-hop, which has been widely critiqued for its misogyny, violence, and limited models of masculinity for men of color. In this way, while youth were producing content and enacting models of identity formation that were validating for them, there was a strong tendency to create musical content that reflected mainstream, commodified, and depoliticized messages. In this youth-directed space, popular cultural models from mainstream hip-hop served as a point of entry and a powerful model for what these young men were seeking to accomplish through their productions. They sought to establish the “cool pose” that is often so desired and valued for young men of color within their communities and which is one of the few avenues for them to experience a powerful masculinity within society in general (Majors and Billson 1992). While the topics the youth rapped about were sometimes connected to their own experiences, they were also undoubtedly emulating the style and content of mainstream musicians and the accepted model of successful mainstream hip-hop and rap.

The most common theme within youth raps was rapping itself. Songs were often anthems about the prowess of the rapper and how he would beat other rappers in battle. This sort of creation reflected the rap battle culture which many of them had ties to in the city, or which they had pored over on sites like Youtube. Many of the lyrics served to establish the rapper as a dominant figure. Young male rappers would often make claims about the women they could get, and include references to sexual conquests and prowess. The battle metaphor would often give rise to violent imagery and references to physical fighting. Other songs made reference to club culture and partying.

Staff Responses to Youth Rap Content

The nature of the space as open and youth-directed tended to limit adult censorship of youth, even though lyrical content was sometimes objectionable to the staff, or would have been if they had known about it. However, staff generally turned a blind eye to content in favor of having youth enthusiastically and productively using the studio. In one instance, Sam was recording a cover of the popular Lil Wayne song, “Lollipop,” which contains explicit references to oral sex. While a mainstream song, staff expressed some concern or hesitation to each other about Sam covering the song in this environment. However, while recording Sam, Daniel did not express these reservations to Sam, and simply acted as his producer and focused on technical aspects of his performance. It was only later, when discussing with other staff what had been done that day that Daniel revealed his reservations:

Fred wants to hear the tracks that Marcus and Sam did today.

Daniel: “You don’t want to hear Sam’s. Robert [another staff member] was already crying over it.”

Me: “Why?”

Daniel: “‘Cuz it was inappropriate for his virgin ears.” (Fieldnotes)

Another time, Robert tried to limit youth’s use of objectionable lyrics by appealing to their marketability, and its ability to be shared within the CTC:

Robert tells Marcus that some of his lyrics are in poor taste and says, “I wanna talk to you about it after...”

Marcus: “What you say?”

We listen to the lyrics played back: “Cuz I’m the king’s queen...you fucking loser...”

Robert: “Why you gotta say that?”

Marcus: “I dunno, I didn’t have nothing else to do.”

Robert: “I mean, why bother recording a song if you gonna make it prevented from being played anywhere? You can’t play that here. You can’t play that for Diane [the head of the center].” (Fieldnotes)

This was one of the few instances in which adults expressed reservations directly to youth about content. Robert was most likely to overtly express these concerns, but he left his job at the center a few months into my fieldwork. It was Daniel, the audio instructor, who was most often present for recording and was unlikely to censor lyrics and mainly restricted his role to sharing the technical craft of audio production and critiquing performances. Other older “youth” such as Terrence (18) and Aaron (23) were not policed as much as younger teens.³ The autonomy granted to youth within these *scenes of agency* could create difficulties for staff, such as when staff needed to put together youth-pro-

³ They were considered adults and were not really seen as youth to be influenced, and not really seen as being directed towards a productive future. They were active users of the center, and for a time after Sam stopped spending time at the center, often the only people I saw recording every night.

duced content to present to funders and the community, as evidence of the accomplishment of youth production within the CTC. While the center was lenient in allowing youth to create music, they were interested in youth producing *some* content which could be shared with funders and the community. This usually meant taking stock of what had been produced after a period of time, and consulting with Daniel, to determine which tracks were most appropriate to be shared with a more conservative audience. In this way, staff could be seen as acting as defenders of youth agency and youth-controlled spaces of creation by doing the work of curating the creations to represent the programs in the way understood as necessary for its continued support by its funders. By allowing these creations, but eliding or ignoring their existence when presenting youth creations to the board, or the larger community, the center preserved the space as one where youth could create what they wanted even if these creations did not completely fit with the missions and ideals of the centers.

Marcus and Ascension Up the Ladder

The interaction of the CTC as a scene of agency for self-motivated, independently-motivated, and interest-driven youth did not always mean, as the previous sections suggest, that youth engagement with this sort of open structured environment only served to reproduce problematic relationships with consumer culture, and that there were few opportunities for any but the most confident or dominant youth to be prolific creators within the space. In fact, this space provided an open and complex youth-directed space that allowed youth to grow as agentic creators and producers, by allowing for the slow and subtle interplay between the elements already mentioned: an open scene of agency that lends validity to youth interests and motivations, a space for peer interaction and

feedback that connects to youth status structures, and the support of a resource-rich center and staff who are available for intervention and direction on some level for youth who are interested and receptive to it. For some individual youth, who wished to engage in media creation, but lacked the confidence, skills, or direction to ascend a “ladder of participation” with regard to expression, production, or technical skills, a consistent and stable space such as TFP could allow for growth in multiple areas over time. Even aspects that could be considered problematic in youth learning environments, such as peer-structured hierarchies and passive participation, contributed to an environment which could motivate and drive certain youth to ascend up “ladders of participation” and to become producers in ways that would not have been likely to occur without this particular space and its constellation of influences. The fact that peers and peer feedback and socializing were important to youth, as was popular culture, is important to acknowledge as a potentially productive force for youth, even as it has problematic effects as well.

This complex interplay between a young person and his ascension up a “ladder of participation,” the CTC as a scene of agency, and the power of peers in a youth-directed space, was best exemplified in my observations of Marcus. Marcus, along with the other young men mentioned, was an active user of the studio, but he embarked on much more of a journey than the others in order to gain the confidence to perform, as well as to produce and become an employee of the CTC as a producer – a step towards gaining audio production skills and employment in which the other young men weren’t interested. Marcus (15, Low-income, Hispanic) was a shy, quiet, somewhat socially awkward teen without the outward swagger and confidence of Sam, Aaron, and Terrence – but with similar dreams of making music and achieving fame and acclaim for his music. His admiration

of the other boys, especially Sam, served as an inspiration for him to begin recording his own music, yet he also suffered from the exclusion he felt at the bottom of the peer hierarchy, finding it difficult to be included when Sam's crew was recording. Because of this, he generally preferred to work alone in the studio, or with the adults and youth with whom he had an easier rapport.

Recording largely on his own, and with the support of the adult instructors, Marcus began to learn a great deal about the recording and production software, and the editing and production of audio tracks. Eventually, the CTC hired him as a sort of "junior producer," producing and managing the studio when others like Sam and his crew were recording, when Daniel wasn't available. In this way, Marcus was able to utilize the space in such a way that provided him with skills and authority that moved him up the "ladder of participation," and into a position of authority above the peers that he admired but who somewhat dismissed him, and which allowed him to acquire technical and vocational skills that could be applied beyond the singular task of personal music creation. This constellation of factors, in which his personal interests combined with his outsider status within this particular productive space, contributed to a situation where Marcus could acquire skills. These technical skills could connect him to vocational career trajectories that the other boys, who did not necessarily have to move outside their comfort zone to produce the music they wanted, did not acquire.

Marcus's positioning outside of the peer status network that the other rappers participated in was also reflected in the content of his music. While he would touch on the themes already mentioned, he also seemed to address a greater variety of subjects than the other boys. Many of his lyrics expressed inspirational messages and a powerful belief

in God. “Dream On” was a straight-forward inspirational song about not giving up on dreams:

“But if you’re feeling what I feel
Don’t put your head down
Move on and do the grit
Just play your part in life
And smile while you’re at it
Don’t smile in denial
‘Cuz God is always with you
Always there by your side
Always watching your back
In time you’ll be the greatest
So smile and do your part
You’ll probably be a dentist, a doctor, or a lawyer
Don’t put your dreams down
‘Cuz in time you’ll regret it
If you’re living in the streets
If you’re living in the ghetto
Your dream is what you want
So follow it and live it on
Accomplish what you want.”

Another, “Lord Help Me,” described drawing on his faith to get him through difficulty, perhaps touching on his outsider status:

“Lord Help me, help me help me help me
...Cuz im feeling isolated, isolated from the rest
Isolated from this world
And this world don’t give a shit
I don’t feel like I belong
No, I feel like I should die
Go beyond me on the clouds
Go beyond me on the clouds
Be there by your side
‘Cuz my mind is out of place
Oh this world don’t give a shit
What I’m suffering through”

In another song, he described himself as a soldier, and credited his mother for making him strong enough to get through life.

Beyond Marcus's growing voice in terms of his lyrics as he became more prolific and respected in the studio, his *actual* voice changed when he performed as his confidence grew. It was always impressive and surprising to see him record or to listen to his recordings, as this shy, quiet young man performed with an ever louder and more confident voice and as he worked to achieve the kind of performance that he admired so much in his peers and celebrity hip-hop idols.

His growing confidence and stature, while not totally ingratiating himself with the other youth who dominated the studio, did lead him to collaborate with some of the other boys on a few tracks. It was interesting to see, in one instance, how this incorporation and association with the rappers, who did not forge individualized paths as Marcus did, led to an instance where the substance of his lyrical message was somewhat altered by his guest rapper in a way which brought it more in line with mainstream hip-hop. In the song "Soldier," mentioned above, he collaborated with another youth who added some freestyle lyrics to the end of the song. The substance of Marcus's rap was non-violent and inspirational in nature- the "soldier" is symbolic for inner-strength:

"I'm like a soldier, I got the love of a marvelous
Strength of an army within deep in my heart
You can't take me down 'cuz when I go down, I get back up"

The guest rapper, however, freestyled on this theme, and completely changed the tone, emphasizing the violent symbolism inherent in the soldier image:

"Top 10, I'm a top 10 gunner.
Pop off any one of you motherfuckers
If you want it...
And my mother, she wants anything?
I'm a gun for her too."

Marcus does not appear to have overtly objected to this youth's addition to his song; in fact, he was quite pleased to be involved and included with the other rappers at the CTC. Yet this pointed to another effect of the social collaboration process, where the message and tone of Marcus's track was redirected and reshaped by this music-making process in a way that re-subordinated him and his creation within the peer hierarchy.

Marcus's journey as a producer and creator can be understood within the context of the CTC as a scene of agency where he was also subject to peer networks which both inspired and intimidated him. It illustrates the complexity of youth agency and youth interests as a motivating factor in technology engagement. The recording studio provided a scene of agency which validated the interests and desires of the youth who entered into this space, as they engaged with a cultural form that has been contested and marginalized as a form of expression, and may not have been supported in other institutional spaces which these youth move through. Yet as scholars of this cultural form have attested, hip-hop satisfies a void for a black public sphere, providing a space of debate and critique in the current environment of eroded social institutions and spaces. Accordingly, hip-hop artists "have reclaimed the critical possibilities of popular culture, by using popular culture and the marketplace as the forum to stimulate a broad discussion and critique about critical issues that most affect their constituencies" (Guins 2008:68).

To reclaim the popular as a critical forum for rebuilding/redesigning the black public sphere is to broaden what popular culture can consist of and how it can be called upon to function in provocative and educational ways for engaging with youth (Guins 2008:68). The incorporation and use of hip-hop, and its embrace of technology, to form a Black public sphere has a significant lineage which endorses the potential of spaces like

the CTC to connect that cultural sphere to a more networked space for youth for “conceiving of a black community, social awareness, participatory communicative exchanges, and digital learning” (Guins 2008:69-70). Guins claims that:

“...black cultural production, in the form of hip-hop 2.0, remains at the forefront in developing innovative and creative practices that broaden access, distribute knowledge, and provide an interactive public space and critical learning forum for young people with its reconceptualization of democracy in a networked digital age” (P. 78).

While recognizing the importance of this type of cultural production to my subjects, I temper the idealism of these technological possibilities by showing how youth agency and interests intersect with this potential in sometimes empowering ways, but also in ways that reinscribe and reflect inequalities and marginalization – and that these two experiences are not mutually exclusive, as in Marcus’s case. The power inherent in a youth-directed scene of agency like TFP can be very attractive and empowering for the youth I studied. Yet the ability of a youth to climb a largely self-defined “ladder of participation” in such an environment is subject to a multitude of factors drawn from the individual youth’s identity and feelings of agency, the structure of the creative space, and peer networks both in and out of the digital learning environment.

Youth Agency, Legitimacy, and Frustration

The importance of attending to the complex interaction of structure and agency for understanding youth creation was visible in projects undertaken outside of the recording studio as well. In this youth-directed environment, in which youth draw heavily on pop culture resources and desires, there were additional factors that seemed to relate to whether youth maintained motivation, interest and the sense of agency needed to finish their creations.

Kyle (13, Working-class, Asian-American) was one of the most prolific youth creators at the center, a regular attendee with a strong sense of agency around technology, and a love of music and dance which fueled his interest in creating his own media. He could conceive of, put together, and publish a media creation in an entire afternoon, and did so quite often. While he was somewhat unique in his output and sustained attendance at the center, the elements of creation that he found so rewarding, and that therefore led to continued creation, were not terribly different from other youth, only amplified by his enthusiasm.

When I first met Kyle, he was making collections of hip hop beats on production software like Acid. Soon after, he shifted to creating “C-Walk” dance videos which he would post online to his Youtube account. The “C-Walk,” or “Crip Walk,” is a street dance that originated in the 1970s among the L.A.-based gang, which involved a focus on intricate and fast footwork. He had begun studying the dance initially through Youtube videos. His process for creating his own videos would generally follow the same routine. With the help of the digital film instructor, he would go to a nearby outdoor location, such as the parking lot at the apartments, and they would film him dancing, often with the camera focused on him solely from the waist down, while he listened to the song he was dancing to on his mp3 player. Back in the center, he would edit his video footage and use Apple’s iMovie to sync the music track with the video, along with some movie titles introducing and crediting the movie.⁴ He would often dedicate his videos to girls he knew, or other friends. He would then upload it Youtube and await reactions and comments.

⁴ Despite the suggestions of the staff, Kyle would always use a popular song, rather than his own beats. Staff tried to encourage kids to use as much of their own creations as possible in projects, but youth were often resistant and wanted to use mainstream, professional music to accompany many of their projects.

Sometimes Kyle was able to film, edit and publish one of these videos in the course of an evening at the center. As of October 2010, he had around 50 of these videos posted to his Youtube account. He would also post his dance collaborations with Aiden, a Michael Jackson fan and dance-enthusiast, as the two performed together at community and school events. Kyle's personal dance videos were largely viewed by "real-life" friends from school, who subscribed to his Youtube account, those of us at the center, and the occasional internet surfer. However, he did receive a large boost at one point when he posted his videos from his attendance at the touring show of the MTV dance competition show, "America's Best Dance Crew." Some of those videos were found by other fans of the show, and received hundreds of views (quite a few more than usual). He was extremely excited about this attention to his videos, even if they were impromptu cell phone recordings and not his own carefully crafted dance videos.

Kyle's case illustrated some of the elements which seemed to characterize enthusiastic creation and finished projects among youth in a self-directed environment. As with the boys in the studio, Kyle drew heavily on his pop culture knowledge and his desires to participate in the cultural expressions that he was drawn to create through his mass-mediated exposure to similar productions. Yet, it was also the highly produced and professional nature of these productions and their elements that were attractive to these youth, and which they wanted to emulate to grant their creations legitimacy; they want their creations to be just as good as the "real thing." Poytz and Hoeschsmann (2011) note that, for youth, imitation is an important aspect, not only of learning new media, but of learning how to produce cultural expressions (p. 303). Other studies of youth-created video games and animations have observed that youth "draw on their existing knowledge of what a

‘real’ production looks like” and in doing so, incorporate their own accumulated knowledge of mainstream mass media conventions (Drotner 2008:169). Youth are not necessarily copying professional productions when they do this; they are altering, re-working, and applying the language of production to their own creations.

Part of the legitimacy of Kyle’s videos came from the meticulous honing of his own dance skills, which he devoted many hours of practice to and for which he was his own harshest critic. But the other aspect of making a legitimately “good” dance video in his eyes was that it look like a “real” music video of sorts – with polished and professional effects, camerawork, and audio. In some ways, this was aided by the level of technology available to the youth – the quality of video Kyle was able to shoot of his dancing was quite high. Yet the ability for youth to create the types of productions they wanted to required more than this. It required the ability to edit video, including adding effects and transitions, the ability to attach audio tracks, and the overall aesthetic ability to put these things together in a way that approximated the youth’s vision. It was important in an independent digital learning environment like this for youth to be able to put these projects together in a way that allowed them to feel like they were accomplishing their goals. While they drew on their “funds of knowledge” from their pop culture experiences, it could not be automatically assumed that they would make satisfying connections between their lived experiences and the digital learning activity (Parry 2012:44). In fact, a large gap between what a young person envisioned creating, inspired by mainstream media products, and the actual product they were able to make could be frustrating and dispiriting for the creator and perhaps inhibit future creative efforts. Thus an empowering “scene of agency” can become disempowering when the process of creation creates barriers up

the “ladder of participation.” Technologically-driven work can be tedious and time- and skill-intensive in ways that may discourage or distract youth who wish to be creators; this can be especially true for the low-income and marginalized youth most in need of participatory, creative spaces of digital empowerment. The skills needed to produce polished, finished products might not be acquired in these spaces, leaving youth unhappy with the quality of their finished product, or leading them to not finish the product at all. While other analyses have put forth a relentlessly optimistic view of young people and their technological creations, Dezuanni (2011) critiques the over-emphasis of process over product, asking “What kinds of knowledge and understanding are gained if you can’t produce a whole product?” (p. 124)

Illustrating this tendency was Jaime (14, Working-class, Dominican-American) – another regular at TFP with a strong individual interest in media creation and high aspirations. Specifically, he wanted to be a filmmaker. Yet unlike Kyle, he produced fewer completed projects during the span of my observations, and his productivity in the center seemed to decline over time, as did his behavior. Ultimately, his behavior, along with that of his close friend Xavier, was deemed so disrespectful and disruptive that the two were asked to stop coming to the center. They were perceived by staff as wasting time at the center and not doing any productive work. For Jaime, the freedom of this space, which allowed him to work on his films as he wished, was attractive. But for this particular youth, this freedom, paired with a desire to create, did not lead to an empowering outcome within this space. Jaime was constantly working on film concepts, and had at least one finished script that he passed around for feedback, with filming being the implied next step. Fred would relay to me that Jaime was often emailing him scripts and asking

for feedback, though Fred expressed frustration about this endless solicitation without movement forward. Fred would encourage Jaime to start thinking about next steps, including casting and storyboarding the film, and scouting for locations, but Jaime did not often seem interested in following these steps that Fred laid out for him as typical, conventional steps to be taken for the production of a film.

The two short films that I did observe Jaime complete were horror films, which were made in an ad-hoc, improvisational manner, without scripts. Like other youth, Jaime was inspired by and drew on his pop culture reserves to conceive of his films. One film, “Level Four,” was intended as a commentary on a controversial bio-lab in Boston (a topic initially suggested by Fred), though this message was somewhat lost in the execution as it became a documentary-style gross-out horror film complete with youth actors “vomiting” “blood.” His other film also followed the popular style of fake documentary horror films in the style of *The Blair Witch Project* and *Paranormal Activity*, with which Jaime was enamored. It was entitled, “Beneath the Darkness,” and starred Xavier as a haunted young man in an apartment. Fred and Jaime even taped a “director’s commentary” track for this movie. (As this film featured a great deal of objectionable language, it was another project that was unlikely to be shared with funders.)

Yet as time went on during my fieldwork, Jaime’s film-production related activity diminished to the point where he was mostly spending his time designing movie posters to go along with his movies, utilizing graphic design programs. Though Jaime had a passion for film-making, he also tended to be impatient in the planning and execution of these projects, and found it difficult to maintain interest and sustained effort that was necessary to not only create a film, but one that approximated his vision of a “professional”

product like the ones he admired so much. The shift in his activity, along with the way he put together his earlier films, and his avoidance of the film production steps advocated by Fred, spoke to some of the difficulties of maintaining youth activity and engagement in this open environment which encouraged and supported youth-directed projects. In his earlier completed films, Jaime's production process allowed him to jump right into the "fun" aspects of being a film director – loosely conceiving of a story and jumping right into filming. When faced with pressure to engage in more complex, long-range planning, he retreated from the film creation process further into activities that seemed doable and enjoyable – and which still allowed him to draw on his stores of pop-cultural knowledge to produce products that approximated the professional qualities he strived for, but which could be accomplished in a much shorter time period – as with the creation of movie posters. This is not an indictment of Jaime personally – he was a bright and ambitious young man with promising talent. His case illustrated some of the difficulties of continuing engagement with highly motivated youth who may also resist the guidance and expertise that is offered to them, as well as the frustrating disconnection that can occur between youth's goals for their end-product and the technological skill, processes, and investment of time that is necessary to realize these goals.⁵

The youth creations within The Free Program pointed to both the potential and limitations of spaces which allowed independent agentic creation by highly motivated youth. Youth were engaged and driven by their desires and emergent identities which were heavily shaped by popular culture. Youth whose interests are based in pop culture

⁵ Kyle, also, conceived of a documentary film project – a local history of the apartments and the neighborhood – which never got off the ground for similar reasons.

want their creations to seem professional, in a way that allows them to validate these identities and become participants in the cultural landscape which is of value to them and their peers. Though other studies have focused on the hobbyist nature of youth productions, suggesting that professionalism is not as important to youth as the act of creating and sharing, I was struck by the professional aspirations of many of the active users of TFP, which undoubtedly connected to their strong motivations within this space. For them, the ability to create “professional” products, which could signal their entry into cultural worlds, sparked feelings of accomplishment which further fed creativity. This sense of professionalism in creations was generally easier to accomplish if projects were shorter in duration and smaller in terms of complexity of technical skills and necessary steps – it was easier for a young person to complete a three minute video or song than a full movie. The satisfaction achieved by completion of a project that minimally met youth expectations and goals was likely to lead to continued creation and production of similar projects. A short, finished project could also be easily shared with peers and with a larger internet audience, which were powerful draws for the young people I observed.

Youth Agency and Identity in The Learning Program

What happened when similar youth were engaged in a program with more structure, boundaries, and longer-term goals? This section examines youth creations within the second scene of agency I observed, The Learning Program.

Introduction to Digital Learning Through Modules

In contrast to the open, less structured space of TFP, The Learning Program developed a summer-long (and for some youth, years long) structure, intended to aid youth

up more specific *ladders of participation* – the two major ladders being a) civic and community engagement that led to social change through technology and b) the acquisition of technological skills and exposure to (and hopefully potential interest in) STEM careers. Yet even within the structure and guidance of this program, the agency, interests, and desires of the youth involved interacted with and affected the outcomes of the creation processes I observed. Individual and peer-related uses and understandings around technology, as in TFP, did not disappear in these informal learning environments, but rather resulted in rich expressions when youth interacted with these *scenes of agency*. Even in this environment, with stricter rules and requirements for youth participation, much can be understood about these urban youth as raced, classed, and gendered participants in a technologically-dominated culture in which they were energetic participants, but operated from marginalized positions.

Though I have already laid out the structure of TLP, I wish to highlight some of the key differences I observed that especially distinguished this program from TFP as I have just examined it. These differences serve to particularly distinguish this program from TFP in terms of structuring youth engagement with technology and digital learning in ways that create those particular *ladders of participation* and *scenes of agency* with which youth engage.

First, youth in TLP being were required to learn ALL the modules of the program, regardless of their desire to learn them, comfort with them, or previous experience with them. Rather than being able to stay within their comfort zone and learning/using technologies they were already familiar with, or only learning the technologies they needed in order to create products they have previously decided they want to make, youth in TLP

understood that, as part of the program, they needed to learn the basics of everything from music creation, to robotics, programming, 3-D fabrication, and more. This initial expectation and the experience of this exposure may have been frustrating and disconcerting to some youth, but it set the expectation that technological engagement/creation and its attendant possibilities lay in an expansive field. It presented youth with a larger paradigm of what the tools of technology were – and what they could potentially create with them, beyond reliance on their pre-existing repertoires of cultural knowledge.

Second, TLP set expectations around group work and peer collaboration that fell squarely within the ideals of the program of the whole. Youth were expected to work (and teach and learn) in groups to create something together by the end of the summer which would solve or ameliorate a social issue that affected their community. Different from the TFP peer collaboration groups that formed on the basis of common interest, friendship patterns, and pop cultural interests, TLP groups brought together unfamiliar peers, who were often from different areas of the city and had different backgrounds, in the spirit of community-building and civic engagement, through the processes of learning, teaching, and creation. Pushing youth out of their comfort zones and their familiar patterns of sociality through and with technology positioned them differently within this particular *scene of agency* so as to encourage them up the particular *ladders of participation* espoused by the program. While we saw how peer feedback and interaction in the creation process were important for some of the young people in TFP, TLP built this into the program in very specific ways – by building in processes of reflexivity, negotiation, and feedback with the larger group which encouraged participants to review their projects during the creation process by presenting it to the larger group for feedback. This allowed

for revision and improvement before the final project exposition for the community at the end of the summer.

Invoking Goffman's theory of identity, scholars have noted the importance of providing youth with spaces to engage reflexively with their technological productions—seeing themselves within their productions by engaging with others looking at their productions (Goffman 1959; Buckingham 2008; Weber and Mitchell 2008). Weber and Mitchell note that, “[i]n examining the processes of youth creation, we witness reflexivity and negotiation as youth gaze at themselves and each other, critiquing and consuming their own images, interests, and identities” (p. 41). The two programs I studied highlighted how the scene within which these processes happen can ultimately influence what comes out of this process of interactive reflection and negotiation for particular youth within particular environments. While in TFP, these processes of interaction and reflection were much more informal and reinforced the aspirations of individual agentic youth, the more formal, locally/community-based processes of TLP connected youth interaction, reflection, and negotiation to the goals of the program. Though youth created and saw themselves reflected in their creations and in reactions/feedback to their creations, the different CTCs offered different settings and thus different potential lenses for youth to explore new or alternative versions of themselves (performers, programmers, engineers, community leaders, etc.) In this manner, for different youth, CTCs can provide different configurations of bonding social capital – which allows youth to build horizontal ties within peer communities that are mutual and supportive – and bridging social capital, which connects youth to weak ties outside of their immediate networks that can help them “get ahead” (Granovetter 1973; Briggs 1998; London et al. 2010). Both are critical

for youth development, but youth are highly involved in their development. Their priorities and interests direct them towards certain kinds of social capital, as does the CTC environment.

Finally, the structure of TLP managed to compensate and correct for some of the challenges I noted about TFP regarding the maintenance of youth interest and motivation in technological creation. TLP provided scaffolding for the creation of complex projects which may have involved frustrating and difficult learning curves around technology, and which took a long time to complete – but which represented a greater ascension up the various *ladders of participation* made available to youth. TLP built into its structure accountability and expectations of responsibility on the part of each participant. Much of this went along with the establishment of involvement with this program as a summer job, which provided a paycheck and lasted all summer long, with established hours of operation. In this way, the program provided basic incentives for youth to stick with the program and their group projects when their own motivation may have flagged or frustrations may have arisen. The establishment of teaching, learning, and project groups, to whom one was accountable throughout the summer, placed responsibility on each youth to be accountable to each other and to the youth and community centers they served. And beyond just being a summer program, as an annual summer program, TLP endeavored to present itself as something a young person could be part of for years, even returning as a college mentor once they left the program. That is, responsibility and accumulation of seniority did not characterize a youth's involvement with this program for a single summer, but could present opportunities that solidified their loyalty and feelings of obligation

to the program for many years. In these ways, TLP provided a scene of agency that safeguarded in some ways against a participant's failure to complete the program or a given project (as discussed earlier) and led to the completion of many fairly complex and interesting group projects which illustrated the intersection youth participants' burgeoning tech skills and their elevated civic and social engagement, which I will discuss later in this section.

Entry Into the Program Through Bricolage

Before youth could take on the group projects or begin teaching to local children's groups, they needed to gain familiarity with the various modules of the program. The first weeks of the program were spent moving from technology to technology, taking lessons from experienced adults and youth teachers, and completing small activities and assignments with each technology. This period also served to engage youth participants in each technology and to get them excited about the possibilities of creation and production offered by the various modules, many of which new students had not been exposed to before. In this way, there were many similarities to the individual levels of youth engagement expressed by youth in TFP. In many of the module activities, TLP drew upon and encouraged youth's interests and desires within popular culture and their repertoires of knowledge. Youth were drawn into these technologies through their connection to the products, images, and consumer culture texts that they were already familiar with on an individual level. The program began with this association, but steadily moved participants towards a more communal and civic-oriented engagement with technology throughout the summer.

Pop culture was still an entry point for the young people I studied in this program. It shaped their initial orientations to the tools presented to them; indeed, it was used by the instructors as a way to frame lessons and to give students a “why” to create. For instance, they were encouraged to recreate their favorite songs in Hyperscore. The lure of making a video game was often touted for older participants and children alike as a desirable goal. The students themselves often turned immediately to their pop cultural knowledge when presented with the task of making something within each of the technology modules; as with many of the youth at TFP, their desires and interests around what to make and do with the productive and creative potential of technological tools were profoundly and vividly shaped by the media culture in which they were immersed. This could be seen, for example, in some of the short Scratch video projects youth made during the learning phase. In this module, youth learned a visual programming language which allowed them to create and move cartoon characters (“sprites”) within scenes to create short movies, usually a minute or two in length. Though they could make any type of short narrative, youth who needed to conceive of and carry out a concept in a short space of time, while at the same time learning how to program. To do this, participants often turned to a familiar framework for short film-making: the commercial. In order to move into the use of unfamiliar technologies and ways of interacting with them that allowed and required them to become creators, it was helpful for participants to rely on familiar structures and narratives to orient themselves to these new relationships.

But these interactions with the modules were not just important for showing how integrated youth technological engagements are with consumer culture; rather, these interactions also provided a scene of agency for these youth which allowed them to “mess

around,” not just with technology, but with the dominant culture in a potentially empowering manner. Young people were not only explicitly put in the position of being a creator with the means of production technically, but also culturally. In this space of entry, youth’s creations within various modules demonstrated how they played around with this power, by remixing known quantities and inserting themselves in media products that otherwise marginalized or subordinated them. Their creations thus did not demonstrate passive acceptance of cultural products. Rather, they could be seen as critical appropriations, even as they incorporated the products that youth loved and in which they were highly invested. This initial opportunity to alter and rework within the module-learning process presented, for many youth, the first steps towards a transformative experience around technology engagement that connected them to the other elements of the program.⁶

In the last section, I noted the role of imitation in youth creation. Learning any new media always and necessarily involves imitation – it is an important aspect of learning how to produce cultural expressions in the first place (Poyntz and Hoechsmann 2011:303). But within many of the smaller, experimental module-learning activities, the participants did more than just imitate their favorite cultural products – they blended and reworked them, and changed them to suit their tastes, their skills, or other configurations

⁶ The central role of commercial interests in shaping children and youth culture needs to frame the power suggested by such practices (Ito et al. 2010:9). Consumer culture sets limits on young people’s cultural repertoires and often provides them with the tools and symbols that are labeled as subversive but which actually serve to encourage avid consumption and engagement with popular culture (Buckingham 2008:5). We need to consistently keep in mind that “audiences are in certain respects active in their choice, consumption and interpretation of media texts” but that “that activity is framed and limited, in its different modalities and varieties, by the dynamics of cultural power” – power that the youth in this study are proportionally denied and which these programs supply in some measure (Morley and Robins 1995:127).

of desire and ability. These activities reflected a sense of parody and irony. Others have noted how young people's engagement with pop culture lends itself to Levi-Strauss' notion of bricolage, "a construction or creation that is improvised, using whatever materials are at hand" (Weber and Mitchell 2008:43). Weber and Mitchell see identity in the digital age as personal and social bricolage: "an evolving active construction that constantly sheds bits and adds bits, changing through dialectical interactions with the digital and nondigital world, involving physical, psychological, social and cultural agents" (p. 43). Digital media provide tools and display possibilities that are well-suited to bricolage by young people. Various studies have noted the process of "mucking around" or "messaging around" as a deceptively (at least from an adult perspective) productive process for youth bricologic practices – a process of experimentation and play that gradually leads to "production skills as well as knowledge of available materials and how to manipulate them, both to create new meanings and manipulate old ones" (Weber and Mitchell 2008:44). Youth practices also evoke Barthes (1975) notion of *jouissance* – pleasure taken in the evasion of social order, from breaking textual rules, behavior rules, and task rules.

One such activity where this occurred was the "iSneaker," which was intended to introduce youth to the open-source image editing program GIMP. The structure of this activity incorporated youth's familiarity with sneaker culture, an element of urban style which places high importance on one's sneaker style and choice (Garcia 2006). In addition, the prefix "i" references the many Apple products which emphasize individuality and expression through consumption and customization. The markers of this activity signaled to youth via familiar consumer culture discourses the approach that they would be able to bring into this activity.

During this activity, youth chose from a series of white sneaker images. These were clearly branded (Nike, Adidas, etc.) so youth could start with the sneaker brand of their choice (and many youth had clear preferences). Then they designed their own sneakers by downloading images from the Internet and pasting them onto their white sneaker. Youth ended up with many individualized, personal, and vibrant creations. While some of them were abstract, many of them featured video game characters like Link from “The Legend of Zelda,” cartoon characters like Simba from “The Lion King,” or celebrities such as Michael Jackson. One youth even made a tribute sneaker after Michael Jackson’s death. Though from one perspective, these creations could be seen as passive regurgitation and engagement with consumer culture, I believe youth were interested and excited by this project because of the empowering bricolagic capacity with which it endowed them. The blank white shoes offered them an enticing canvas to appropriate, play around with, and insert themselves into “their” culture. The creative and productive power of the image-editing tool was exciting to them in this way, and their ability to rework and adapt popular texts, first by searching and collecting the images they wanted on the Internet, and then cropping, magnifying, cutting and rotating them to fit into the oddly shaped sections of the sneakers, clearly evoked the notion of *jouissance*.

While some iSneakers had cohesive themes such as The Legend of Zelda or Pokemon (video games and anime themes were very popular), many youth would put together several different pop cultural icons or characters together – creating a sort of smorgasbord of all the things beloved by the participant and particularly expressive of their individual interests. Creators would also insert pieces of themselves or their friends/loved ones into the sneakers, including initials and photos. The Michael Jackson memorial

sneaker mentioned before served as a powerful expression of grieving for a very public figure, utilizing images of Jackson, plus additional text, to create a monument of grief that connected that one youth to a cultural event in a very personal way.



Figure 2: One youth's "Spongebob Squarepants" themed iSneaker



Figure 3: Another iSneaker incorporating more abstract designs

Rather than accepting the forms of these images and icons, this activity allowed and encouraged youth to digitally and symbolically break down and reassemble cultural elements in new ways – an important lesson in assisting youth up a ladder of production

that wanted them to develop their voices in ways that were new to them, with tools and skills that opened up new possibilities of cultural engagement. As was the case with TFP and the importance of hip-hop as cultural expression for urban minority youth, this sort of reworking, reclaiming, and appropriation of mainstream culture by youth is not new. But for marginalized youth presented with technology and instruction (and permission – especially if this was not something they had done before), this scene of agency offered them a broader scope to do and share these things in a way that could inspire and motivate them to continue these practices.

The module activities also allowed youth to insert images of themselves into the media products which severely underrepresented them in the mainstream, such as video games and television/film. This ability to create media that included characters that looked like them was another empowering method of speaking back to a culture that subordinated them, through the acquisition of the means of production in some small way. People of color have historically been marginalized, both in terms of production and representation, in the gaming industry that so many of these youth are highly engaged with and often aspire to work in (Everett 2009). The tools that youth acquired in this program served to ameliorate, on a small scale, this disparity – youth got to create videos and video games *and* got to create characters who looked like themselves, their peers, and which reflected their communities.

When tasked with creating videos in the Scratch program, if participants needed human characters for their scenes, they could generally select a human character sprite from the Scratch library that looked something like them, or design/draw their own sprite with customizable hair, skin color, and clothing. This was yet another way for youth to

insert themselves into their tech creations in a way that was perhaps lacking in their mainstream media experiences. This offered a powerful vision of themselves that was not only shared with others, but reflected back upon themselves, in a way that was potentially disruptive of mainstream media discourses that did not privilege them and their stories.



Figure 4: Two Scratch sprites depicting an abusive situation

In the above figure are two Scratch characters designed as part of group project about child abuse. Both of the characters were drawn by participants (not stock Scratch characters). This program enabled youth the ability to create interactive media which both reflected their concerns and their communities. This video was a sort of “choose your own adventure” game, which presented the viewer with various hypothetical abuse scenarios and asked the user to select an action that would lead him to either suffer from or avoid abuse.

Creative repurposing of the familiar patterns of media narratives and video games as allowed by this technology and within this particular space allowed youth of color to privilege themselves in video games and cultural productions. Youth drew on their

knowledge of mainstream conventions of media production, but rather than mimicking and reproducing characters and storylines, they drew from this as a resource pool, while adapting them to their own purposes. In these initial module learning and exploration activities, youth were encouraged to take a social, playful, and open-ended approach to these technologies in order to orient them towards a more general creative attitude towards technology throughout the summer. Parry (2012) notes that an open-ended and playful space of digital learning and creation validates children's repertoires of pop culture knowledge and often results in creations that are more "playful, hybrid, and transgressive" (p. 45). This is especially powerful for the youth in this study marginalized by race and class. Creations allow/show youth speaking back to market structures that marginalize them even as they participate in and incorporate them otherwise. CTC programs like TLP offer space and encouragement and tools to try out these different technologies in configurations that can deconstruct dominant tech paradigms/representations structured by the consumer market. This scene of agency allowed them to tell different stories which drew on their available cultural knowledge, but in a larger program structured to ultimately encourage them to apply this agency socially/civically, as we will see with the group projects.

Making Things in the Fab Lab

The Fab Lab was one of the most interesting and powerful spaces in TLP in terms of drawing youth in via their desire to engage with cultural objects and offering the ability to actually make physical objects of their own design, but which still drew on their repertoires of knowledge and individual interests. This station engendered a unique level of interest and independent creation among youth – with many staying late or coming in

on their own to use the machines. The Fab Lab was completely novel in its scope and productive potential for many of the youth (indeed, for most people). As such, it was enormously exciting as a space that participants were welcomed into and told they could actually make any object, as long as they could design it (and secure the raw materials). The ability to create objects was very attractive to youth, especially with the ability to make objects in the Fab Lab which could approach the appearance of professionally mass-manufactured objects, but which reflected the individuality of the user. Brianna, for example, made acrylic earrings, and Scott made an acrylic keychain that he gave to another young woman, and which was admired by the other youth. Once, Tom, an adult volunteer, held an after-hours t-shirt screen-printing workshop to instruct youth on how they could design and print their own t-shirts, which they would occasionally do.

While I have highlighted the power of digital media creation for youth, especially low-income youth, the productive potential offered by the Fab Lab allowed creative material rewards that could be especially empowering for such youth. The making of physical objects that they not only owned, but that they could hold and show and share, could be especially powerful in a consumer culture that makes seductive promises about ownership. As discussed in Chapter 4, many of these youth struggle to remain engaged as technological consumers. A major benefit of affordable and accessible creative manufacturing technologies such as the Fab Lab was that youth could make objects, which allowed them to circumvent, in some way, the rules of the consumer economy that required money for goods – especially powerful for low-income youth who are excluded from ownership because of economic limitations. The ability to personalize these objects was also very powerful, as it inscribed the self in a physical way onto sleek and professional-

looking manufactured objects. At TLP, this was evident as youth inscribed their names into cardboard houses and stickers in Fab Lab, and onto sneaker designs in GIMP which they would print out to take home and show their parents. While digital media offers revolutionary new possibilities for replication and distribution, the growing ability to personally manufacture physical objects and inscribe themselves into an object they can hold and show off was often a proud and exciting moment for the young people I observed.

The physicality of technology and possibility for material production and manufacturing was also essential for these youth because they did not have the same capabilities at home or elsewhere. In order to share their work, they NEEDED a physical object. This was a functional need to have evidence of their creations, a need to have something that was tangible and portable. Without a working computer with internet and a color printer at home, and the knowledge of how to virtually store and retrieve their work, youth may not have been able to access what they did at the center. Without a copy of his music on a CD or transferred to his mp3 player, a rapper may not be able to get his friends to hear his latest song⁷. While for more privileged tech users, the physical becomes cumbersome, something to be done away with, the physical is meaningful and functional for the less privileged tech user.

Ascension Up Ladders of Participation Through Group Projects

While the module learning activities offered an individualized space to introduce students to new technologies which built on their interests and desires, as well as their

⁷ When socialization occurs in other spaces, on the street, etc., mobile storage is necessary.

raced and classed positions, it is within the group projects that students created collectively over the long term in ways structured by the program to cultivate a specific relationship to technology – one that connected youth efficacy around technology to social change and civic engagement. These projects offered a window into the intersection of youth agency and engagement with technology within a structured and bounded program that provided them with guidelines around what they were expected to create. These boundaries were intended to expand youth's relationships to technology, their perspective of its potential in the world, and their own ability and efficacy, both around technology and to effect positive change in their communities. Through the group projects, TLP provided the scene for youth to develop civic engagement through technology. But agentic youth, within groups varying widely in their composition and dynamics, and not always closely supervised and guided, took the assignment in many different directions. While the program sought to guide youth up specific *ladders of participation*, group projects were also expressions of youth's interpretations of the guidelines. Youth developed projects which evoked their particular local raced and classed identities within projects designed to solve a problem, and which provided a window onto their perception of social problems and their solutions. As already mentioned, the length of the program, the expectations placed on the youth throughout the summer, and the layering of multiple technologies and resources set the stage for many complex, completed projects.

Informational and Advocacy Projects

Projects generally, in their final iteration, fell into one of three categories, depending on how the youth groups conceived of how best to put the various technologies together in a way which addressed the social or community issues they had chosen. These

categories indicate common ways in which youth agency interacted with the injunction to solve a social problem through technology, influenced by adult interventions and guidance, as well as the raced, classed, and gendered identities of the youth within the groups.

A common approach for some groups was to raise awareness of their chosen social problem through information and advocacy – combining the various technologies to create projects which generally contained an artistic, sculptural aspect and provided information to its viewers in an innovative and interactive way. The goal of such projects was to provide information to viewers in an interesting and visually stimulating manner.

Through interaction with the project, the viewer would thus learn about the significance of the social issue in terms of general awareness (to draw individuals into a movement for social change) or would allow connect individual problems to social issues. Thus, such projects would ideally help to reduce incidences of life events seen as curtailing the life chances of people within the local communities. Elements of the projects also emerged as the groups together figured out ways to address their issue using the technologies available to them, which lent themselves to certain configurations.

Advocacy projects actually emerged in groups in opposition to Jon's injunction that the group projects should produce a "thing," a technological object/invention that would functionally and pragmatically "solve" a social problem. Projects that broadly informed about social problems were less in line with his particular vision for these projects. For the groups that produced these, however, their projects best represented their conception of how to address and potentially pave the way for solutions, with awareness and education as essential first steps. In this approach, groups came up with creative com-

binations and uses of the technologies, but continued to refer to and rely on familiar cultural and media narratives both about their particular issues, and social awareness and advocacy in general. While their chosen issues reflected their personal concerns and perceptions of important issues in their communities, youth needed familiar cultural narratives and information to help shape the content and form of their projects.⁸

One such project was called “Babies Having Babies” – aimed at raising awareness about teen pregnancy. This group actually situated their new tech skills within a very old craft – their major technological creation was situated within a lifesize paper maché pregnant belly sculpture (the creation of which ended up being more stressful and time-consuming than some of the technological aspects). The belly had a square hole in the middle of the belly. The group then deconstructed one of the small XO laptops given to the program, removing the screen and hardware from the plastic casing. They inserted the laptop screen into the belly, so that it could display a Scratch program, with the computer components hidden inside the belly. The Scratch video which played on the sculpture featured a cartoon baby delivering facts about teen pregnancy. In addition, they made a PICO card dispenser which handed out cards with facts about teen pregnancy. The informational content underlying this project was based on internet research conducted by the group during the project phase where they looked up facts and warnings about teen pregnancy – such as a statistic that teen mothers are less likely to finish high school.

⁸ Since the groups chose their issue through consensus, not every youth necessarily had a personal connection to the social problem - meaning that their approach to the project was much more theoretical and pragmatic and thus they would rely even more on outside narratives and information to shape the content of their project.

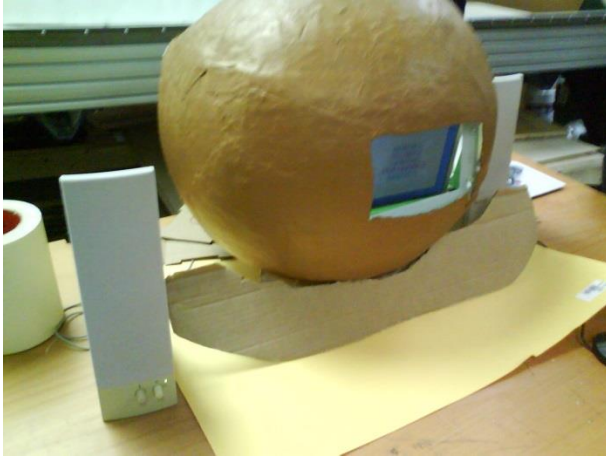


Figure 5: The "Babies Having Babies" Project

Thus, the focus in these projects often on the development of innovative and interesting informational delivery systems, while the youth informed themselves and others on particular social issues. Yet the focus on the technology and the complexity of putting the projects together on time meant there was a heavy reliance on familiar narratives about social issues. The actual informational content generally came out of youth's previously existing understanding of social issues, which was often fairly limited and based on cultural and media narratives, or based on independent internet research. While youth were savvy "Googlers," media literacy regarding evaluating information on the internet was not addressed. Generally, content resulted from a combination of the two.

One particularly interesting example of this with the Babies Having Babies group occurred while I was sitting in with them in one of the early planning meetings. They had decided on addressing pregnancy in some way, and were discussing the specific focus. As I tried to help them think about how to address this issue, a couple of the teens kept suggesting showing how unhealthy a "crack baby" was, and it was clear they understood

the concept of drug-addicted babies born to teen mothers as dramatic and “real” issue, despite its status as a debunked cultural myth which fueled middle-class fears about poor, minority, urban families (Coles 1993). I suggested that teen motherhood in general might be a more immediate and general concern to address rather than the phenomenon of “crack babies” – which they did eventually. Yet it was fascinating how entrenched this dramatic notion was to them, and how they kept repeating this vivid phrase. I do not think that those who were insisting on this topic had personal experience with babies born with drug addictions – rather, they were drawing on entrenched cultural narratives that shape how their communities have been perceived by others. Through this example, I saw how these youth embodied and accepted these damaging and powerful myths which functioned to shape their perception of their own community’s issues, and thus the solutions they might suggest.

Another example of an awareness/advocacy project was the “It’s Not a Big Deal, It’s Just Our Lives” project, done by Imani (15, Working-class, African-American), Jocelyn (15, Middle-class, African-American), and Brianna, which focused on the issue of gun violence. Once again, the group sought to deliver a message, in a powerful way, which they deemed important, using their new technology skills and resources, combined with their ability to find relevant information and content online. They found an internet image of a previously-existing gun violence sculpture which depicted a gun with its barrel tied into a knot so that it could not shoot. In Fab Lab, they made a small replica of this sculpture out of plywood, which they painted black. Then they attached red acrylic pieces, also cut in Fab Lab, and attached them to the handle. Inscribed into the acrylic were anti-violence poems written by Imani. Initially, they conceived of inserting a video

screen into the sculpture to play an anti-violence video they would have created, but this ended up not being feasible. This was a well-done and visually striking project which combined engagement with a social issue and technical achievement in the construction of the sculpture, though it didn't end up incorporating many modules beyond the Fab Lab. It ended up having a strong artistic and symbolic effect, rather than relying on statistics and facts about gun violence. It was also unique in incorporating the creative writing of one of the participants as content, in Imani's poems. Ironically, the large gun sculpture was used for some typical gun play among other youth in the center, when Sidney posed for photos of himself holding the gun as if it were a weapon. Though youth were hard at work in engaging with the spirit of the program and the group projects, their playfulness and casual interactions with each other in their downtime reveal the interplay of the program's guidance up *ladders of participation* with youth's pre-existing relationships with these symbols and narratives.



Figure 6: The "It's No Big Deal, It's Just Our Lives" Project

Consumer Product Projects

The next category of group projects took on a market approach to solving social problems, usually by creating a single product utilizing the various technologies, which would prevent or solve a problem. This was generally accompanied by informational marketing materials, such as a Scratch commercial, which informed viewers about the benefits of the product. As previously mentioned, these projects fell more in line with Jon's vision for the projects, especially during the second iteration of the program I observed, as he wished for the groups to develop a singular invention which could ostensibly solve a problem in and of itself, rather than simply generating awareness of a social problem. The purpose of these types of projects, and Jon's injunctions about them, was to cultivate feelings of efficacy and civic engagement around technology through the solution of a problem by way of creation of an actual physical object, an invention. These projects also worked to cultivate youth's vocational inclinations towards STEM careers, one of the fundamental aspects of TLP's mission, through cultivation of their identities as technological makers and inventors. I refer to this category as consumer product projects because of the way they reflected an ideology of reliance on technological progress in a capitalist market to produce and distribute solutions to social problems, more so than the other project categories. Within these projects, this orientation to the fusion of vocational technical skills and social progress was evident both in the adult guidance within the program, and youth's pre-existing understanding of how problems can be solved via manufactured technological solutions, and how such solutions need to be marketed to ensure their adoption and success. In these projects, students are positioned much more than in other projects to create community change through established market capitalist mechanisms, rather than critiquing them.

The comparison of these projects also highlights the different (and perhaps preferred) *ladders of participation* presented to youth in this program. Others have noted that digital learning and media education programs, because they have so many possibilities within them, can contain potentially conflicting goals: “the goal of producing work in a vocational vein conflicts with the goal of empowerment and development of youth voice” which has been described as the tension between “more expressive and vocational forms of media education” (Ito 2010:305). To this I add that there is a tension between work that promotes working and succeeding within existing social structures, and work which seeks to critique and overturn existing structures. The emphasis on vocational training and aspiration towards STEM careers represents an approach which attempts to build youth’s bridging capital – which will allow them to advance within an unequal, capitalist system in a way which accepts it, rather than seeking to fundamentally alter it. This approach reflects very much the current spirit of technological entrepreneurship and neoliberal approaches which emphasize market approaches to social problems. For marginalized youth, enfranchisement and self-identification into this system may lead to future career aspiration and accession up economic *ladders of participation*, yet the goal of TLP is also to create future STEM workers and entrepreneurs who connect what they do to improving their communities.⁹

Some of these product projects sought to solve their chosen problem on a large scale, by creating a product that would ostensibly need to be adopted and implemented throughout the city. These products were public in nature – they incorporated the various

⁹ This goal also connects to the structure of TLP as a source of employment. The program uses a traditional youth labor model which serves to show them the viability of participation in traditional paid labor as part of the STEM workforce.

technology modules to create a structural solution to a public issue, and were intended to be utilized by the community as a whole.

- **The Smart Station:** The community problem addressed by this group was pollution, and they sought to come up with a way to use alternative energy in the city landscape. The “Smart Station” was their redesign of a typical MBTA Transit Station to make it more energy efficient. They created a miniature Lego model, incorporating PICO elements, suggesting energy-conserving engineering refits, such as having motion-sensitive escalators which only activated when needed by travelers, rather than running continuously, and power supplied by solar panels.
- **Billie the Trash Can:** This group also addressed a city environmental issue – how to discourage littering, encourage recycling, and educate the public on the importance of both. “Billie” and his friends were an imagined series of trash and recycling cans which would be placed throughout city parks and other public spaces. These receptacles “talked” to passerby – they had animated faces made out of XO screens (like the Babies Having Babies project), which were motion sensitive and thanked the user for using them. This group created one life size prototype can, the titular “Billie the Trash Can” and also created a Scratch cartoon/commercial featuring the rest of the cast of can characters.



Figure 7: “Billie the Trash Can” and Informational Poster

Other projects embraced the consumer market model more fully, boiling down social and community issues to individualized solutions to private troubles. Within these groups, the need to invent a single item which would address a problem often led the group to this type of creation during the course of group work and discussions. It is interesting to see, in these projects, how the emphasis on “solving a problem” began with a structural social problem but evolved to locating the issue within the individual experience so as to produce a product which could be owned and utilized by an individual to solve the problem within the individual’s experience. Here, the structural constraints and boundaries of the program worked to remove the civic engagement element of the group project. Some of these projects included:

- **The Locker Security System:** The social and community issue this group chose was crime, specifically theft. They narrowed this problem down to the problem of theft in school, and how to prevent students from stealing from another. Their invention was a technically impressive locker security system. It involved the installation of a camera inside a locker. If the locker is opened, the camera automatically takes a picture of the opener, and sends it to the owner’s mobile phone, revealing the intruder. This group built a working prototype of this system, including a cardboard model locker. Here, the community issue of theft and crime is transformed into a product which helps the individual prevent (or at least pursue) theft committed against himself.
- **The Alarm Bed:** This group was trying to address the issue of unemployment in the community. They focused on the idea of job loss, ultimately zeroing in on the notion that individuals sometimes lose their jobs because they are late to work because they oversleep. Their invention was a new type of alarm, which attached a PICO buzzer to a “bed.” When the alarm went off, the bed started buzzing and didn’t stop till the sleeper got out of bed, thereby circumventing the sleepers ability to turn off the alarm while still in bed. Here, a very complex social problem is understandably reduced to a simpler, individual problem which can be addressed with a single invention. It was also interesting here how the problem of unemployment was conceptualized in a way which blamed the individual for job loss – through oversleeping and lack of discipline to get out of bed. In this way, the youth participants reflected dominant ideologies about the underemployment of low-income workers in urban areas that serve to reinforce inequality.

The Critical Projects

The third category of group projects offered strong social critiques, in that the social issue addressed, and its solution, was drawn from the raced and classed identities of the group members, which they were allowed and encouraged to express in the safe and supported spaces of their groups within this program. These projects spoke powerfully to institutions of power that the group members felt subjugated to in their everyday lives, and offered critiques of these powerful, marginalizing systems. It is within these projects that the youth creators took on the most potentially empowering positions in which they were encouraged to “speak truth to power” through their new technical abilities and the resources of the program. It is within these groups that some of the most “at-risk” youth were provided *scenes of agency* which validated their marginalized position in society and allowed them to create in ways that validated their voices and experiences.

Groups were placed together in a number of ways, with some being assigned so as to be diverse, and others being self-selected by the youth around friendship and familiarity. One particular type of group was assembled by Nancy by virtue of their shared identity and similar level in the program. She generally would form one group each cycle comprised of young men of color who she regarded as potentially “at-risk.” They were perhaps not doing well in school, or had scrapes with authority, or troubled home situations, in their everyday lives. Nancy felt that some of these young men were perhaps at risk of not finishing the program. Her placement of them together in groups was a strategy by which these young men could be with peers that they identified with and could grow alongside in the program. They could also be more supported by the staff while

stronger and more experienced groups could work more independently. While this placement had a remedial function to support potentially weaker participants, these groups ultimately produced the most socially critical creations, which built on social problems as experienced from their particular positions – and which critiqued the social institutions by which they felt victimized. In this space, these boys truly spoke to their marginalized positions, gained power through the combination of tech skills, guidance and the space to create together an expression of their common experience that they might otherwise not have felt comfortable doing. The projects represented a striking example of the dialectical mode of identity wherein their growing technological agency reflected their experience of inequality and marginalization, which was then reflected in their creations. Though these groups required more support than some of the other groups, it is telling of the transformational possibilities of these spaces that they ended up with the most oppositional projects.

Both of the projects in this category specifically spoke to the abuses and injustices these young, urban men of color felt they, and people they knew, experienced at the hands of police and the justice system. Their projects worked to confront, in a potentially controversial way, what they saw as abuses of authority by police, especially around profiling and targeting of young black men.

In 2008, the group designed a website called Coptube which was intended to solicit and broadcast videos and stories of police abuse of authority. This was conceived as a sort of Web 2.0 crowd-sourcing project, where any user who had video-recorded an instance of a cop's abuse of power, or otherwise wished to share such an account, would be able to. The group perceived the powerful implications of a central hub of information

and shared experiences of those who experienced this type of abuse, in addition to information which would target and identify the abusive police officers. Jon spent a lot of time working with this group, both around the initial idea conception and the technical aspects of building the website. Creation of a multi-media intensive website like this proved difficult, especially since these youth were just beginning to learn many of the skills around website construction. The making of the website required expertise in areas the youth weren't learning in the program, and thus there was an intense learning curve that couldn't be achieved during the program. They ended up with a basic website mock-up they were able to present. Yet, the substance of the project, and their involvement in its creation, opened up powerful possibilities for them around voice, technological expression, and creative power. They were able to share their experiences in this area, not just within the group, but in a way that could shift that experience to a potentially public expression that would call attention to their shared experience from a marginal position.

In 2009, after scrapping a failed project, several of the boys began working on a LED t-shirt called "CIA: Corruption in Authority" which was similarly intended to call attention to abuses. As they wrote on their wiki, their goal was:

"To create a produce that provides awareness about 'C.I.A.'. This Project will produce 'CIA' conversations and bring it to the end. Everyone is a victim to corruption in authority whether directly or indirectly. Brining [sic] an end to this would make our environment more peaceful and can potentially build a better relationship between community and the police departments around the country."

LED lights in the shoulders of the shirt simulated police lights, while text was screen-printed onto the shirt which further described the problem. The group's final mock-ups of the shirt are below:



Figure 8: CIA Shirt Design (back)



Figure 9: CIA Shirt Design (front)

The shirts featured a number of messages and sayings reiterating the spirit of the critique: Striking out “Corruption in Authority” and “Bad Cops”; “Support the Police, Beat Yourself Up,” “Justice Delayed is Justice Denied,” and, on the STOP sign: “STOP! The Brutality, The Warrantless Searches, The Falsified Evidence, The Violation of Rights, The Excessive Force, Abuse of Authority.”

This group sought to make this message public through the public-wearing of this eye-catching T-shirt, as a sort of walking billboard. Though they were only able to create a prototype, the grand plan would be to mass produce this item so that the message would spread – leading to activism through fashion. While the Coptube website was never completed, the T-shirt was a finished project that they boys proudly wore. The CIA project benefited from being intensively aided by an adult with expertise in the blending of technology with fabric. This volunteer spent many hours with the boys working on the T-shirt, since the LED/embroidery element was not a standard module of The Learning Program.

It was within these group projects that I observed the development of youth voice through technological creation in a way that clearly contained transformational possibilities for the youth I studied. Rheingold (2008) defines youth voice as “the unique style of personal expression that distinguishes one’s communications from those of others” – the development of which:

“...can be called upon to help connect young people’s energetic involvement in identity-formation with the potential engagement with society as citizens. Moving from a public to public voice can help students turn their self-expression into a form of public participation. Public voice is learnable, a matter of consciously engaging with an active public...” (P. 101).

It was within these critical projects, coming from some of the most marginalized and “at-risk” participants, that the development of this type of voice, which connected them to the world as public citizens and participants, was witnessed as an important effects of this particular scene of agency. CTCs like this offer youth of color spaces to use technology and media production, which originate as a means of production owned by the privileged classes that marginalize them, in a way which allows them to turn these tools upon that world. Everett (2009) has cited this era as setting the scene for an “African Digital Diaspora” in which marginalized groups can use the master’s tools in subversive ways that speak back to power.

CTCs are youth-oriented social spaces which emphasize *scenes of agency* connected to technological engagement. They present *ladders of participation*, which start with youth engagement and interest, and are potential spaces for the enactment of “new black public spheres” where youth’s outside, popular, peer-oriented interests are validated. Their position as creative, productive, and meaning-making individuals is recognized but slowly and subtly directed by the public, civic-oriented nature of the CTCs. The

projects show how the outside world/interior lives of technologically-engaged youth intersects with the CTCs as a public-sphere paradigmatic space. This points to the potential for a true public sphere that engages youth, but one that is rooted in the real world and acknowledge youth complex relations with technology, each other, and their social worlds.

Spaces of Youth Resistance in the Program

Though most youth participants threw themselves into the spirit of the program and adhered to guidelines as best they could, there were also ways in which teens interacted with these *scenes of agency*, particularly within the group projects, which led them to diverge from the guidelines and intended structure. In these moments, youth produced creations which seemed to express their individual and peer group identities, and expressed the desires and aspirations they brought into this space, rather than embodying the mission of the program. These moments highlighted the continuing tensions and interactions between the participating youth, and the ways they are drawn to create through technology, with the goals of the program in which they are participating. In these moments of divergence, though youth could be perceived as not fulfilling the goals for their project, their creations, in unacknowledged resistance to the instructions, reflected their persistent individualized and peer-group identities. These identities emerge in conjunction with their cultural knowledge and resources, and demonstrate what may be *really* important or attractive to these youth when it comes to expression through media and technological creation.

One example of this occurred during the second cycle I observed, when the groups were expected to present their completed projects to the group mid-way through the summer. This exposition was intended to ensure that the groups had completed something at the mid-point, and to get them practicing their presentations before the final Project Expo for the community. One group of three African-American female friends were working on a project intended to prevent child abduction. But when they presented their project to the group, it was clear they had spent most of their time putting together an accompanying video to the project. This was common in many projects. As has already been mentioned, a “commercial” video was a common way to incorporate video production and Scratch animation into the group projects. However, the girls’ video had little to do with the substance of their project. Instead, it served to introduce and feature the girls themselves as the “stars” of their video. The video featured many photos of the girls, both individually and as a group, with their names superimposed in flashy fonts across the images, set to a popular song. The video was ultimately a vehicle for self-presentation within their own movie, and a celebration of their friendship. Afterward, in interview, Jon indicated that he saw this as somewhat disappointing as the mid-way point for a group project; it was entirely about the girls themselves as individuals, and came across as a vanity project, rather than accompanying a project that was intended to improve the community.

Though not intended as a deliberate act of resistance by the girls, the creation of this video, rather than focusing on the social change issues they were *supposed* to be focused on, demonstrated a sort of resistance to the boundaries and structures of the program. Jouissance and power through play was not limited to module-learning activities,

or the more open space of TFP. It could emerge as a way to act in resistance to the strictures of this space, which was intended to be empowering to these young people in particular ways. Youth could still act on their identity and enact agency in ways that allowed them to produce something more meaningful to *them*, as these girls did. To create a movie, starring themselves and their friendship, putting their own names center stage on a screen, and presenting that to their peers and potentially to a larger audience, I believe, was attractive to them. It was a seductive enough idea that it was easy for them to get sidetracked by a project which celebrated and validated their publicly-presented image of themselves. Their video involved taking and collecting pictures of themselves, editing them together, selecting fonts and adding text, incorporating a musical soundtrack – rather than focusing on the potentially more remote issue, and attendant greater frustrations, associated with solution of a community issue through technology. More relevant and powerful to them than solving a community issue was seeing themselves represented within a media product. This recalls once again the power these environments hold for presenting marginalized youth opportunities and resources to create media with characters that look like them, or live lives similar to them, in a media culture with a paucity of such characters. In this instance, the girls took advantage of this opportunity to create a media product that starred themselves – offering them a pathway to even greater validation within a popular culture where representations are key. Paying attention to what youth are expressing when they create, even when these creations perhaps frustrate adult mentors, offer insight into young people’s investments in digital learning environments.

Cycles of Inequality and Passivity

As with TFP, outside hierarchies and inequalities found their way into these egalitarian, community-based learning spaces, and could inhibit some youth from ascending *ladders of participation*. Not only did youth bring their own creative intentions and priorities around identity work into these spaces, they also recreated cycles of inequality and passive participation that characterized their own engagement and comfort with technology, as well as their pre-existing patterns of participation in peer-based group work. Though TLP worked very hard to create a space where all youth became skilled in the new technologies they learned, were equally involved in their group projects, and were able to apply their new skills to the finished project, sometimes the group project concepts became so advanced or complicated that they required tech skills beyond those of all participants. In addition, in the rush and pressure to complete projects for the Project Expo, sometimes the bulk of complex project work would be taken over by those who were best equipped to do it, especially if the project involved a technology that was not one of the basic modules learned in the program. In these situations, some youth took on more passive, peripheral roles within their groups, often having to sit beside the more “expert” youth participants, observing how they accomplished the needed task. The independence of the groups and the autonomy they were granted throughout the summer, though beneficial in many ways, could also lead to the reinscription of these patterns of passive participation. Because this level of independence led youth in many different directions in terms of the pursuit of group goals, it was not surprising that in some instances, this direction would be towards hierarchical organization by the youth, especially when more skilled youth were paired with novices.

In this way, these structured but informal learning spaces could unintentionally reinforce inequalities that had already been established as influencing technological engagement and participation, especially with regard to gender. I observed this with the Locker Security Project mentioned earlier. This project utilized some advanced programming and project elements that were not part of the modules many of the youth had learned, because they were not sufficient for the programming complexity needed for this project, which involved a picture being taken and sent to a mobile phone. This action required a bit of programming that was out of reach for the beginners, and so was mostly done by the more advanced programmers – who happened to be male. During the later stages of work on this project, it was common to see this group working in the following configuration: a couple of the more advanced programmers, who were boys, working on a laptop, with some pieces of circuitry around them, working on code that would send a picture from a device to a user’s mobile phone number. Other members of the group, mostly female, would be sitting beside them looking on. Though the girls could perhaps learn something about these advanced programming practices from observation, this sort of involvement was much less active than typically stressed within the program, and functioned to reinscribe the space in ways that re-emphasized it as a male-dominated, male-as-expert space that, in many ways, this program tried to avoid.

Others have noted that gender inequalities can get reproduced in situated learning environments which aim to counteract girls’ marginalization in STEM fields. Cunningham (2011) discusses girls’ participation in technology learning environments as “legitimate peripheral participation,” in which girls get sidelined during learning experiences in ways that reproduce gender hierarchies and fail to help girls move into more central roles

(p. 1382). In these situations, these carefully cultivated learning environments can backfire if it leads to a stagnant and frustrating experience that does little to advance girls' interests in technology. While I did not hear any girls specifically express frustration about their position within their groups, I certainly observed many moments of frustration as youth worked on these difficult projects which stretched their skills, patience, and determination. Having to adopt a passive stance within one's group because of one's lack of skills in comparison to a peer's more advanced skills was not likely to help any youth feel more effective and empowered in terms of their skills or ability to create.

This potential for passive or peripheral participation was also present for youth marginalized in other ways, as with the "at-risk" groups of boys who did the critical group projects. Putting together groups of boys who were similarly (un)skilled and new to the technologies had a beneficial effect – there was little chance of more advanced youth taking on a dominant position within the groups and sidelining other boys. So, within these groups, not only did the boys share a social background which communally informed their group project, but their skill level meant they were generally on the same level and so were learning together throughout the group project. To provide them the extra guidance they needed, they were often supported by expert adults – which prevented hierarchical formations within the peer group. It was especially interesting when the CIA T-shirt boys spent an extended amount of time with Nina, the female expert in digital textiles and LED embroidery. This relationship subverted the typical gender paradigm around technology, with the female technology expert mentoring the young men – a very uncommon configuration in the environments I observed.

Conclusion

In this chapter, I used youth creations within digital learning environments to show how spaces that sought to empower youth through technology interacted with youth agency and identity in ways that complicated notions of “success” or “failure” around technology engagement, creation, skill-building, youth voice, and civic engagement. These spaces can position youth as important actors in their technological experiences, but can also position them within structures that place them in subjugated positions, or replicate inequalities within these open learning spaces.

In The Free Program, I found an open environment which gave youth identity and individualistic agency primacy – a space which was attractive to youth with specific and passionate aspirations and interests who could “geek out,” while more casual and social-minded youth could “mess around” with little adult interference. Adult guidance occurred in configurations that met with youth approval, which aided in their ascent up self-defined *ladders of participation*, or goals for themselves. This sort of configuration was very attractive to youth who had passion, were comfortable with technological play and exploration already, or who were drawn into the social configurations of the center. This was less productive as a scene of agency which sought to draw youth across agentic and identity lines, as when the center tried to adopt a more structured approach for certain projects like Digital Storytelling. A sudden change in atmosphere and rules, while accepted by some, sometimes quelled youth involvement (their agency and willingness to bring in their identities) in ways that led to lackluster projects.

In The Learning Program, I found a more structured environment, which still had pockets for youth expression, at times individualistic, but with a strong emphasis on

group work and identity, and community engagement and social change. “Messing around” was encouraged, but only within certain spaces, such as module-learning. Otherwise, goals were strongly articulated throughout the program, though youth were encouraged to be accountable to themselves and their peers, rather than to adults. Because of its structure and mission, this program generally pushed more specific types of youth agency and identity development, especially in terms of community engagement, social issues, and technological career skills (such as being explicitly encouraged to consider STEM careers.) More individualistic youth creation still occurred, but more often during breaks and outside program time, especially once the module learning phase of the program was concluded.

Across both centers, limitations to technical skills could also lead to frustrations and stalled projects, as youth’s goals and visions could sometimes be mis-matched with available instruction and know-how, even in these rich, supportive environments. This points to how difficult it can be to provide environments to aid marginalized youth in these types of projects, both in and outside these environments. In both centers, though youth were highly motivated to participate at certain levels on their own, structures, expectations, and motivating factors from the centers were also important. The motivation of a paycheck, of a “job,” was utilized at both centers to secure commitment from youth to stick with the difficulties and frustrations of project processes. For urban youth, this can also be an important motivating factor for economic reasons as well, though having a job, especially one that connects one to one’s community and allows them to explore new ideas and technology, can be as or more important to youth identity than money.

Both centers were vulnerable to the replication of inequalities within environments which strived to provide rich supportive environments and supportive “playgrounds” for urban youth. A danger of open, youth-directed environments is that youth (and adults) can recreate hierarchies which sideline youth who may fall into such positions across social environments, whether because of gender/race/class, or individual skill and inclinations. This can be doubly or triply complicated in a media or technology-based environment, because it may not be just social relationships that limit youth, but limitations to technological skill and know-how. In the centers, especially at moments of difficulty, it can be easier for a less-confident young person to defer to someone who knows more than he does, rather than to make the effort to ask for additional help or to work through a difficult technical problem.

An overarching set of goals for youth across both programs could be characterized as a desire to get youth to move out of their comfort zones, and to explore other possibilities, as well as to feel more empowered through technological and media creation, whether it is in regard to voice, skill, or effectiveness in one’s life, community, or world. At the same time, the programs wished to validate and encourage teens’ previously-existing interests and identity, and to potentially use those as a springboard for the move into other (more empowering) realms. An examination of project processes and endpoints illustrates the delicate interplay between the individual youth, peers, the program structure, and the broader social environment, which leads to many different creative projects and iterations for urban youth.

This chapter showed how youth agency developed and interacted through youth tech creations within particular *scenes of agency*, and how individuals moved up different

“ladders of participation.” Individual and groups’ results are not simply about what happens *because* of the CTC, though the structures certainly provide for different expressions of and expectations for agency. Youth creations were also highly influenced by young people’s technological habitus, and their own interpretations and experiences of mediated culture. These two elements intersected and led to a wide variety of outcomes for marginalized youth. Furthermore, youth agency and aspirations were shaped by classed, raced, and gendered experiences. These experiences shaped teens’ definitions of meaningful creation and their goals, which did not always match up with adult-defined goals for youth. Sometimes youth felt agentic in ways that did not meet with adult approval in terms of meeting goals. Though different, both CTCs attempt to incorporate individual interests, peer relationships, and other motivating factors for urban youth, such as employment and technological/media resources, to shift their relationships to technology from largely social and individualized and local, to more communal, collaborative, community-based orientations to tech creation.

In examining youth creations, I show how youth agency is structured within CTCs and yet, is also highly influenced by young people’s pre-existing interests and aspirations. My analysis shows that media production and technological creation processes involving youth, adults, and social structures, shape the outcomes of digital learning programs and spaces. These processes reflect and shape youth’s sense of agency, both personally and with technology.

Furthermore, youth’s agency and aspirations are influenced by classed and racialized understandings and experiences of their worlds. This can lead to creative and meaningful projects aimed at altering and improving youth’s worlds, their sense of agency, and

personal efficacy. It can also lead to tensions/challenges and the reinscription of inequalities that, if not recognized and attended to, can deter the development or extension of empowerment or agency.

Examining technological creations within two different agency-promoting programs furthers understanding of the development of identity and agency for urban youth. Findings show that these programs generally supply “ladders of participation” for youth to explore identities and extend agency, and provide “scenes of agency” which young people interact with, rather than seeking to overdetermine their actions and tell them exactly what to do. Thus, individual youth, and their motivations, interests, aspirations, and desires are shown to be essential for consideration in examining how to utilize media and technology production and creation to empower marginalized youth. Conversely, this chapter illustrates how various program structures and adult-oriented boundaries interact with youth agency to produce outcomes that may be more or less successful or positive for youth. The findings in this chapter illustrate how youth agency and identities interact with program boundaries and structures in complex ways – a complexity that must be better understood to provide digital learning spaces that engage with and extend youth agency, as well to build strengthened learning communities to allow youth to receive various forms of capital (bonding and bridging) that strengthen their networks within the community and their engagement with the world at large.

Examination of youth creations show that youth want to create, but often need leadership and structure to provide *ladders of participation* that really allow youth to move up several rungs, in terms of moving outside familiar patterns or extending agency to alter their approach to less-familiar tech areas, such as civic engagement and peer-to-

peer collaboration in the service of community-based goals. Youth present a spectrum of engagements with media and technology, ranging from highly-independent to highly-structured by the programs. But these engagements also stem from youth's own interests and motivations, which reveal opportunities and stumbling blocks for the use of media and technology creation as a positive and empowering force in their lives. This rich combination of youth agency and identities, and the structures of these community technology programs, show that youth identity and motivation must be recognized and validated, especially for marginalized youth who have historically been ignored in terms of voice, and have been shut out of advanced technological discourses. It is difficult to create an open learning environment that completely validates urban youth's motivations around media and technology because of its historically marginalizing qualities and its ability to replicate inequality. Yet the most positive and successful moments for youth generally come out of recognizing their agency and identity and allowing it to be extended in ways in line with the programs' goals. Successes also emerged from providing other structuring elements, other rungs on the "ladder of participation," that helped students to extend their and their peers' agency in small and big ways across the course of their participation in the program, and their creation of a project. It is extremely difficult to do this in ways that do not lead to some frustrations, or replications of inequality. Yet we must look at youth's successes, and use these findings about HOW they incorporate their understandings of media and technology, and themselves, into productive capacities, and work from this point to further develop "successful" digital learning environments for marginalized youth.

While some projects illustrated the transformative benefits of these community spaces centered around technological creativity and youth empowerment, not all projects reached this level or represented all students' ascension up "ladders of participation." Differences in youth's experiences show that there are many different "ladders of participation," which incorporate or validate various genres of participation, skills, and paradigms around media and technology. Youth's particular interests and motivations interact and are remade within the project creation process, drawing on and expanding existing interests in more empowering ways. Youth also are able to play with and remake culture when given new tools and encouragement. Youth are highly motivated by their peers within these spaces. They are also provided with the scene to explore social and community issues of import to them, and to experience civic engagement.

Neither of these centers offered a typical top-down instruction environment, though both might utilize it at times. Both count on youth interest and motivation to propel them and to ensure that they move up "ladders of participation." But the differing boundary structures of each center also illuminate how structure interacts with different aspects youth agency and identity, and different youth, to produce varying outcomes when youth are encouraged and instructed to engage with technology. This knowledge will be especially useful when developing empowering spaces for youth voice that take into account individual youth, especially those for whom expressions of voice are especially important and who can most benefit from rich and supportive spaces for technology education and production/creation. The motivations and perceptions of youth interact and iterate within spaces of production such as these to produce varied and conceptually rich outcomes, both in terms of youth and adult-defined successes and frustrations.

While inequalities reproduce themselves online and in youth's structural engagements with technology, my findings highlight the potential highlighted by others like Everett (2009), who are optimistic about the ways in which minority youth today "successfully appropriate digital media tools to speak truth to power, to enliven the promises of digital democracy, and to retrofit the digital public sphere to suit their own generational concerns and agendas." (p. 1-2). Creative communities and peer networks are often important spaces for youth engagement with and reworking of popular culture creatively. CTCs offer youth of color spaces to use technology and media content and production that come from a wider society that marginalizes them to turn these tools upon that world. CTCs as youth-oriented social spaces which emphasize *scenes of agency* connected to technological engagement, and *ladders of participation* starting with youth engagement and interest, are potential spaces for the enactment of these "new black public spheres" where youth's outside, popular, peer-oriented interests are validated- where their position as creative, productive, meaning-making individuals is recognized but slowly and subtly directed by the public, civic-oriented nature of the CTCs. The projects show how the outside world/interior lives of technologically-engaged youth intersects with the CTCs as a public sphere paradigmatic space. This points to the potential for a true public sphere that engages youth, but one that is rooted in the real world and acknowledge youth complex relations with technology, each other, and their social worlds.

Conclusion

This study offers a much-needed youth centered perspective which links the everyday technological engagements of low-income and minority youth to the digital learning programs in which they participate. More broadly, this study worked to interrogate the discourses around digital media education aimed to “empower” youth by showing how these discourses are complicated by the intersection of youth, adults, and social structures which place constraints on these actors. In these final pages, I will delineate the major contributions of this study, as well as point to directions for future research.

I believe that these findings speak to our growing understanding of young people as engaged technology users, adding to the neglected knowledge base on youth generally considered to be disadvantaged and in need of social supports around digital inclusion and participation. By illustrating *who* these youth are in more detail, and how they engage in DML environments, we gain knowledge to help develop pathways to better support them. Yet, we also see how the embeddedness of social inequality in youth’s lives and within these spaces, as well as how many interventions are shaped by neoliberal discourses. These findings point to the troubling realization that digital equality and inclusion is unlikely to be achieved solely by community-based informal digital learning programs, which provide various opportunities to youth – but in the context of an unequal world where “empowered” youth still face a world which may not reward their participation, voice, or acquired skills.

At a fundamental level, this study inquired into some basic questions that needed more study in the growing area of digital learning and youth, and its intersection with race, class and gender. Who are these youth, who have up till now often been lumped together as disadvantaged or “at-risk,” but who clearly are participating in new media ecologies? What do they want and need when it comes to technology? And how do they interact with adult-driven discourse and spaces which are trying to direct them in certain ways? As Buckingham (2011) notes, regarding the lack of precision in the discourse around youth and technology, “We can probably all agree that participation and creativity are Good Things, but until we define what they really mean, and until we critically examine how they work out in practice, they are merely empty slogans” (p. 378). I sought to contribute more specificity regarding disadvantaged youth and their technological worlds, both in and out of community programs directed at them. While positing that community technology centers and other accessible spaces of digital learning are valuable and essential to addressing digital inequality, this study is also a corrective to discourses, persistent in DML research, that positions digital media education and technological tools as a “miracle workers” or a “magic bullet” which are the key to aiding disadvantaged youth achieve upward social and economic mobility (Seiter 2008; Jenson, Dahya, and Fisher 2013).

By shifting at points to adult perspectives within the spaces, I build on work which has called for attention to “the continued presence and influence of adults in the larger digital landscapes inhabited by young people” (Herring 2008:71). In particular, I investigate the particular place of adults who occupy multiple positions, such as Teacher, Mentor, Friend, etc., to youth within these spaces, rather than adults as policy-makers,

teachers-only, parents, or media commentators, who tend to rely heavily on normative discourses around technology and youth practices. I found that adults in the CTCs often struggled to provide innovative, creative, and open spaces for youth exploration and development because of structural constraints and conflicting discourses – which are difficult to resolve institutionally on a day-to-day basis. By illustrating the boundaries of these programs, how they emerge from their institutional and social bases, and how youth and adult agency bumps up against these structures, I show how “messy” and complex this project of “youth empowerment” truly is. The frustrations, tensions, and stumbling blocks within these spaces can sometimes be emblematic of an active and engaged process of learning, but it can also undoubtedly be the manifestation of inequality and discursive conflict which illustrates the daunting task these programs are taking on of correcting digital inequalities on the ground.

With my youth-centered perspective, which interrogates the young program participants as everyday practitioners of technology, I add in an additional understudied complication in these environments, and to the discourses around youth empowerment and technology use. While research around media and technology has shifted towards the recognition that engagement with these phenomena are not passive acts, there has not been much investigation or understanding of marginalized and disadvantaged youth – and how active consumption applies to them as well as to more privileged youth. They have still so often been seen as the neglected or deprived half of the youth technological spectrum. This study is essential for beginning to delineate how these young people, while their experiences are structured by social factors, are agentic and active technology users,

with individual and diverse desires and aspirations around tech use. We need to understand these young people better as technologically-mediated citizens and consumers, as well as desiring, agentic individuals with diverse interests, in order for interventions to be as beneficial for them as possible, as well as to simply validate them as citizens, consumers, and whole people. This study shows how less-advantaged, urban teens are highly engaged, active, thoughtful and adaptive around technology and new media in their own right – a perspective which has so far been minimized and ignored as discourses of “risk” and concerns about “meaningful” and “productive” uses of technology have taken center stage.

The Troubling Role of Neoliberalism in Digital Inequality Discourses

I come away from this study still believing in the work of community technology, and the expansion of digital media learning initiatives more broadly. I find many of the emerging programs, technologies, and pedagogies to be quite exciting, especially in the ways they decenter traditional modes of learning to include diverse youth, spark their interest, and validate their ideas and contributions. Yet without a fundamental shift in the social structures in which digital inequality is embedded, CTCs remain “imperfect opportunities” for these young people because of their embeddedness in unequal systems and the discourses which reinforce them. DML initiatives themselves need to be diverse in their goals and applications in order to address the diverse identities of the youth within the populations they serve. But they also need to recognize and be cognizant of the ways in which structural inequalities can infiltrate these spaces and get reproduced, despite best intentions.

Ultimately, however, DML faces an uphill battle when considering its goals for youth within a society heavily shaped by neoliberal discourses and market forces. I find that adults are trying to do their best for youth, and youth are doing their best to participate in a technologically-dominated society and to fashion their identities given the tools around them. But all of this is occurring in a world structured by the inequalities which influence their available choices and trajectories. Many digital initiatives inadvertently or resignedly reinforce dominant configurations of new media and technology, rather than being able to wholeheartedly and fully embrace an alternative, public-sphere model of technology which is required to truly meet the social goal of “empowering” all young people. An ideal outcome of the focus on STEM careers and skills generally means a career path that moves youth out of their communities, rather than tying them more closely to them as community leaders and sources of change. As Mansell (2002) suggests, we would require a much broader movement instituting a rights-based policy¹⁰ around new media and technology, *in addition to* a multitude of programs such as the ones studied here, in order to truly redress digital inequalities. The presence of new technologies themselves cannot facilitate democratic process on their own. And as they evolve, they are constructed in ways which reinforce and recreate dominant discourses in the “global information society,” specifically in ways that are exclusive rather than inclusive.

The barriers to digital equality must be understood as emanating from these dominant configurations, if we are truly to dismantle them. The America COMPETES Act, mentioned in the Introduction, with its focus on STEM careers to enhance America’s

¹⁰ Mansell specifically speaks to policy interventions aimed at enabling the majority of citizens to acquire new media capabilities and literacies needed for functioning in the world today.

global competitiveness, clearly reflects how federal policies reinforce this “prioritization of markets over people,” and in a way that increasingly burdens less-advantaged young people (Giroux 2009:13). While the programs studied here want to present STEM careers as an intriguing possibility for their participants, Seiter (2008) notes that getting a “cool job” in new media may actually be a distant dream for working-class students, due to the numerous barriers, including prestigious educational credentials, which may still be out of reach for many young people despite the focus on STEM careers in these programs (p. 28).

Neoliberal discourses also fundamentally direct young people to see themselves as consumers, rather than citizens, and to view freedom through technology as being able to make consumer choices. The overall project of self-improvement is focused inward on the individual, who is responsible for self-monitoring, making good choices, and working hard in order to succeed (Rose 1999). While young people can resist and create new objects through and with consumer cultures, these alternatives cannot, by their very nature, be entirely resistant to the mainstream. As Giddens (1991) notes, “Modernity opens up the project of the self, but under conditions strongly influenced by the standardizing effects of commodity capitalism” (p. 196).

The inclusion of consumer culture and the valorization of young people’s choice and agency in my centers understandably follows on the CTCs desires to empower young people, but it also leads to the reinforcement of these inequitable power relations. We need to address these structures at a very basic, societal level if we want to truly empower those who are marginalized within a neoliberal society. Neoliberal discourses, on the other hand, work to encourage “good’ choices, effort, and ambition among the young

people in my study – but their individual adherence to these discourses will never be enough to combat the inequities they face across many spheres of their lives.

Limitations and Suggestions for Future Research

In my study, I was limited in my exploration of the everyday technological lives of my young participants due to the fact that my base for this study was the CTC environment, and extended forays into each young person’s home, school, and peer environments was impossible given my constraints. My data on their “outside” lives was thus limited to self-reporting, observations of the ways in which “everyday life” filtered into the life of the center, and occasional observation of select fields outside of the CTC. Future research is needed which continues to elaborate on and detail the everyday engagements of youth constructed as disadvantaged, marginalized, or “at-risk.” Additional studies are needed which spend more time with young people in their homes, school, and among friends. Although some research has been done on the perceptions of technology and youth among low-income parents, I would have loved to have this sort of data from the parents of my participants, to understand how they conceive of their children’s participation in DML initiatives. Similarly, in order to understand how adult-driven discourses shape youth’s technological worlds, additional research is needed which interrogates the positions of the adults at various institutional levels, who influence these discourses and the structures emerging out of them: including teachers, administrators, and politicians and other policy-makers.

Concluding Remarks

In my exploration of the experiences of a particular set of young people within and without two Community Technology Centers, I sought to represent a diversity of youth and experience which to this point had been under-investigated, and which I felt was essential to understand in order to move forward in the current technological moment. This endeavor has taught me that these young people, who have been marginalized by dominant discourses shaping their lives, are beautifully complex. They interact with technology in diverse, individualized, multi-faceted ways as they attempt to forge identities, realize ambitions, and be good citizens, peers, students, and leaders. The adults I met operate from diverse perspectives as well, but are united in imagining a better world fostered by community involvement and grassroots efforts. Through this work, I hope to have highlighted the importance of recognizing the power of CTCs as a space where adults and youth come together to work through many of the difficulties presented by digital inequality AND participation. However, I also agree with those who caution the growing sphere of DML initiatives, researchers, and policy makers to consider how technology contains old inequalities, and can intensify them, unless we initiate major critiques around how we as a nation think about technology and its transformative possibilities.

Appendix 1

List of Study Participants

The Free Program

Youth Participants

Amina: F, 17, Working-class, African-American (Somalian)
Andre: M, 15, Working-class, Hispanic
Aiden: M, 16, Working-class, Mixed-race (African-American/Hispanic)
Hanh: F, 15, Working-class, Asian-American
Marcus: M, 17, Low-income, Hispanic
Sam: M, 17, Low-income, Hispanic (Dominican/Cuban/Cape Verdean)
Izzy: F, 16, Low-income, White
Terrence: M, 18, Low-income, African-American
Mateo: M, 15, Working-class, Hispanic (Puerto-Rican/Nicaraguan)
Hai: F, 20, Working-class, Asian-American (Chinese)
Phil: M, 15, Working-class, Asian-American*
Kyle: M, 13, Working-class, Asian-American
Alex: M, 12, Working-class, Asian-American
Michael: M, 12, Working-class, Hispanic
Xavier: M, 17, Working-class, African-American
Aaron: M, 23, Low-income, African-American
Jaime: M, 14, Working-class, Hispanic (Dominican)
Pearl: F, 18, Working-class, Asian-American
Claire: F, 17, Low-income, White (Irish/Portuguese)
Asad: M, 16, Middle-class, African-American

Adult Participants

Diane: F, 30s, African-American, Youth Education Program Manager
Daniel: M, 20s, White, Audio Instructor
Marco: M, 20s, Hispanic, Project Manager
Fred: M, 40s, White, Video Instructor

The Learning Program

Youth Participants

Jamal: M, 16, Working-class, African-American (Part Native American)
Daniel: M, 16, Working-class, White*
Amina: F, 17, Working-class, African-American (Somalian) [also in TFP]
Kim: F, 16, Working-class, Asian-American (Chinese/Vietnamese)
Kadejah: F, 17, Working-class, African-American
Christie: F, 15, Working-class, White
James: M, 17, Working-class, Asian-American
Luke: M, 19, Middle-class, White*

Tyrone: M, 18, Low-income, African-American
Nia: F, 14, Middle-class, African-American
Lily: F, 15, Middle-class, Mixed-race (White/African-American/Hispanic)
Melanie: F, 16, Middle-class, African-American
Kiara: F, 16, Middle-class, African-American
Imani: F, 15, Working-class, African-American
Jocelyn: F, 15, Middle-class, African-American
Darius: M, 17, Working-class, African-American
Stella: F, 16, Middle-class, African-American (Haitian)
Ricardo: M, 18, Working-class, Hispanic
Elizabeth: F, 16, Middle-class, Asian-American (Chinese/Korean)
Tatiana: F, 19, Working-class, African-American
Scott: M, 15, Low-income, African-American
Cecil: M, 19, Working-class, African-American (College Mentor)

Adult Participants

Nancy: F, 50s, White, Program Coordinator
Jon: M, 30s, African-American, Program Coordinator
Maya: F, 20s, Mixed-Race/African-American, Program Coordinator
Patricia: F, 40s, White, Hub Program Coordinator
Alex: M, 20s, African-American, Grad Student Mentor

*Surveyed, but not interviewed

Appendix 2

General Interview Schedules

Interview Guide for Community Technology Centers

This guide indicates the general types of questions I asked during semi-structured interviews.

Youth Interviews

Aspirations

- What do you want to be when you grow up?
- What are your favorite subjects in school?
- What sorts of things do you do in your free time?

Consumption/Use of and Attitudes to Technology in Everyday Life

General/Individual

Main question: How do you use technology everyday? What kinds and why?

- How important is technology in your life?
- Do you consider yourself to be comfortable with technology? With what kinds?
 - What does that mean to you?
- What are your favorite technology items that you own?
- Are there items you own that you can't live without? Why?
- What would your life be like if all the technology you use suddenly disappeared or you couldn't use it for some reason? What would change?
- How did you decide to buy each of these items?
- What is it about these items that are so important to you?
- Can you describe your relationship to this item? How would you feel if you suddenly lost it?
- Do you think it's important to have the newest technology products as soon as they come out?
- Do you ever feel like you can't buy the new technology product that you want?
 - How do you pay for these items?

At Home

Main question: How do you use technology at home?

- Tell me about the sorts of technology you have at your home. How do you use technology at home?
- What do you tend to do on your home computer?
- Who else in your family uses the computer?
- Do you ever share tech knowledge with others at home? Give an example.

- What other types of technology do you have at home? Video game systems, etc.?
- Do you own your own technology products or do you have to share with family members?

In School

- Tell me about how you use technology in school. What do you do with technology in school?
- How is what you are learning in the CTC different from the access to technologies you have in school? At home?

With Friends

Main questions: How important is technology to your friendships? How do you and your peers use technology together? How do friends influence consumption?

- How does technology play a role in your friendships?
- Describe how it does.
 - How important is using technology to keep up friendships for you? For people your age in general?
 - What sorts of technology do you use to keep in touch with friends?
- What sorts of technology products do your friends tend to own?
- Do you and your friends tend to own the same kinds of technology products? Different ones?
- Does it influence you when your friends having certain tech products? Do you influence your friends?
- Do your friends discuss, trade, share technology products?
- Do you share information, music, etc. through technology products?
- Does it matter to you to have the “right” technology that is cool among your friends?
- Are your friends involved in the CTC at all?

Gender questions (focus on both individual and peer groups)

- Do you think boys or girls use technology more? Why?
- Do you think they do different things online? Play with different technologies?

Perceptions of Technology in the larger world

- What do you think “technology” IS in general?
 - Why is it important in the world?
 - How does technology affect people’s lives?
- Do you think it is important to learn about new forms of technology in today’s world? Why?
- Do you think your CTC experiences will help you in the future? How?

Experiences within the CTC

- How long have you been coming to the CTC/been involved with the program?
- How did you get involved in the CTC?
 - Was there a person or people who influenced you to get involved?
 - What made you want to be part of the CTC?
- What do you spend your time doing in the CTC/program?
- What have you learned?
 - Specifically, in terms of programs, skills, technologies
 - More generally, have you acquired other skills?
- What are your favorite things to do here?
- Is there anything you would like to be able to do with technology? Anything you would like to produce/create?
- Have you ever shared technological knowledge with someone else? A younger sibling or friend? Describe that experience. How did that feel?
- Do you think that what you are learning will be helpful to you in the future? How?
- Have there been people (adults, others) who have been especially influential, encouraging to you in the CTC? Who were these people? Why? What did they do?
- Do you think more kids should be learning the things that the CTC/program is teaching? Why?
 - What do you think will happen to kids who aren't learning about technology? Who aren't learning technological skills?
- Can you remember how you felt about learning technological skills before coming to the CTC? Were you resistant to the idea at all?
- Are there other technologies you would like to learn about as a result of this program?
- Do you think you will continue to learn about different technologies in the future? How?
- The Learning Program:
 - Do you have any reflections on last summer?
 - How did your project go? Tell me about it.
 - What was teaching like?
 - What effect does the program have on you?
 - What effect does it have on others in the program? The kids you teach?
 - What would you change about the program?
 - Are you looking forward to being part of the program again? Why?

Follow-Up Questions

Technology in everyday life

Main questions: Describe continuing technology consumption.

- Have you bought or received any new technology products lately?
 - Describe.
- Have you tried out any new technology recently? Describe.
- Are there any new technology products you know about and want? That friends have gotten?

- How have you been using technology lately in your everyday life? What has been the most important piece of technology to you? Why?

Experiences in the CTCs

- For teen teachers in TLP
 - Describe what it has been like to move from being a student in the program to a teacher.
 - How does it feel to be able to pass on the technological skills you have learned to younger kids?
 - Why is it important for kids to acquire these skills early?
 - Do you have any other opinions on how your students use technology in general?
- What have you been learning in the CTC/program lately?
 - What has been the most interesting thing you've done lately?
 - What has been the least interesting thing?
 - The hardest thing?
- Have you done anything lately that you are especially proud of?
- Have you created anything through technology lately?
 - How do you feel about this?
- Are you happy with your participation in the program so far?
 - What is the best part about it?
 - What makes you keep coming back?
 - What is your least favorite element of the program?
- Have you used anything you've learned outside of the CTC?
 - Have you told anyone outside of the CTC (friends, family) about anything you've learned lately? What did you tell them?

Questions for CTC Directors, Adult Teachers/Volunteers

CTC Background, Population and Programs

- How did you come to work at the CTC/in the program?
- What does your job entail? Salary range?
 - How long have you been here?
 - How has the CTC changed since you first started?
 - How have programming needs changed since you first started?
 - How would you characterize the youth population that frequents the CTC? Who are they?
 - Economically?
 - Racial/ethnically?
 - Gender?
 - How would you characterize the level of involvement/attachment the young people have to the CTC?
 - Do the same people get involved and stay involved over a long period of time?

- What do you think keeps them coming back?
 - Are there a large number of drop-outs?
 - What do you think leads to this?
 - What are they biggest challenges in your job?
- How does the CTC/program secure funding?
 - Have there been changes in available funding recently?
 - How does funding affect the CTC's ability to provide services?
 - Are there other outside factors that affect the CTC's ability to provide services?
 - In terms of the "digital divide," do you see changes in terms of what that means for your center and its users? What does that term mean to you?
- Teach 2 Learn
 - How how the program changed over the years?
 - What was your assessment of last summer's program?
 - What did you think of the projects? Which were most successful and why? Which were less successful and why?
 - What changes are you considering for next summer?

CTCs and Young Users

- What is the mission of the CTC/program with regard to young people?
 - What do you see as the most important knowledge/skills about technology for young people to acquire? Why?
 - What are the main things you would like to impart to teens? What effect would you like their involvement in the CTC to have on their lives?
 - Do you see these young people at a disadvantage with regard to their futures if they don't acquire technological skills?
 - Do you think that what they are learning through these programs is likely to affect their futures? How?
 - What would you consider to be a success story from the CTC? Why?
 - What are the biggest challenges in your job and why?
 - TLP: What is the benefit in having teens returning to become teachers to younger kids? What do both parties get out of this arrangement?
- How much agency do you have in deciding which programs get implemented?
 - How do you decide what programs to implement?
 - Have there been trends/changes with regard to what programs you can offer to young people?
 - Have the interests of young people in learning about technology changed in recent years? How?
 - What do you think motivates young people to learn about technology?
 - What are the young people most interested in learning about?
- Outside of instructional programs, what else do young people do at the center?
 - If they have free time to interact with technology in the center, what are they likely to do?
 - What do you think of this use of their time?
 - Do you think there are benefits to this type of use?

- Do you see differences in the attitudes of boys and girls to technology?
 - o In the ways they use technology?
 - o If girls need more encouragement, do you try to address this?
- Are there any teens here that you would consider real success stories (can be anonymous)?
- Any stories about failures/disappointments? What do you think went wrong?
- Is there anything else I should be asking about the youth programs here or how young people interact with technology?

Young People and Technology in Everyday Life

- How do you think your young users interact with technology outside of the CTC/program?
- What sorts of technology products do you think they own?
- How do you think they afford these items?
- How important do you think these things are to them? Why?
- What do you think of the role that technology plays in their lives? Is it different from what you have experienced? How?
- Do you think the young people in the CTC/program (and their peers) are technologically-savvy? What does this mean to you?
- Do you think they are knowledgeable consumers of technology? Why?
- How do you think the presence or absence of technology in these young people's lives will most dramatically affect them in the long run?

REFERENCES

- Adorno, T.W. and M. Horkheimer. 1944/1987."The Culture Industry: Enlightenment as Mass Deception." Pp. 120-167 in *Dialectic of Enlightenment*. New York: Continuum.
- Altheide, D. L. and J.M. Johnson. 1998. "Criteria for assessing interpretive validity in qualitative research." Pp. 1-17 in *Handbook of Qualitative Research*, edited by N.K. Denzin and Y.S. Lincoln. 2nd ed. Thousand Oaks, CA: Sage.
- Anderson, Robert H., Tora K. Bikson, Sally Ann Law, and Bridger M. Mitchell. 1995. *Universal Access to E-Mail: Feasibility and Societal Implications*. Santa Monica, CA: Rand.
- Arnould, Eric J. and Craig J. Thompson. 2005. "Consumer Culture Theory (CCT): Twenty Years of Research." *Journal of Consumer Research* 31: 868-882.
- Attewell, Paul and Juan Battle. 1999. "Home Computers and School Performance." *The Information Society* 15(1):1-10.
- Bakhtin, Mikhail. 1984. *Rabelais and His World*. Translated by H. Iswolsky. Bloomington: Indiana University Press.
- Barthes, Roland. 1975. *The Pleasure of the Text*. New York: Hill and Wang.
- Bauman, Zygmunt. 1991. *Modernity and Ambivalence*. Ithaca, NY: Cornell University Press.
- Beck, Ulrich. 1992. *Risk Society: Towards a New Modernity*. London: Sage.
- Berman, Ronald. 1981. *Advertising and Social Change*. Beverly Hills: Sage.
- Bond, Emma. 2011. "The Mobile Phone = Bike Shed? Children, Sex and Mobile

- phones.” *New Media & Society* 13(4):587-604.
- Bourdieu, Pierre. 1984. *Distinction: A Social Critique of the Judgement of Taste*.
Cambridge, Mass.: Harvard University Press.
- Bourdieu, Pierre. 1986. "The Forms of Capital." Pp. 241-258 in *The Handbook of Theory and Research for the Sociology of Education*, edited by J. Richardson. New York: Greenwood Press.
- Bourdieu, Pierre. 1993. *The Field of Cultural Production: Essays on Art and Literature*.
Cambridge: Polity.
- Bowles, Samuel, Herbert Gintis, and Melissa Osborne Groves. 2005. *Unequal Chances: Family Background and Economic Success*. New York: Russell Sage Foundation.
- boyd, danah. 2011. "White Flight in Networked Publics? How Race and Class Shaped American Teen Engagement with MySpace and Facebook." Pp. 203-222 in *Race After the Internet*, edited by L. Nakamura and P. A. Chow-White. New York: Routledge.
- Briggs, Xavier de Souza. 1998. "Brown Kids in White Suburbs: Housing Mobility and the Many Faces of Social Capital." *Housing Policy Debate* 9:177-221.
- Bromley, Helen. 1996. "'Did You Know There's No Such Thing as Neverland? Working with Video Narratives in the Early Years.'" Pp. 71-91 in *Potent Fictions: Children's Literacy and the Challenge of Popular Culture*, edited by M. Hilton. London: Routledge.
- Buckingham, David. 2008. "Introducing Identity." Pp. 1-24 in *Youth, Identity, and*

- Digital Media*, edited by D. Buckingham. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*. Cambridge, MA: The MIT Press.
- Buckingham, David. 2011. "Youth Media Production in the Digital Age: Some Reflections- and a Few Provocations." Pp. 375-379 in *International Perspectives on Youth Media: Cultures of Production and Education*, edited by J. Fisherkeller. New York: Peter Lang.
- Bucy, Erik P. 2000. "Social Access to the Internet." *Harvard International Journal of Press/Politics* 5(1):50-61.
- Butler, Judith. 1990. *Gender Trouble: Feminism and the Subversion of Identity*. New York: Routledge.
- Campbell, Colin. 1994. "Conspicuous Confusion: A Critique of Veblen's Theory of Conspicuous Consumption." *Sociological Theory* 12(2): 34-47.
- Campbell, Rachel. 2006. "Teenage Girls and Cellular Phones: Discourses of Independence, Safety and 'Rebellion'." *Journal of Youth Studies* 9(2): 195-212.
- Card, David and John E. DiNardo. 2002. "Skill-Biased Technological Change and Rising Wage Inequality: Some Problems and Puzzles." *Journal of Labor Economics* 20(4):733-783.
- Castells, Manuel. 1996. *The Rise of Network Society*. Malden, MA: Blackwell.
- Castells, Manuel. 1998. *End of Millennium*. Malden, MA: Blackwell.
- Chalfen, Richard and Michael Rich. 2011. "Studying Research Capabilities of Youth

- Media: Analyzing Children's Audiovisual Expressions about Health." Pp. 103-118 in *International Perspectives on Youth Media: Cultures of Production and Education*, edited by J. Fisherkeller. New York: Peter Lang.
- Chang, Jeff. 2005. *Can't Stop Won't Stop: A History of the Hip-Hop Generation*. New York: St. Martin's Press.
- Charmaz, Kathy. 2006. *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. Thousand Oaks, CA: Sage.
- Chin, Elizabeth. 2001. *Purchasing Power: Black Kids and American Consumer Culture*. Minneapolis: University of Minnesota Press.
- Clark, Lynn Schofield. 2003. "Challenges of Social Good in the World of *Grand Theft Auto* and *Barbie*: A Case Study of a Community Computer Center for Youth." *New Media & Society* 5 (1):95-116.
- Clark, Lynn Schofield. 2013. *The Parent App: Understanding Families in the Digital Age*. Oxford: Oxford University Press.
- Clark, Lynn Schofield, Christof Demont-Heinrich, and Scott A. Webber. 2004. "Ethnographic Interviews on the Digital Divide." *New Media & Society* 6(4):529-547.
- Clark, Lynn Schofield, Christof Demont-Heinrich, and Scott A. Webber. 2005. "Parents, ICTs, and Children's Prospects for Success: Interviews Along the Digital 'Access Rainbow'." *Critical Studies in Media Communication* 22(5):409-426.
- Cohen, Stanley. 1972/1987. *Folk Devils and Moral Panics: The Creation of the Mods and Rockers*. Oxford: Basil Blackwood.
- Coles, Claire D. 1993. "Saying 'Goodbye' to the 'Crack Baby.'" *Neurotoxicology and*

- Teratology* 15:290-292.
- Cook, Daniel Thomas. 2004. *The Commodification of Childhood: The Children's Clothing Industry and the Rise of the Child Consumer*. Durham, NC: Duke University Press.
- Correa, Teresa. 2010. "The Participation Divide Among 'Online Experts.'" *Journal of Computer-Mediated Communication* 16(1):71-92.
- Cotten, Shelia R., Timothy M. Hale, Michael Howell Moroney, LaToya O'Neal and Casey Borch. 2011. "Using Affordable Technology to Decrease Digital Inequality." *Information, Communication & Society* 14(4):424-444.
- Cresswell, John W. 2003. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, CA: Sage.
- Cuban, Larry. 2001. *Oversold and Underused: Computers in the Classroom*. Cambridge, MA: Harvard University Press.
- Cunningham, Carolyn. 2011. "Girl Game Designers." *New Media & Society* 13(8):1373-1388.
- de Certeau, Michel. 1984. *The Practice of Everyday Life*. Translated by S. Rendall. Berkeley, CA: University of California Press.
- Denzin, Norman and Yvonna Lincoln. 1998. "Introduction: Entering the Field of Qualitative Research." Pp. 1-34 in *The Landscape of Qualitative Research*, edited by N. Denzin and Y. Lincoln. Thousand Oaks, CA: Sage.
- Dezuanni, Michael. 2011. "Youth Media Production and Technology Skills Acquisition:

- Opportunities for Agency.” Pp. 121-137 in *International Perspectives on Youth Media: Cultures of Production and Education*, edited by J. Fisherkeller. New York: Peter Lang.
- DiMaggio, Paul and John Mohr. 1985. "Cultural Capital, Educational Attainment, and Marital Selection." *The American Journal of Sociology* 90(6):1231-1261.
- DiMaggio, Paul, Eszter Hargittai, Coral Celeste, and Steven Shafer. 2004. "Digital Inequality: From Unequal Access to Differentiated use." Pp. 355-400 in *Social Inequality*, edited by K. Neckerman. New York: Russell Sage Foundation.
- Drotner, Kirsten. 1992. "Modernity and Media Panics." Pp. 42-62 in *Media Cultures: Reappraising Transnational Media*, edited by M. Skorvand and K.C. Schroeder. London: Routledge.
- Drotner, Kirsten. 2008. "Leisure Is Hard Work: Digital Practices and Future Competencies." Pp. 167-184 in *Youth, Identity, and Digital Media*, edited by D. Buckingham. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*. Cambridge, MA: The MIT Press.
- Dumais, Susan. 2002. "Cultural Capital, Gender, and School Success: The Role of Habitus." *Sociology of Education* 75(1):44-68.
- Duncan, Arne. 2009. "Secretary Arne Duncan's Remarks to the President's Council of Advisors on Science and Technology." U.S. Department of Education, October 23, 2009. Retrieved August 15, 2013 (<http://www2.ed.gov/news/speeches/2009/10/10232009.html>).
- Everett, Anna. "Introduction." Pp. 1-14 in *Learning Race and Ethnicity: Youth and*

- Digital Media*, edited by A. Everett. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*. Cambridge, MA: The MIT Press.
- Everett, Anna. 2009. *Digital Diaspora: A Race for Cyberspace*. Albany, NY: SUNY Press.
- Facer, Keri and Ruth Furlong. 2001. "Beyond the Myth of the 'Cyberkid': Young People at the Margins of the Information Revolution." *Journal of Youth Studies* 4(4):451-469.
- Firat, Fuat and Alladi Venkatesh. 1995. "Liberatory Post-Modernism and the Re-Enchantment of Consumption." *Journal of Consumer Research* 22:239-267.
- FisherKeller, JoEllen. 2011. "Introduction: International Perspectives on Youth Media: Cultures of Production and Education." Pp. 1-21 in *International Perspectives on Youth Media: Cultures of Production and Education*, edited by J. FisherKeller. New York: Peter Lang.
- Foley, Carmel, Caryn Holzman, and Stephen Wearing. 2007. "Moving Beyond Conspicuous Leisure Consumption: Adolescent Women, Mobile Phones and Public Space." *Leisure Studies* 26(2):179-192.
- Forman, Murray. 2002. *The 'Hood Comes First: Race, Space, and Place in Rap and Hip-Hop*. Middletown, CT: Wesleyan University Press.
- Frank, Thomas. 1997. *The Conquest of Cool: Business Culture, Counterculture, and the Rise of Hip Consumerism*. Chicago: University of Chicago Press.
- Galbraith, John Kenneth. 1958. *The Affluent Society*. Boston: Houghton Mifflin.
- Garcia, Bobbito. 2006. *Where'd You Get Those Shoes? New York City's Sneaker Culture:*

- 1960-1987. New York: Testify Books.
- Gee, James Paul. 2003. *What Video Games Have to Teach Us about Learning and Literacy*. New York: Palgrave Macmillan.
- Gibbons, Damiana, Tea Drift, and Deanna Drift. 2011. "Whose Story Is It? Being Native and American: Crossing Borders, Hyphenated Selves." Pp. 172-191 in *International Perspectives on Youth Media: Cultures of Production and Education*, edited by J. Fisherkeller. New York: Peter Lang.
- Giddens, Anthony. 1991. *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Stanford, CA: Stanford University Press.
- Giroux, Henry A. 2009. *Youth in a Suspect Society*. New York: Palgrave MacMillan.
- Goffman, Erving. 1959. *The Presentation of Self in Everyday Life*. New York: Anchor Books.
- Goldman, Robert and Stephen Papson. 1998. *Nike Culture: The Sign of the Swoosh*. London: Sage.
- Goldman, Shelley, Angela Booker, and Meghan McDermott. 2008. "Mixing the Digital, Social, and Cultural: Learning, Identity, and Agency in Youth Participation." Pp. 185-206 in *Youth, Identity, and Digital Media*, edited by D. Buckingham. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*. Cambridge, MA: The MIT Press.
- Goslee, Susan. 1998. *Losing Ground Bit by Bit: Low-Income Communities in the Information Age*. Washington, DC: Benton Foundation and National Urban League.
- Granovetter, Mark S. 1973. "The Strength of Weak Ties." *American Journal of Sociology*

- 78(6):1360-1380.
- Guins, Raiford. 2008. "Hip-Hop 2.0." Pp. 63-80 in *Learning Race and Ethnicity: Youth and Digital Media*, edited by A. Everett. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*. Cambridge, MA: The MIT Press.
- Gunkel, David J. 2003. "Second Thoughts: Toward a Critique of the Digital Divide." *New Media & Society* 5(4):499-522.
- Hamilton, Carmen and Constance Flanagan. 2007. "Reframing Social Responsibility within a Technology-Based Youth Activist Program." *American Behavioral Scientist* 51(3):444-464.
- Hargittai, Eszter. 2003. "The Digital Divide and What to Do About It." Pp. 822-841 in *The New Economy Handbook*, edited by D.C. Jones. San Diego, CA: Academic Press.
- Hargittai, Eszter. 2007. "Whose Space? Differences among Users and Non-Users of Social Network Sites." *Journal of Computer-Mediated Communication* 13(1): 276-297.
- Hargittai, Eszter. 2008. "The Digital Reproduction of Inequality." Pp. 936-944 in *Social Stratification*, edited by D. Grusky. Boulder, CO: Westview Press.
- Hargittai, Eszter and Amanda Hinnant. 2008. "Digital Inequality: Differences in Young Adults' Use of the Internet." *Communication Research* 35(5): 602-621.
- Hargittai, Eszter and Gina Walejko. 2008. "The Participation Divide: Content Creation and Sharing in the Digital Age." *Information, Communication and Society* 11(2): 239-256.

- Harrison, A.W., R.K. Rainer, Jr., and W.A. Hochwarter. 1997. "Gender Differences in Computing Activities." *Journal of Social Behavior and Personality* 12(4): 849-68.
- Herring, Susan C. 2008. "Questioning the Generational Divide: Technological Exoticism and Adult Constructions of Online Youth Identity." Pp. 71-92 in *Youth, Identity, and Digital Media*, edited by D. Buckingham. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*. Cambridge, MA: The MIT Press.
- Hill, Catherine, Christianne Corbett, and Andresse St. Rose. 2010. *Why So Few? Women in Science, Technology, Engineering, and Math*. Washington DC: American Association of University Women. Retrieved February 7, 2014 (<http://www.aauw.org/files/2013/02/Why-So-Few-Women-in-Science-Technology-Engineering-and-Mathematics.pdf>).
- Hine, Christine. 2007. "Multi-sited Ethnography as a Middle Range Methodology for Contemporary STS." *Science, Technology & Human Values* 32(6):652-671.
- Holdren, John P. 2011. "America COMPETES Act Keeps America's Leadership on Target." *The White House Blog*. January 6, 2011. Retrieved July 20, 2013 <http://www.whitehouse.gov/blog/2011/01/06/america-competes-act-keeps-american-leadership-target>.
- Holloway, Sarah L. and Gill Valentine. 2003. *Cyberkids: Children in the Information Age*. London: Routledge.
- Holmes, John. 2011. "Cyberkids or Divided Generations? Characterising Young People's

- Internet Use in the UK with Generic, Continuum or Typological Models.” *New Media & Society* 13(7):1104-1122.
- Holt, Douglas B. 2000. "Postmodern Markets." Pp. 63-68 in *Do Americans Shop Too Much*, edited by J. Schor. Boston: Beacon.
- Hopkins, Liza. 2010. “YouthWorx: Increasing Youth Participation Through Media Production.” *Journal of Sociology* 47(2):181-197.
- Horst, Heather A. 2010. “Families.” Pp. 149-194 in *Hanging Out, Messing Around, and Geeking Out: Kids Living and Learning with New Media*, edited by M. Ito. Cambridge, MA: MIT Press.
- Horst, Heather A., Becky Herr-Stephenson, and Laura Robinson. 2010. “Media Ecologies.” Pp. 29-78 in *Hanging Out, Messing Around, and Geeking Out: Kids Living and Learning with New Media*, edited by M. Ito. Cambridge, MA: MIT Press.
- Huber, Brad R. and Janet Ward Schofield. 1998. “‘I Like Computers, But Many Girls Don’t’: Gender and the Sociocultural Context of Computing.” Pp. 103-132 in *Education/Technology/Power: Educational Computing as a Social Practice*, edited by H. Bromley and M.W. Apple. Albany: State University of New York Press.
- Ito, Mizuko et al. 2008. “Foreword.” Pp. vii-ix in *Youth, Identity, and Digital Media*, edited by D. Buckingham. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*. Cambridge, MA: The MIT Press.
- Ito, Mizuko, ed. 2010. *Hanging Out, Messing Around, and Geeking Out: Kids Living and Learning with New Media*. Cambridge, MA: MIT Press.
- Ito, Mizuko. 2010. “Work.” *Hanging Out, Messing Around, and Geeking Out: Kids*

- Living and Learning with New Media*. Edited by M. Ito. Cambridge, MA: MIT Press.
- Ito, Mizuko, Kris Gutiérrez, Sonia Livingstone, Bill Penuel, Jean Rhodes, Katie Salen, Juliet Schor, Julian Sefton-Green, and S. Craig Watkins. 2013. *Connected Learning: An Agenda for Research and Design*. Irvine, CA: Digital Media and Learning Research Hub. ([http://dmlhub.net/sites/default/files/ Connected_Learning_report.pdf](http://dmlhub.net/sites/default/files/Connected_Learning_report.pdf)).
- James, Allison, Chris Jenks, and Alan Prout. 1998. *Theorizing Childhood*. Cambridge, UK: Polity Press.
- Jameson, Frederic. 1984. "Postmodernism, Or the Cultural Logic of Late Capitalism." *New Left Review* 146:59-92.
- Jenkins, Henry. 2006. *Convergence Culture: Where Old and New Media Collide*. New York: NYU Press.
- Jenkins, Richard. 2004. *Social Identity*. New York: Routledge.
- Jenson, Jennifer, Negin Dahya, and Stephanie Fisher. 2013. "Valuing Production Values: A 'Do It Yourself' Media Production Club." *Learning, Media & Technology*. DOI: 0.1080/17439884.2013.79948:1-14.
- Jones, Sydney and Susannah Fox. 2009. "Generations Online in 2009." *Pew Internet & American Life Project*. Retrieved July 28, 2012 ([http://www.pewinternet.org/ Reports/2009/Generations-Online-in-2009.aspx](http://www.pewinternet.org/Reports/2009/Generations-Online-in-2009.aspx)).
- Jurgenson, Nathan. 2012. "Critiquing the 'Digital Divide' Rhetoric." *Cyborgology*, May 31 2012. Retrieved May 31, 2012(<http://thesocietypages.org/cyborgology/2012/05/31/critiquing-the-digital-divide-rhetoric/>).

- Kafai, Yasmin B, Kylie A. Peppler, and Robbin N. Chapman. 2009. "The Computer Clubhouse: A Place For Youth." Pp. 1-16 in *The Computer Clubhouse: Constructionism and Creativity in Youth Communities*, edited by Y. B. Kafai, K. A. Peppler, and R. N. Chapman. New York: Teachers College Press.
- Kvasny, Lynette. 2005. "The Role of the Habitus in Shaping Discourses about the Digital Divide." *Journal of Computer-Mediated Communication* 10(2). DOI: 10.1111/j.1083-6101.2005.tb00242.x.
- Kvasny, Lynette. 2006. "Cultural (Re)Production of Digital Inequality in a US Community Technology Initiative." *Information, Communication & Society* 9(2):160-181.
- Lamont, Michele and Annette Lareau. 1988. "Cultural Capital: Allusions, Gaps, and Glissandos in Recent Theoretical Developments." *Sociological Theory* 6(2):153-168.
- Lamont, Michèle. 1992. *Money, Morals, and Manners: The Culture of the French and American Upper-Middle Class*. Chicago: University of Chicago Press.
- Lange, Patricia G. and Mizuko Ito. 2010. "Creative Production." Pp. 243-293 in *Hanging Out, Messing Around, and Geeking Out: Kids Living and Learning with New Media*, edited by M. Ito. Cambridge, MA: MIT Press.
- Lareau, Annette. 2003. *Unequal Childhoods: Class, Race, and Family Life*. Berkeley: University of California Press.
- Larrison, Christopher R., Larry Nackerud, Ed Risler, and Michael Sullivan. 2002.

- "Welfare Recipients and the Digital Divide: Left Out of the New Economy?"
Journal of Technology in Human Services 19(4):1-12.
- Lave, Jean and Etienne Wenger. 1991. *Situated Learning: Legitimate Peripheral Participation*. Cambridge, UK: Cambridge University Press.
- Lenhart, Amanda, Kristen Purcell, Aaron Smith, and Kathryn Zickuhr. 2010. "Social Media and Young Adults." *Pew Internet & American Life Project*. Retrieved February 3, 2010 (<http://www.pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx>).
- Lenhart, Amanda. 2012. "Teens, Smartphones & Texting." *Pew Internet & American Life Project*. Retrieved July 1, 2012 (<http://www.pewinternet.org/Reports/2012/Teens-and-smartphones.aspx>).
- Liff, Sonia, Adrian Shepherd, Judy Wajcman, Ronald Rice, and Eszter Hargittai. 2004. "An Evolving Gender Digital Divide?" OII Internet Issue Brief No. 2. (<http://dx.doi.org/10.2139/ssrn.1308492>).
- Linebarger, Deborah L. and Ariel L. Chernin. 2003. "Young Children, Parents, Computers, and the Internet." *IT & Society* 1(4):87-106.
- Lipovetsky, Gilles. 1994. *The Empire of Fashion: Dressing Modern Democracy*. Princeton, NJ: Princeton University Press.
- Lister, Martin, Jon Dovey, Seth Giddings, Iain Grant, and Kieran Kelly. 2003. *New Media: A Critical Introduction*. New York: Routledge.
- Livingstone, Sonia and Ellen Helsper. 2007. "Gradations in Digital Inclusion: Children, Young People and the Digital Divide." *New Media & Society* 9(4):671-696.
- Livingstone, Sonia. 2002. *Young People and New Media*. London: Sage.

- London, Rebecca A., Manuel Pastor Jr., Lisa J. Servon, Rachel Rosner, and Antwuan Wallace. 2010. "The Role of Community Technology Centers in Promoting Youth Development." *Youth & Society* 42(2):199-228.
- MacDonald, Dwight. 1957. "A Theory of Mass Culture." Pp. 59-73 in *Mass Culture: The Popular Arts in America*, edited by B. Rosenberg and D.M. White. Glencoe, IL: The Free Press.
- Maczewski, M., M.A. Storey, and M. Hoskins. 2003. "Conducting Congruent, Ethical, Qualitative Research in Internet-Mediated Research Environments." Pp. 62-79 in *Readings in Virtual Research Ethics: Issues and Controversies*, edited by E. A. Buchanan. Hershey, PA: Idea Group Publishing.
- Madden, Mary, Amanda Lenhart, Maeve Duggan, Sandra Cortesi, and Urs Gasser. 2013. "Teens and Technology 2013." *Pew Internet & American Life Project*. Retrieved April 13, 2013. (http://www.pewinternet.org/~media/Files/Reports/2013/PIP_TeensandTechnology2013.pdf).
- Majors, Richard and Janet Mancini Billson. 1992. *Cool Pose: The Dilemmas of Black Manhood in America*. New York: Touchstone.
- Mandell, Nancy. 1988. "The Least Adult Role in Studying Children." *Journal of Contemporary Ethnography* 16(4): 433-67.
- Mansell, Robin. 2002. "From Digital Divides to Digital Entitlements in Knowledge Societies." *Current Sociology* 50(3): 407-426.
- Marchand, Roland. 1985. *Advertising the American Dream: Making Way for Modernity, 1920-1940*. Berkeley: University of California Press.
- Marcus, George E. 1995. "Ethnography In/Of the World System: The Emergence of

- Multi-sited Ethnography.” *Annual Review of Anthropology* 24:95-117.
- Margolis, Jane and Allan Fisher. 2002. *Unlocking the Clubhouse: Women in Computing*. Cambridge, MA: MIT Press.
- Mazzarella, Sharon R. 2007. “Why is Everybody Always Pickin’ on Youth? Moral Panics about Youth, Media, and Culture.” Pp. 45-60 in *20 Questions about Youth and the Media*, edited by S. R. Mazzarella. New York: Peter Lang.
- McMillan, Divya C. 2009. *Mediated Identities: Youth, Agency, and Globalization*. New York: Peter Lang.
- McRobbie, Angela. 1991. *Feminism and Youth Culture*. Boston, MA: Unwin Hyman.
- Merton, Robert. 1957. *Social Theory and Social Structure*. Glencoe, IL: The Free Press.
- Mesch, Gustavo S. and Ilan Talmud. 2011. “Ethnic Differences in Internet Access.” *Information, Communication & Society* 14(4):445-471.
- Mick, David Glen and Susan Fournier. 1998. “Paradoxes of Technology: Consumer Cognizance, Emotions, and Coping Strategies.” *Journal of Consumer Research*. 25(2):123-144.
- Miles, Matthew B. and A. Michael Huberman. 1984. *Qualitative Data Analysis: A Sourcebook of New Methods*. Thousand Oaks, CA: Sage.
- Mitchell, Tony. 2002. *Global Noise: Rap and Hip-Hop Outside the USA*. Middletown, CT: Wesleyan University Press.
- Morimoto, Shauna A. and Lewis A. Friedland. 2010. “The Lifeworld of Youth in an Information Society.” *Youth & Society* 43(2):549-567.
- Morley, David and Kevin Robins. 1995. *Spaces of Identity: Global Media, Electronic Landscapes and Cultural Boundaries*. London: Routledge.

- Nadai, Eva and Christoph Maeder. 2005. "Fuzzy Fields. Multi-Sited Ethnography in Sociological Research." *Forum: Qualitative Social Research* 6(3):Art. 28. Retrieved June 1, 2011 (<http://nbn-resolving.de/urn:nbn:de:0114-fqs0503288>).
- Neuman, W. Lawrence. 2003. *Social Science Research Methods: Qualitative and Quantitative Approaches*. Boston: Allyn and Bacon.
- Nightingale, Carl H. 1993. *On the Edge: A History of Poor Black Children and their American Dreams*. New York: Basic Books.
- Norris, Pippa. 2001. *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide*. Cambridge, UK: Cambridge University Press.
- Notten, Natascha, Jochen Peter, Gerbert Kraaykamp, and Patti M. Valkenburg, 2009. "Research Note: Digital Divide Across Borders." *European Sociological Review* 25(5):551–560.
- NTIA (National Telecommunications and Information Administration). 1995. *Falling Through the Net: A Survey of the "Have Nots" in Rural and Urban America*. Washington, DC: U.S. Department of Commerce.
- O'Hara, Kieron and David Stevens. 2006. *Inequality.Com: Power, Poverty and the Digital Divide*. Oxford: Oneworld Publications.
- Oberg, Antoinette. 2003. "Paying Attention and Not Knowing." Pp. 123-130 in *Curriculum Intertext: Place/language/pedagogy*, edited by E. Hasebe-Lundt and W. Hurren. New York: Peter Lang.
- Papert, Seymour. 1996. *The Connected Family*. Atlanta, GA: Longstreet.
- Parry, Becky. 2012. "Cowboy Mutant Golfers and Dreamcatcher Dogs: Making Space

- for Popular Culture in Animation Production with Children.” *International Journal of Learning and Media* 3(3):43-52.
- Pearson, Geoffrey. 1983. *Hooligan: A History of Respectable Fears*. London: Macmillan.
- Peter, Jochen and Patti M. Valkenburg. 2006. “Adolescents’ Internet Use: Testing the ‘Disappearing Digital Divide’ Versus the ‘Emerging Digital Differentiation’ Approach.” *Poetics* 34:293–305.
- Pew Internet & American Life Project. 2012. “Teen Internet Access Demographics.” Retrieved July 1, 2013 ([http://www.pewinternet.org/Trend-Data-\(Teens\)/Whos-Online.aspx](http://www.pewinternet.org/Trend-Data-(Teens)/Whos-Online.aspx)).
- Pfohl, Stephen. 2005. "New Global Technologies of Power: Cybernetic Capitalism and Social Inequality." Pp. 456-592 in *The Blackwell Companion to Social Inequalities*, edited by M. Romero and E. Margolis. Cambridge, MA: Blackwell Publishing.
- Postman, Neil. 1985. *Amusing Ourselves to Death*. New York: Penguin.
- Poyntz, Stuart R. and Michael Hoechsmann. 2011. “Not Just Philosophizing: Producing Effective Youth Media and Communication Projects.” Pp. 301-316 in *International Perspectives on Youth Media: Cultures of Production and Education*, edited by J. Fisherkeller. New York: Peter Lang.
- Prensky, Marc. 2006. *Don't Bother Me, Mom—I'm Learning!* St. Paul, MN: Paragon House.
- Prout, Allison and Alan James. 1990. “A New Paradigm For the Sociology of Childhood?”

- Provenance, Promise and Problems.” Pp. 7-34 in *Constructing and Reconstructing Childhood: Contemporary Issues in the Sociological Study of Childhood*, edited by A. James and A. Prout. London: Falmer Press.
- Resnick, Mitchell. 2002. “The Clubhouse Learning Approach: Guiding Principles.” Retrieved July 1, 2012 (web.media.mit.edu/~mres/clubhouse/handouts/principles-v6.pdf).
- Rheingold, Howard. 2008. “Using Participatory Media and Public Voice to Encourage Civic Engagement.” Pp. 97-118 in *Civic Life Online: Learning How Digital Media Can Engage Youth*. Cambridge, MA: MIT Press.
- Richtel, Matt. 2012. “Wasting Time is New Digital Divide in Digital Era.” *New York Times*, May 29, pp. A1.
- Rideout, Victoria, Ulla G. Foehr, and Donald Roberts. 2010. *Generation M2: Media in the Lives of 8- to 18-Year-Olds*. Kaiser Family Foundation. Retrieved July 1, 2013 (<http://kaiserfamilyfoundation.files.wordpress.com/2013/01/8010.pdf>).
- Ritzer, George and Nathan Jurgenson. 2010. “Production, Consumption, Prosumption: The Nature of Capitalism in the Age of the Digital ‘Prosumer’.” *Journal of Consumer Culture* 10(1):13-36.
- Rose, Nikolas. 1999. *Governing the Soul: The Shaping of the Private Self*. 2nd ed. London: Free Association Books.
- Rose, Tricia. 1994. *Black Noise: Rap Music and Black Culture in Contemporary America*. Middletown, CT: Wesleyan University Press.
- Schofield, Janet Ward. 1995. *Computers and Classroom Culture*. Cambridge: Cambridge University Press.

- Schor, Juliet B. 2004. *Born to Buy: The Commercialized Child and the New Consumer Culture*. New York: Scribner.
- Schor, Juliet B. 2007. "In Defense of Consumer Critique: Revisiting the Consumption Debates of the Twentieth Century." *The ANNALS of the American Academy of Political and Social Science* 611:16-30.
- Schradie, Jen. 2011. "The Digital Production Gap: The Digital Divide and Web 2.0 collide." *Poetics* 39: 145-168.
- Schudson, Michael. 1984. *Advertising, the Uneasy Persuasion: Its Dubious Impact on American Society*. New York: Basic Books.
- Sefton-Green, Julian and Elisabeth Soep. 2007. "Creative Media Cultures: Making and Learning Beyond the School." Pp. 835-856 in *International Handbook of Research in Arts Education*, edited by L. Bresler. Dordrecht, The Netherlands: Springer.
- Seiter, Ellen. 2007. *The Internet Playground*. New York: Peter Lang.
- Seiter, Ellen. 2008. "Practicing at Home: Computers, Pianos, and Cultural Capital." Pp. 27-52 in *Digital Youth, Innovation, and the Unexpected*, edited by T. McPherson. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*. Cambridge, MA: The MIT Press.
- Selwyn, Neil. 2003. "'Doing IT for the Kids': Re-examining Children, Computers and the 'Information Society.'" *Media, Culture and Society* 25:351-78.
- Selwyn, Neil. 2004. "Reconsidering Political and Popular Understandings of the Digital Divide." *New Media & Society* 6(3):341-362.
- Servon, Lisa J. and Randal D. Pinkett. 2004. "Narrowing the Digital Divide: The

- Potential and Limits of the US Community Technology Movement.” Pp. 319-323 in *The Network Society: a Cross Cultural Perspective*, edited by M. Castells. Cheltenham, UK: Edward Elgar Publishing Limited.
- Shieh, Kwei-Fen, and Ming-Sung Cheng. 2007. "An Empirical Study of Experiential Value and Lifestyles and their Effects on Satisfaction in Adolescents: An Example using Online Gaming." *Adolescence* 42(165):199-215.
- Slater, Don. 1997. *Consumer Culture and Modernity*. Cambridge, UK: Polity Press.
- Stapleton, Katina. 1998. "From the Margins to the Mainstream: The Political Power of Hip Hop." *Media, Culture & Society* 20(2):219-234.
- Strauss, Anselm L. 1987. *Qualitative Analysis for Social Scientists*. New York: Cambridge University Press.
- Strover, Sharon. 2001. "Rural Internet Connectivity." *Telecommunications Policy* 25(5):331-347.
- Taborn, Tyrone D. 2008. "Separating Race from Technology: Finding Tomorrow's IT Progress in the Past." Pp. 39-60 in *Learning Race and Ethnicity: Youth and Digital Media*, edited by A. Everett. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*. Cambridge, MA: The MIT Press.
- Tapscott, Don. 1998. *Growing Up Digital: The Rise of the Net Generation*. New York: McGraw-Hill.
- Terranova, Tiziana. 2000. "Free Labor: Producing Culture for the Digital Economy." *Social Text* 18(2):33-58.
- Tough, Paul. 2013. *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character*. New York: Houghton Mifflin.

- Tripp, Lisa. 2011a. "Youth Media in School: Insights from a Professional Development Initiative in Media Arts and Media Literacy." Pp. 355-369 in *International Perspectives on Youth Media: Cultures of Production and Education*, edited by J. Fisherkeller. New York: Peter Lang.
- Tripp, Lisa. 2011b. "The Computer is Not For You to Be Looking Around, It is For Schoolwork?: Challenges For Digital Inclusion as Latino Immigrant Families Negotiate Children's Access to the Internet." *New Media & Society* 13(4):552-567.
- Twitchell, James B. 1999. *Lead Us into Temptation : The Triumph of American Materialism*. New York: Columbia University Press.
- Tyner, Kathleen. 2011. "Mapping the Field of Youth Media Organizations in the United States." Pp. 25-49 in *International Perspectives on Youth Media: Cultures of Production and Education*, edited by J. Fisherkeller. New York: Peter Lang.
- Valaitis, Ruta K. 2005. "Computers and the Internet: Tools for Youth Empowerment." *Journal of Medical Internet Research* 7(5):e51.
- Veblen, Thorstein. 1994. *The Theory of the Leisure Class*. New York: Dover Publications.
- Vered, Karen Orr. 2011. "Center or Margin? The Place of Media Play in Children's Leisure: Case Studies from Sweden and Australia." Pp. 228-245 in *International Perspectives on Youth Media: Cultures of Production and Education*, edited by J. Fisherkeller. New York: Peter Lang.
- Walker, Kathrin. 2010. "The Multiple Roles that Youth Development Program Leaders Adopt with Youth." *Youth Society* 43(2):635-655.
- Watkins, S. Craig. 2009. *The Young & The Digital*. Boston: Beacon Press.

- Watkins, S. Craig. 2012. "Digital Divide: Navigating the Digital Edge." *International Journal of Learning and Media* 3(2):1-12.
- Weber, Sandra, and Claudia Mitchell. 2008. "Imagining, Keyboarding, and Posting Identities: Young People and New Media Technologies." Pp. 25-48 in *Youth, Identity, and Digital Media*, edited by D. Buckingham. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*. Cambridge, MA: The MIT Press.
- Wei, Lu, and Douglas Blanks Hindman. 2011. "Does the Digital Divide Matter More? Comparing the Effects of New Media and Old Media Use on the Education-Based Knowledge Gap?" *Mass Communication and Society* 14(2):216-235.
- Willett, Rebekah. 2008. "Consumer Citizens Online: Structure, Agency, and Gender in Online Participation." Pp. 49-70 in *Youth, Identity, and Digital Media*, edited by D. Buckingham. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*. Cambridge, MA: The MIT Press.
- Willis, Paul E. 1977. *Learning to Labour: How Working Class Kids Get Working Class Jobs*. Farnborough, UK: Saxon House.
- Wolff, Edward N. and Century Foundation. 2002. *Top Heavy: The Increasing Inequality of Wealth in America and What Can Be Done About It*. New York: New Press.
- Zillien, Nicole and Eszter Hargittai. 2009. "Digital Distinction: Status-Specific Types of Internet Usage." *Social Science Quarterly* 90(2):274-291.
- Zukin, Sharon, and Jennifer Smith Maguire. 2004. "Consumers and Consumption." *Annual Review of Sociology* 30:173-197.