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Emerging Twenty-first Century Skills and Practices in After School Programs

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Emerging Twenty-first Skills and Practices in After School Programs

by

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Abstract

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The purpose of the study was to identify emerging twenty-first century skills and practices in all-girl, after-school settings, including capacities related to collaboration, project management, sense of audience, media savvy, and competent use of tools (New London Group, 1996; Partnership for 21st Century Skills, 2004). The findings focus on how and what girls learned in after-school writing and leadership programs — with an emphasis on the instructors' guidance during activities and in-depth discussions, the participants' social interactions and collaborative work, and the production of media related projects.

This research is a multi-methods study that included both quantitative and qualitative data (Creswell, 2006). Quantitative data were drawn from a sample of 108 girls who participated in after-school programs developed and administered by two Girls Inc. chapters located in the San Francisco Bay Area. The data showed how the participants perceived their new media practices and how their interactions mapped onto Jenkins' (2006) twelve "new media literacy skills" (NMLs). Jenkins' NML framework conceives of people as consumers of media but more importantly as creative producers of original media content, both of which require social and cultural skill sets (NMLs). When such skills are not developed, people are often caught in a "participatory gap," with unequal access to opportunities, skills, and knowledge for school and work in the twenty-first century (Jenkins & MacArthur, 2006).

Qualitative data were drawn from two different Girls Inc. after-school programs — a writing program with the goal of producing an online digital magazine written by teens and for teens, and a leadership program with the goal of designing a model energy-efficient bus for their urban communities. The qualitative fieldwork included a series of observations, staff interviews, a focus group, and artifacts — including curriculum, photographs, and articles written by the participants. Data analysis was informed by a socio-cultural perspective that views learning as changing participation in social practice (Lave & Wenger, 1991) and mediated by tools (computers, smart phones, social media sites, cultural inquiry), talk, and activity structures (Vygotsky, 1978). The qualitative

results that emerged from the data were organized into the following themes: Environment and Learning Context, Participants' Learning Processes, How Tools and Activities Supported Learning Processes, Production of a Digital Magazine and Green Bus, and Emerging Twenty-first Century Literacies.

The quantitative phase of the study revealed strong connections between new media literacies (NMLs), media exposure, and interaction with different digital technologies. Namely, higher levels of media literacy skills were associated with higher "new media literacy skills" (NMLs) as defined by Jenkins (2006). This information contributed to understanding the way girls interacted with new media while illuminating methods for determining how to engage them in math and science and advanced forms of technology.

Qualitative data revealed the practice and development of NMLs and twenty-first skills as defined by New London Group (1996). These diverse forms of thinking and learning practices were reflected in expressions of identity, independence, creativity, and judgment. Digital tools and networks in the hands of the teens and innovative instructors afforded collaborative engagement as participants interacted, created and problem-solved — in response to personal and community issues. Interactions among the participants working as part of a collective group and the dynamic exchange that occurred with the use of tools and activities over time transformed both the participants and program goals.

Participants emerged from the programs with burgeoning identities as journalists, photographers, innovators, and collaborators. Mentored by instructors and through communities, their activities and growth provide an example of how dynamic learning environments and new media tools can collectively support and enhance the skills, dispositions, and identities of individuals and groups. The diverse range of skills and practices revealed in this study illustrate how and what new media skills girls are learning and applying both online and offline and how such skills can nurture twenty-first century capabilities applicable for school and work.

Contents

Chapter 1: Introduction

"Girls Inc. reinforced the message that it is okay to be who you are despite your challenges and background. I felt empowered to not allow society to define or shape the young leader I was becoming."

-Girls Inc NYC High School Junior Scholarship recipient

Today's landscape of new media[1] offers many opportunities for youth to engage in new social contexts, explore unknown landscapes, and experiment with different modes of expression (written, visual, interactive) in groups of varying sizes, and even to experiment with entirely new identities. A 2005 and Pew Internet and American Life study found that 80 percent of American households with teens were online, and 87 percent of youth aged 12-17 regularly connected to the Internet (Montgomery, 2007). The study revealed teens most commonly use the Internet for texting, interacting in social network sites, visiting entertainment sites such as YouTube, and downloading music. According to Pew's most recent study conducted in 2011, more than one-third of teens use the Internet to share content they produced (Watkins, 2009). Yet it is not simply the number of youth online or engaged with new media that is noteworthy, but how young people learn and live with new media in varied settings — after-school programs, at home and in online spaces (Ito, 2010).

Considering the paucity of research addressing how young people learn and live with new media, educators must determine what kinds of learning ought to take place along-side the integration of new media tools, offline and online, so that we can visualize the learning landscape of the future. By understanding and applying research on new media literacies[2] and twenty-first century skill [3] development, from out-of-school-settings to learning in schools, we can expand the availability and rich opportunities of the new media landscape to all youth. Young people have powerful digital tools and networks at their disposal —which need to be accessible and understood by educators, parents, and the youth themselves.

To date the use of new media in school settings remain sparse and sporadic, with after-school programs generating most of the available research on new media (Montgomery, 2007). The research suggests that socio-technical factors constrain the use of computers and the Internet in schools — often in ways that heighten educational inequities. Factors such as employment stability for teachers, IT support staff, and

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[1]The term "new media" refers to most digital technologies that are often characterized as being manipulated, interactive, networkable. I use the term in the sense that the New Media Institute (2012), refers to it — as a catchall term to define all that is related to the Internet and the interplay between technologies.

[2] New Media Literacies refers to Henry Jenkins' term to define, "the core cultural competencies and social skills that young people

[2] New Media Literacies refers to Henry Jenkins' term to define, "the core cultural competencies and social skills that young people need in our new media landscape…they change the focus of literacy from one of individual expression to one of community involvement" (Jenkins & MacArthur 2006, p.6. Jenkins 12 NML skills are used to identify the skills youth are learning offline and online.

[3] Like New London Group (1996, p.8), I refer to twenty-first skills as including, "capacities related to collaboration, project management, sense of audience, media savvy and competent use of tools" in preparation for school and work in the 21st century.

technology integration professional development, can make planning for technology use difficult.

Both school-based and after-school programs serve distinct but complementary functions. Attention paid to fostering new media literacy skills as defined by Henry Jenkins, and the development of participatory cultures, can shift the focus from individual expression to community involvement and develop a more integrated approach to school-based and after-school programs (Ito, Davidson, Jenkins, Lee, Eishernber, Weiss, 2008). Youth today are considered "digital natives" who possess the technological and cognitive skills for success in the 21st century. A closer look revealed that one segment of society, urban youth, are behind in developing these skills and caught in a "participatory gap,"[4] a term used to describe unequal access to opportunities, skills and knowledge to prepare youth for school and work. While many youth express an interest in advanced forms of technology — science simulation, game design, music and film production they lack the tools and, more importantly, the skills to pursue these interests.

Underrepresented urban youth make up the majority of youth situated in the "participatory gap," (Jenkins & MacArthur, 2006), and girls feature most prominently in the gap. Research points to a need to refocus our lens on how girls engage with new media and factors that either contribute and/or deter girls from engaging with advanced forms of technology, specifically, math and science skills that can lead to careers in innovative professional fields. Educators have witnessed a steep decline over the past two decades in the number of women and girls focused on science and engineering professions, and work in the technology industry. According to research on Girls and STEM Education from Georgia Institute of Technology, the number of women in science and engineering fields has plummeted from 29% in 1990 to 21% in 2006 (Milam, 2012; National Center for Educational Statistics, 1990). One possible contributing factor in the decline of women in STEM may involve social and cultural influences. Girls can be socialized to believe that careers in science, engineering and technology are more suited for boys. Girls can are treated differently in these fields or have different expectations for themselves based on their gender, which can lead to confusing identity development. Research designed to address these trends both in schools and out-of-school programs indicates that the ways girls interact with new media can contribute to our understanding of why girls are not readily drawn to math, science and more advanced forms of technology (Campbell, 2008).

Jane McGonigal, a noted game developer and socially conscious gaming advocate, reports in *Women & Girls in Gaming* (2013) that girls show much more interested in playing cooperative rather than competitive games and social gaming rather than solo games. She explains that girls prove more likely to engage with social networks such as Facebook, Twitter and Instagram than boys, while boys prove more likely to play interactive multi-player games and solo-shooter games. While there are significant differences in the way girls engage with new media as reported by

[4] The term "participatory gap" is used to describe, "unequal access to the opportunities, experiences, skills and knowledge that will prepare youth for full participation in the world of tomorrow" (Jenkins & MacArthur, 2006, p. xii). It is used in relation to the development of a 'participatory culture' where the focus shifts from "individual expression to community involvement" (Ito, Davidson, Jenkins, Lee, Eisherbner, Weiss, 2009).

McGonigal, 40 percent of gamers are women and girls, and 94 percent of girls under age 18 play games regularly. However, a distinguishing factor is the types of games that women and girls play.

Girls situated in this "participatory gap," predominantly from under-served communities are the focus of Girls Inc. a national all girls after-school organization. In response to these trends, Girls Inc. redesigned many of their national programs, combining academics with real-world experiences and developed a four-year intensive math, science and sports program. This model is significant because it focused on developing math, science and literacy skills along side the girls' leadership skills. Girls Inc. recognizes the significance of an integrated curriculum that can contribute to their academic and personal development throughout life. By examining the literacy practices of girls in collaborative after-school projects designed around producing a digital magazine and an energy efficient green bus, I expect to gain a greater understanding of how girls learn with new media.

With digital tools and networks increasingly in the hands of young people and innovative educators, we can yet see more advanced forms of exploring language, games, social interaction, and problem solving. Such self-directed activities can lead to diverse forms of learning, and, further, to explorations of how these diverse forms of learning are reflected in expressions of identity, independence, and creativity e.g., the ability to learn, exercise judgment, and think systematically (Ito, Davidson, Jenkins, Lee, Eishernber, Weiss, 2008).

Questions

The research community is conducting multiple efforts to define twenty-first century skills including capacities related to collaboration, project management, sense of audience, media savvy, and competent use of tools (New London Group, 1996, Partnership for 21st Century Skills, 2004). Given the diverse range of skills and practices involved, I argue that combing formal, informal, and virtual learning spaces used both online and offline for work and play will nurture twenty-first century capabilities. However, these emergent and complex competencies have no standardized method to assess growth. In response, this study seeks to understand: How and what twenty-first century skills are youth (girls) developing in after-school writing and leadership programs?

Vygotsky's sociocultural theory of learning provides a framework for considering how different types of new media programs — in a school (formal learning), after-school (informal learning), or in-home environments (self-propelled) — can work in unison to develop and assess twenty-first century skills. Additional research questions guided by Vygotsky's theories are: How do digital media literacy activities promote exposure to diverse viewpoints? How does digital media influence young people's communications and sociability, online and offline?

The Present Study

This study focuses on two diverse all girls, after-school settings with an emphasis on: the instructor's engineering of curriculum activities and guidance of in-depth discussions, the participants' world of social interactions and collaborative work, and the development of media projects. The after-school programs are a part of Girls Inc., a national organization with a mission to "inspire all girls to be strong, smart, and bold through life-changing programs and experiences that help girls navigate gender, economic and social barriers" (Girls Inc., 2001). The network of local Girls Inc. nonprofit organizations serve 125,000 girls aged 6-18 annually across the United States and Canada.

While this is not a traditional mixed-methods study, I collected both quantitative and qualitative data. Data collection focused on two distinctly different Girls Inc. after-school programs, one producing a collaborative digital magazine written by teens and for teens and a green-technology research project focused on science, math and leadership skill development.

The quantitative data shows how girls at distinctly different programs perceived their new media practices and informed me of conditions of access at home, school and in community settings. The qualitative fieldwork included a series of observations of the activities and discussions during the after-school programs, interviews with the instructors, and a focus group that revealed the girls' perceptions of their new media practices, the programs collaborative process and reflections on observations made during the programs activities. Collectively, through studying these human experiences, I gained insight into some of the factors that shape and the processes that make meaningful an after-school program (Dyson, 2005).

Overview

Juxtaposing these "social worlds" (Dyson, 1997) reveals the complexities of the social context in which girls in an after-school program worked collaboratively, and provides a platform from which to consider the problems and possibilities facing many youth caught in the "participatory gap." Chapter Two describes the relevant literature on participatory culture, networked communities and shared knowledge and expanding learning opportunities by bridging in-school and out-of-school literacy practices. Chapter Three details the methods used in the study. Chapter Four parallels the social worlds and literacy practices described above, the after-school world, the participants' world, and the "media world." Chapter Five summarizes the main findings of the study and discusses further implications.

Chapter 2: Literature Review

By refocusing our lens, I believe we can reposition ourselves as researchers, program developers, scholars and global citizens, supporting the idea that young people are active agents – in different ways and with varying force – in the construction of meanings and symbolic forms which make up their cultures and educational practices.

Helena Wulff, 1995

Theoretical Framework

A Sociocultural Theory of Learning toward a Participatory Culture

In today's complex world youth navigate among different contexts: schools, community settings, and home. Often in multiple virtual spaces and within these varied and complex contexts, they construct, affirm and communicate identity through multiple symbol systems (Thiel, 2005). Broadly speaking, research on youth cultures aims to understand how today's young people assimilate the symbolic resources made accessible to them in everyday life, and seek to examine modes of expression they employ in doing so (Buckingham, 2008).

By exploring the ways young people use new media in constructing identities and creating their own distinctive cultures while engaging in after-school programs, I expect to visualize more clearly the learning landscape of the future. While I don't want schools to look like after-school programs or after-school programs to look like traditional classrooms, research shows the "need to locate shared spaces between home and school knowledge in a way that academically empowers underachieving student populations and to offer practical alternatives that schools can use" (Schauble, Leinhardt, and Martin, 1997, p. 6).

Current conceptualizations of a sociocultural theory draw heavily on the work of seminal psychologist Lev Vygotsky and emphasize that meaning emerges in the interplay between individuals acting in social contexts and the mediators — including tools, talk, and activity structures that are its milieu. Operating from the perspective that at the core of sociocultural theory is the understanding that all human activity is mediated by cultural tools, symbol systems, and meaning-making. Researchers consider these issues as central to understanding how people come to learn new knowledge and make new interpretations using the tools of language, written texts, the act of composing, other symbol systems (such as those used in the arts), and new media.

Throughout life, social speech is used for the purposes of communication and social interaction (Cole & Wertsch, 2004; Piaget, 1962; Vygotsky, 1986), emphasizing that "meaning emerges in the interplay between individuals acting in social contexts and the mediators: tools, talk, signs and symbol systems, that are employed in those contexts"

(Schauble, Leinhardt, and Martin, 1997). Influenced by Vygotsky, those working from sociocultural perspectives have stressed the link between literacy learning and their participation in community life (Dyson, 1989; McClane & McNamee, 1990). This theory extends to distributing and negotiating knowledge within social groups working on common tasks, the ways in which literate practices occur and evolve outside traditional schooling, and an appreciation of the complexity of such practices.

Furthermore, Vygotsky considered development to be socially constructed, an important step for an analysis of learning for older children and young adults. Vygotsky believed that children construct their own knowledge based on social interaction and interaction with the environment. In this framework, learning is inseparable from culture as it is through interactions with school, family, and symbol systems unique to a culture that knowledge is built. He believed acquiring knowledge comes from two sources: 1) "spontaneous concepts," developed through direct interaction with the environment, often acquired informally out of school, and 2) "scientific concepts" that generally originate through some form of methodological instruction. In western societies, this implies classroom instruction. Vygotsky described the development and integration of these two phenomena:

> The development of the child's spontaneous concepts proceeds upward, and the development of his scientific concepts downward, to a more elementary and concrete level. Scientific concepts, in turn, supply structures for the upward development of the child's spontaneous concepts toward consciousness and deliberate use (Vygotsky, 1986, pp. 134-194).

As is apparent by the description of the integration of spontaneous and scientific concepts, social interaction plays an important part of learning. In addition, learning specific scientific concepts precedes the full development of a particular concept. In this sense, learning occurs before development. Vygotsky defined the gap between current development and potential development under the guidance of a more informed peer or adult as the *zone of proximal development.* That is the space between what children can understand/do without assistance — actual development level as determined by the interdependent problem solving, and what children can understand/do with assistance — problem solving under adult guidance or in collaboration with more capable peers (Bodrova & Leong, 1996). Suggesting that learning in a formal context or that which is most often known to take place in a school setting occurs optimally when the novice has developed spontaneous concepts learned through interaction with the environment related to scientific concepts learned in a formal context. "That is, scientific concepts fine-tune and raise spontaneous concepts to a level of conscious, strategic use, whereas spontaneous concepts are the framework on which scientific concepts are built" (Lee, 2000, p. 193).

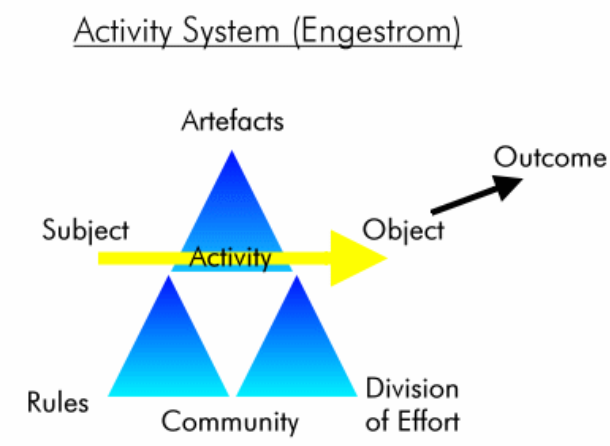
Jenkins work on participatory culture involving new media tools builds upon an established sociocultural view of learning that posits that learning is a social activity, taking place through communication or interaction with others (Vygotsky, 1978). Vygotsky's and Jenkins' theoretical perspectives imply a "dynamic" approach to teaching and learning — within a classroom or online with a community. As discussed earlier, Jenkins new media literacy framework envisions people as active agents not only for

media consumption but also for active media creation as well, such as producing a digital magazine. Furthermore, in Jenkins' view, these NMLs are "social and cultural competencies that go beyond access to technology and proficiency with different media platforms rather, they are conceived as critical skill sets that are bred and enhanced by one's involvement in a participatory culture" (Jenkins & MacArthur, 2006, p. 5).

Cultural Historical Activity Theory

Drawing on these intersecting theoretical perspectives, I turn now to discuss the principles of cultural historical activity theory (Engestrom, 1999; Scribner & Cole, 1981) as a way to illustrate its usefulness as an integrating framework for illuminating and understanding participants' learning and twenty-first century skill development in the context of after school programs.

As defined by Yrjo Engstrom, cultural historical activity theory is rooted in Vygotsky's early work with his theory of "mediation" and cultural tools and symbol systems mediate human activity. Vygotsky considered language to be the primary means of cognitive development. Therefore, his pre-occupation with literacy was focused on writing as a meditational tool or written language as an instrument of thinking. This was discovered to have its limitations when considering how to conceptualize literacy. Later Scribner and Cole, who investigated some of Vygotsky's key assumptions about literacy, shifted the focus of "literacy as a multiple rather than a unitary construct, calling attention to the distinctive literacies that can exist beyond the school house door" (Scribner, Cole, 1981; Hull & Schultz, 2001, p.11). By widening the lens of what is considered literacy and literate activities, homes, communities, and workplaces become sites of literacy use (Cole, Engestrom, & Vasquez, 1996; Hull & Schultz, 2001).



Engestrom's Activity System (Engestrom 1987, p.78)

Engestrom, et al. expanded Vygotsky's theory of "a complex mediated act," which is expressed as the triad of subject, object, and mediating artifact by adding three

mediating factors: rules, community, and division of labor (Engstrom, 1978, 1999). Engestrom established how a range of factors work together to impact an activity, as illustrated in the model above. In order to reach an outcome it is necessary to produce certain objects — a goal carried out by an individual or group. An organization or community that is not a defined part of the activity but associated and more or less related and in contact with it mediates human activity. The community can impose rules, norms, and conventions affecting activity, both individual actions and collective actions which can be seen as more or less unwritten guide lines, both informal and formal ones. All three of the above basic principles should be considered as an integrated system, associated with various aspects of the whole activity. Furthermore, an activity system is not a stable phenomenon, but changes constantly and is in contact with other activity systems all the time.

As a methodology for applying cultural historical activity theory, Engestrom outlined five claims that draw on first, second, and third generation work, and serve as a foundation for analyzing this work. The first claim is that the object (or goal) and associated activity systems (activities which are directed toward the goal) are the prime unit of analysis. This would apply, to individual participants working as part of a group to produce a digital magazine (the goal) and the reciprocal relationship between the individual and the group as it changes with this dynamic exchange. The second claim is how evolving changes create movement and growth in the activity system. The third claim relates to expansive learning, which emerges as practitioners struggle through developmental transformation in their activity systems, moving across collective *zones of proximal development*. For example, in the current study, the girls worked with peers and experienced instructors writing and editing a digital magazine. With each new article or editorial discussion new skills and knowledge developed. The fourth claim is the method of moving from the abstract to the concrete — it is grounded in Vygotsky's theory of scientific and spontaneous concepts. Spontaneous concepts develop through direct interaction with the environment and scientific concepts generally originate through some form of methodological instruction. Engestrom's fifth claim stems from interventionist research methodology aimed at recording, and analyzing cycles of expansive learning in local systems.

Cultural historical activity theory for researching learning in informal learning environments provided an integrating framework that helped illustrate a coherent portrait from a series of independent investigations. These interconnections were significant because they called attention to the relationships among learners and their environments in the context of meaning making. As I reviewed the framework, I developed a subset of questions to be addressed to illuminate the interconnections: What kinds of activities are supported in this learning environment or program? In what forms are talks expected? How do tools and symbols support forms of thinking that otherwise might not be? These questions proved significant for understanding the variability in learning, the process of learning, and the role of learning in personal history, focusing on the process, not only outcomes. Ultimately, asking the question: How can the learning activities that occur in these environments best be encouraged and fostered so that they afford increasing levels of opportunity and growth?

Integrated themes followed from this framework: learning and learning environments; interpretation, meaning, and explanation; and identity, motivation, and interest. Learning and learning environments addressed the variety of ways in which text, image, models and activities serve as mediators of and supports for learning. Next, interpretation, meaning, and explanation were considered as processes and products of social interaction. This emphasizes an evolutionary reciprocal process between individual, institution, and audience and acknowledges that meaning is inherently social including implicit and explicit dialogues. Lastly, identity, motivation and interest address the participants' productive development.

This theoretical framework, focusing on the dynamic relations of learning as implied by Vygotsksy, Engetrom, and Jenkins, provides a means for developing theoretical and empirical bridges between the macro level of the community and its youth-focused institutions and the micro level of youth and their productive development (Heath, 1982). By drawing on research on the lives of under-represented girls and those institutions that serve them I applied collaborative ethnographic fieldwork. Integrating individual and institutional levels of analysis, blending individual histories and practices in context with institutional descriptions and analyses I envision a rich tapestry of the varying intersections of these social worlds.

Review of Relevant Literature

This study drew on a spectrum of relevant literature: identity, informal learning, social tools and skills needed to cultivate a participatory culture and programs that are endeavoring to do so. The chapter attempts to situate adolescent identity and the cultural and development factors surrounding it, exploring the intersection and shift that occurred during the current onslaught of new media theorists and practitioners and the integration of informal learning theory.

Identity Construction in Social Contexts

> For a student of culture and personality, adolescence is fascinating. It's an extraordinary time when individual, developmental, and cultural factors combine in ways that shape adulthood. It's a time of marked internal development and massive cultural indoctrination…by connecting girls' stories with larger cultural issues — we can examine the intersection of the personal and political (Pipher, 1995, p. 26).

Children are socialized through the same relationships that teach them to speak and to understand. In this way, their minds are "socially constituted…through the internalization and transformation of social interactions" (Cazden, 1993, p.185). In the quote above, Pipher makes clear the nature of an individual's attempts to communicate and negotiate understandings of collective identity. The dynamic between individual voicing and collective declaration describes the difficulty, as well the necessity of the examination of "identity."

With the ever-shifting landscape of interactivity in the contemporary world — it is urgent that we widen our lens regarding questions of identity. Social theorist Zygmunt Bauman, like many contemporary authors, "emphasizes the fluidity" of identity, seeing it as almost infinitely negotiable, and in the process perhaps underestimates the continuing importance of routine and stability (Buckingham, 2008). The study illuminated the way girls perceive themselves within the context of these after-school programs and how they *identify* with peers, the community of Girls Inc., and would-be experts and authorities within these social contexts. Here I review key approaches to thinking about identity while adjusting the lens to consider how old and new theorists and practitioners from several disciplinary specializations are focusing on understanding and educating young people.

Accounting for Identities in Youth

David Buckingham is a media theorist and leading international researcher on children and young peoples' interactions with electronic media. In his chapter, "Introducing Identity" in *Youth, Identity and Digital Media*, Buckingham takes the reader

on a journey, analyzing the political economy of the cultural industries, the ways in which children and young people are represented and represent themselves, and how they appropriate and make meaning from media in their everyday lives. He opens the chapter with the quote, "The fundamental paradox of identity is inherent in the term itself. From the latin root *idem*, meaning "the same," the term nevertheless implies both similarity and difference, highlighting the dialectical nature of identity and some say "struggle" to "be myself" or to "find my true self" (Buckingham, 2008, p. 3). Within this framework, he explores the tensions between aspects of developmental psychology, social theory, cultural studies, and many others in an effort to situate the complex debate between a person's unique personal biography (based on biological, cultural, and social values) and who I think I am which may, "vary according to who I am with, the social situations in which I find myself, and the motivations I may have at the time," (Buckingham, p. 4). Ultimately, he believes that a greater understanding of digital technology, youth, and learning and specifically a young person's relationship to technology can provide evidence of the definition of identity and the new forms of identity that youth are negotiating.

Identity Development

The category of adolescence/youth is constructed from a combination of many different theoretical positions: philosophical, psychological, sociological, and biological. Adolescence/youth is described by adult culture in terms of adult values and understandings of the world, rather than by a code of youth themselves. Definitions in themselves are limiting — chronological definitions reflect status and biological ones generally equate the start of adolescence with reaching a stage of sexual maturity (Cole, 1996). The term "adolescence" is used within psychological discourse, and because of the close link between psychological and biological discourse, particularly in educational discourse. The term "youth" is used more in sociological discourse. Though the terms are often thought interchangeable, youth is a category that seems to refer to older adolescents, extended to include young adults. This study will use the term "youth" when referring to the participants in the age range between 14 and 17 years of age.

A psychological account of adolescence can be found in the work of Eric Erickson, most notably in his seminal book *Identity: Youth and Crisis* (1968). As explained by Cole:

> Erickson believes the task of young people about to enter adulthood is to achieve a healthy personality by incorporate their new sexual drives and the social demands placed upon them into a fully integrated and healthy personality. The result of this integration is what Erickson calls "identity," which he defines as a "sense of personal sameness and historical continuity". Our identity tells us how we fit in with the people around us and with ourselves of the past and future. Identity is not a single trait or

> belief. Rather, it is a pattern of beliefs about the self that adolescents construct to reconcile the many ways in which they are like other people with the ways in which they differ from them (Cole, p. 575).

In Erickson's view, the unfolding development of identity in adolescence is pivotol as the time for balancing social identity and individual identity, a time of "identity versus identity confusion" (Erickson, 1968). Erickson views adolescence as a life long process.

The traditional approaches to understanding youth, based on developmental and psychological discourse and adopted by schools, have serious limitations for youth. However, problems in this theory of learning arise when applying constructivist ideas to schooling of older learners. The universalizing stage theories of child and adolescent development described above have been probably the most influential in establishing truths about how we conceptualize youth and in turn, education.

In an effort to try on various identities, youth are labeled and categorized as different personas are negotiated: distributed, maladjusted, conduct disordered, oppositional, defiant, rebellious, and emotionally handicapped (Morss, James, Jenks & Prout, 1998). Since the late 1970's a contextualized approach based on the work of Jerome Bruner, Lev Vygotsky and Urie Bronfenbrenner has been favored in developmental discourse (Morss, 1996). The emphasis on the social has major implications for how adolescents were understood as social beings who operate both individually and in groups, interdependent with others and how education has a place to play in their development. But the social context is still seen as adaptive appealing either implicitly or explicitly to functionalist biology (Morss, 1996). Even with a great deal of criticism, developmental theories were resurrected in the 1990's. With the continued practice of framing and categorizing youth based on their academic performance, their socio-economic background, classroom dynamics, and sub-cultural or peer groupings, the last decade has seen a surge of criticism against these continued practices.

Identity as it relates to the present study of youth engaging in after school writing and leadership programs — is attempting to emerge from this criticism by taking into account the frames of social interaction and categories of youth, problematic as they are, and make a case for including the *practice* of learning in informal contexts in educational programming and not as a means to an end.

Social Identity: The Individual and the Group

A correlation between youth participation and social constructivism concerns self-reflection and the internalization of new knowledge, skills, and value-based behaviors. One conclusion made by researchers is that reflective, meaningful youth participation impacts a youth's civic identity, sense of social justice, and long-term commitment to civic engagement (Youniss, McLellan & Yates, 1999). This process is gradual, requiring participation in diverse settings, such that a youth can reflect upon and assert his or her

capacity to affect how social economic and environmental conditions relate to poverty, power, and politics (Bentley, 2003). Social constructivism would describe the development of civic identity through youth participation as "meaningful learning" that "involves willful, intentional, active, conscious, constructive practice that includes reciprocal intention-action-cycles" (Jonassen et al., 2000, p. 111).

The process of semiotic mediation or communication through various symbol systems demands a learning environment in which the elements of practice are inculcated over time by the novice and monitored by more expert others (Lee, 2000). By attending weekly editorial meetings with senior editors, writers not only learn to see connections between what they knew about important topics but also "learn how to raise appropriate questions and how to generate arguments using both textual and real-world knowledge" (Lee, p. 213).

I intend to raise some broad points and provide examples about how new media theorists and educational practitioners conceptualize digital technology, youth, and learning.

Cultivating Participatory Culture: Social Tools and Skills

As Jenkins and colleagues define it, "a participatory culture is a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices. A participatory culture is also one in which members believe their contributions matter, and feel some degree of social connection with one another, at the least they care what other people think about what they have created" (Jenkins et al, 2006, p. 3).

Jenkins argues that in order to build a participatory culture with the support of new literacy tools, participants must be literate and knowledgeable about how to navigate between old and new literacies as literacy now extends well beyond the written word (Jenkins, 2008). To be literate today, one must understand how strategically chosen and juxtaposed media combinations enable the construction and dissemination of meaning in ways that bypass or enrich traditional texts and the spoken word. Indeed, one must not only be able to read such media, but also to author it.

Social and environmental factors are equally as important as technical factors in shaping access and availability of new media tools. Jenkins spoke at the UC Berkeley School of Information in 2008 on "Combating the Participation Gap," pointing out that young people are grasping each new digital format as if it is a language they were born to speak, because they were. He argued that even native speakers, primarily those in underserved urban and rural communities, encounter problems with the participation gap. Admittedly, all children in America may have access to technology either in their schools or public libraries, but as he indicated, there is a fundamental difference between having a daily 10-minute window of access with many software and connectivity restrictions, filters, etc., and having 24/7 access. Jenkins called attention to how those who are shut out of what is happening with new technologies are also shut out of many social and

political arenas, also observing that access and technical skills are not enough to help children grasp the new media landscape, or to be a part of the participatory media culture.

Seeking ways to expand opportunities for participation, we must consider the tools and skills a person needs to become a full participant in a participatory culture. Part of the answer lies in developing social skills — agility with multi-tasking, responsible appropriation and networking skills, and an understanding of collective intelligence and the pooling of knowledge (Levy, 1997, in Jenkins, 2008).

Networked Communities and Shared Knowledge

In the above description of how to cultivate a participatory culture, I have highlighted some of the skills and tools youth need to become full participants in the new media landscape. Young people need these skills to navigate the new media landscape and to harness a broader set of knowledge, skills and attitudes that are needed for success in the today's world.

In *Convergence Culture: Where Old and New Media Collide*, Jenkins describes young people as the digital natives and adults as the digital immigrants. His idea of a convergence culture is the intersection of multiple media platforms, people and borders. Jenkins introduced the idea of participatory media culture in the 1970s and 1980s, originally using the term *fan communities* (Ito, 2009). Earlier, in a piece entitled "Interactive Audiences? The Collective Intelligence of Media Fans," (2003) Jenkins documented and identified Pierre Levy's view of fan communities as a form of *collective intelligence* and ultimately noted his predictions of the coming of the digital age. Notable for the collective intelligence concept he introduced in 1994, Levy went on to write *Becoming Virtual: Reality in the Digital Age* in 1988, in which he explains,

> The members of a thinking community search, inscribe, connect, consult, explore….Not only does the 'cosmopedia' make available to the collective intellect all of the pertinent knowledge available to it at a given moment, but it also serves as a site of collective discussion, negotiation, and development….Unanswered questions will create tension within cosmopedic space, indicating regions where invention and innovation are required.

Levy's cosmopedia —— expansive self-organizing groups focused around the collective production, debate, and circulation and meanings, interpretations, and fantasies in response to various artifacts of contemporary popular culture (Jenkins, 2008) providing a way for us to visualize the learning landscape of the future.

Jenkins further explains how fan communities have defined their memberships through affinities rather than localities. "Fandoms," as Levy called them, virtual communities, "imagined" and "imagining" communities that formed long before the

introduction of networked communities. Levy distinguished between shared knowledge (information known by all members of a community) and collective intelligence (knowledge available to all members of a community). Collective intelligence expands a community's productivity because it rescues individual members from the limitations of their memory and enables the group to act upon a broader range of expertise. As Levy writes, "within a knowledge community, no one knows everything, everyone knows something, and all knowledge resides in humanity" (Levy, 1997, p. 217).

James Gee takes up the concept of "shared knowledge" with an eye toward the dialogic discourse that lives within these spaces, expanding his ideas of "appropriate ways, times and places to that of building 'affinity spaces." Known for his work in discourse analysis, *An Introduction to Discourse Analysis: Theory and Method* (Gee, 1999), Gee writes, "Making visible and recognizable who we are and what we are doing always involves a great deal more than 'just language" (Gee, p.). It involves acting-interacting-thinking-valuing-talking (sometimes writing-reading) in the 'appropriate' way with the 'appropriate' props and the 'appropriate' time in the 'appropriate' places". In addition to offering these insights into collective intelligence as it applies in discourse, he calls for us to consider literacy in broader terms to include images and symbols. The specific significance of these "visual literacies" and multimodal literacy includes Gee's concept of new literacies. An important distinction between Gee and Levy's work, "Gee's focus is on the support system that emerges around an individual learner, while Levy's focus is on the ways that each learner contributes to the larger collective intelligence, but both are describing parts of the same experience" (Jenkins, p. 192).

Community and collaboration, fundamental to learning, possess key factors driving the increasing popularity of new media in education. New literacies and multimodal literacy are all a part of the new media literacies that require social skills through collaboration and networking. In *Situated Language and Learning; A Critique of Traditional Schooling* (Gee, 2004), Gee develops the notion of affinity spaces as informal learning amalgamations in which people seem to engage more with fantasy or fictional storylines than with their textbooks. He explains affinity spaces as unique in that, akin to fan communities, enable individuals of different genders, races, and ages to come together on a shared topic or idea, where each individual can contribute a skill while also encouraging the expertise of others (Gee, 2004). According to Gee, affinity spaces are "characterized by the sharing of knowledge and expertise on voluntary affiliations." Often but not always occurring online, they have a goal of sharing knowledge or participating in a specific area of interest. Gee argues how communities form because of a common interest, and for this reason able to bridge barriers of age, race, socioeconomic status and educational level.

Jenkins (2008), Levy (1997) and Gee (2004) make a strong case for how learning occurs in informal shared knowledge spaces, providing a clear lens for which to focus on how an individual learner can access, engage and develop new skills applicable to their individual work as well as collaborative projects. However, their work is primarily focused on interest driven activities, such as fan communities, fantasy games and fictional storylines. Digital Media and Learning Research Hub (2009) reports how only a small amount of youth move on to more advanced forms of knowledge production and

community participation. In order to expand and understand the affordances of digital media for learning — we must ask when and why certain youth move onto more sophisticated forms of digital media — and how that can be applicable to different learning environments.

Affinity Spaces Bridge Barriers

In *Situated Language and Learning: A Critique of Traditional Schooling* (2004), Gee asks, "Why School?" —— challenging while also considering that by participating in online, informal spaces, children can be "deskilled" when it comes to the more formal curriculum that is often taught in schools. His most recent work has expanded to focus on video games and how the principles of gaming can be applied to the classroom. He presents a thesis when writing as a new-media theorist; if schools could supply some of the learning principles that are woven into mainstream video games, the literary achievements of students, in particular poor and minority students, would be much different (Ito, 2009). Gee treats the subject of video games with considerable enthusiasm, and he devotes his book, *Good Video Games and Good Learning* (2007*)*, to deconstructing them to illustrate how conventional classrooms miss the mark by failing to apply the learning principles embedded in games. He challenges educators to think differently about both video games and their own practices within literary education.

In one type of participatory culture, by writing as a part of a Harry Potter or Beowulf fan community, for instance, the contributor creates a discourse with other fans or protagonists, validating others' voices and opinions while exploring his/her own. Children's literature is historically based in fantasy and offers a rich context for both online and offline interactive engagement: visual literacy, game development and story expansion (Buckingham, 2008).

Fantasy, role-playing and/or scenario building within a participatory culture give youth a means to show self-expression and to share cultural materials. Accordingly, gaming and story development are live action role-playing scenarios that offer opportunities for exploring and debating moral questions. Authorship in a fan community often takes on a very personal tone. When analyzing and developing a character, a writer often begins by creating a fictional identity for the character, but as the writer becomes more engaged with the story, the text can change from fictional to autobiographical (Jenkins, p. 188). Children can insert themselves into the story, giving them a voice, a way to play out a dilemma, and tell their tale, good or bad, all of which can be validating and therapeutic. A fan community can provide a safe space to expose and explore aspects of a one's life and identity in the context of a tolerant, helpful community where participants share deep emotional investments in the content (Black, R., in Jenkins, 2006, p. 189).

Overcoming Barriers and Cultivating Participation

As we progress in understanding the different ways that youth learn with different forms of new media and develop twenty-first century, we must seek to understand the kinds of support that teachers, parents and youth require in order to be effective participants and ethical communicators. In order to do this we need real conversations about how these new technologies can support more collaborative relationships and provide a context to improve and foster understanding of how we can learn from each other and create cross-generational involvement.

The Good Play Project, launched in 2006 at Harvard Project Zero, took up these particular concerns. The team set out to investigate the ethical issues of the new digital media landscape and how to "create ethical thinking and conduct." Howard Gardner, who founded Harvard Project Zero and is best known for his, "multiple intelligences" concept, compares the new digital media landscape to "frontiers….open spaces that often lack comprehensive and well-enforced rules and regulations and harbor both tremendous promises and significant perils" (Carrie, et al., 2009, p. 6). In this way, Gardner lends credence to the real fears that parents and teachers have about the safety of young people while navigating this new frontier, and at the same time builds a case for the possibilities it holds. The Good Play Project credits the Bloggers Code of Conduct (2007) and DOPA, the Deleting Online Predators Act (2006) as tangible efforts that have been made (and continue) in an effort to create some form of regulation. But the project also argues that more consequences will come with greater regulation, restricting young people from engaging in particular collaborative online projects set up by credible programs such as NASA and National Geographic. The Good Play Project set out to determine how we might best navigate this new landscape "ultimately for the promises of the new digital media being positively realized," indicating that "supports for ethical participation – indeed for the creation of 'ethical minds'— must emerge" (Carrie, et al., 2009, p.8)

The arguments made by the team at Harvard's Project Zero are taken up by Craig Watkins in his book, *The Young and The Digital* (2009), in which he documents one particular scenario that invites schools to recognize the possibility of offering networked tools and interactive online learning. Noting that had DOPA passed in its original form, the DOPA Act would have eliminated most interactive sites from libraries and schools. Watkins acknowledges the important role the American Library Association (ALA) played in fighting the original document, claiming how ignored the education efforts and could cause an even greater chasm in the "digital divide." But more importantly, in taking its stance, ALA publicly affirmed "the importance of online social networks to library users of all ages for developing and using essential information literacy skills" (Watkins, p. 21).

Watkins praises the work of Beth Evans of the Brooklyn College Library and her call to action in netConnect for America's teachers and administrators "to take the plunge into the social-media pool" (Watkins, p. 24). An electronic services specialist, Evans networked both offline and online with local science, art and history museums, and

created a MySpace account to inform and invite visitors to the library for the various collaborations with local museums. The idea came to her when her teenage daughter explained that she was not answering her mother's emails because her communication was all happening on MySpace. This "aha" moment for the mother inspired her to create a model that launched her into librarian-celebrity status, and more importantly, paved the way for many schools and educational institutions to at least consider jumping into the social-media pool.

William Wood takes up the discussion of fan communities and concerns around safety and ethics in his paper "Harry Potter and Mass Communication" (Wood, 2010). Written in direct response to Jenkins' *Convergence Culture* Chapter Five, "Why Heather Can Write: Media Literacy and the Harry Potter Wars." Wood explores Jenkins' point on the issue of how much fear is generated by those who are not a part of these communities, primarily among adults who can not appreciate the creative genius behind "an online fake newspaper, www.dailyprophet.com and how this 'connected culture' is beginning to burgeon in online fan-fiction," (Wood, p. 2). Wood argues for individuals who experience this "fear factor" to consider the value of online collaborative associations for children, and see how many of them simulate teacher-student relationships, often with the "teacher" being only 12 years of age.

Wood's challenges Gee's argument of "Why School?" (Gee, 2004) and the notion that participating in informal affinity spaces somehow "deskills" young learners. He argues that the predetermined guidelines and top-down teaching methodologies that dominate many classrooms often do not foster the same creativity and self-expression found in online communities. Wood's builds on Jenkins and Gardner's arguments of leveraging the creative genius evident of youth work currently taking place in networked environments. He emphasizes a need to break down the fear-factor mentality creating balance and revealing a way to visualize this work in a school environment.

Bringing Out Students' Superpowers: Expanding In-School Opportunities

Research on literacy programs show that when teachers integrate popular culture into reading and writing curriculum the emphasis shifts to literacy as a social practice, as opposed to the autonomous model (Alvermann, 2011; Street, 1993). Schools have opportunities to expand *how* children are socialized into different literacies — their different "ways with words" by offering new spaces that contribute and support such practice (Heath, 1982).

Literacy experts recognize — enacting, reciting and appropriating elements from existing stories as a valuable way and organic part of the process by which children develop cultural literacy (Heath, Wolf, 1992; Jenkins, 2006). Jenkins argues that young people become fans of a story or character, not because of the story or character in particular but because of the desire to engage with people exsisting in that world — such as comic books or the Harry Potter series. He uses the example of J.K. Rowling's tales, explaining that their popularity is in some degree due to people engaging in the genre and what it offers, and in part because Harry's experiences differ from those of peers in their

own schools. Furthermore, writing within a genre that draws many diverse readers (fans of fiction, fantasy, science fiction, history, magic, costumes, mythology) circulates the stories among a far larger group of people.

Anne Haas Dyson, in *Writing Superheroes: Contemporary Childhood, Popular Culture, and Classroom Literacy* (1997), addresses both positive and negative implications of popular media culture while documenting the literacy practices of a third-grade classroom. Her basic premise posits that popular media culture characters such as superheroes can provide children with a context for discovering their own super powers that can be closer to their own identities, while also demystifying some of the pop culture myths about superheroes. As does Jenkins, she addresses the idea of children feeling left out of archetypal fantasy play when the characters depict a particular gender or race (Jenkins, 2005, Dyson, 1997). Dyson explores the link between composing a text and composing a place for oneself in the world (Dyson, p. 229). The value of children exploring the stories of superheroes and pop culture characters as well as their own stories, supports the development of their literacy skills, while also giving them a "ticket to play" (Jenkins, p.182) to step into the fantasy. She illustrates how text is formed where a social relationship between the writer, the audience and the text intersect.

Dyson's ethnographic methodology of studying children is well documented in her book, *On the Case* (2005). Her work in schools over the past 20 years gives many excellent models of how to approach the topic of how children learn with new media. Dyson looks at collaborative inquiry through her literacy study of third-grade children documenting through narrative analysis, the ways that race, gender and social relationships converge and the process of co-construction occurs (Lee, C., Smagorinsky, L., 2000). In light of Dyson's ethnographic methodology, we can consider several important questions. For instance, how do we validate the learning that is taking place with new media, with formative and summative assessment, demonstrating and validating what learning is taking place while also developing new ways for youth to access and engage with new media tools?

In School Examples of Producing in the Digital Writing Realm

To leverage the literature and research so far presented in order to expand the use and availability of new media tools in multiple learning environments, I will focus on the growing body of literature that focuses on what youth are doing with new media, particularly in participatory cultures, as seen through writing and collaborative new media environments both online and offline.

In a recent publication, "*Digital Writing Matters*" (2010), The National Writing Project advocates experimenting with digital tools for the purpose of deepening and furthering the process of writing, that is folding the process of writing into technology. At the National Writing Project's "Digital Is" 2010 conference, a high school teacher compared technology to an old-fashioned Hobart bowl mixer with a pasta maker attached. For example, reading and writing teachers put ingredients into the mixing bowl and adjust speeds according to learning capacities of their students and their goals and

objectives. As the work progresses and understanding grows and develops, they attach the pasta maker, which has many different features to accommodate various ways for shaping and cooking the dough. With all of the variables considered, the pasta, or the outcome or product will depend on each individual (2010).

We can imagine the ingredients as the subject area, writing, history and science and the tool or pasta maker as updated software designed to produce simulation exercises, the remix and production of media content. With access to innovative teachers and the right tools, youth can develop the skills and the ability to interview experts, share multimedia, to assess digital documents and write for authentic audiences. Exercises can include activities such as producing blogs, wikis and web quests and the development and interaction with educational simulations and augmented reality games fostering community, collaboration and accessibility.

In *Writing, Learning and Leading in the Digital Age*, published in 2010 by The College Board, The National Writing Project, and Phi Delta Kappa International as part of the College Board Advocacy & Policy Center's "Teachers Are the Center of Education" series, nine classroom teachers explain and document how they use digital tools to teach writing. The majority of the teachers —– while they had questions about their individual programs and expressed uncertainties about measuring the effect of the digital tools on their students' work — consider the use of technology in their programs as a dynamic tool.

Participants noted that digital tools allow for story expansion, combining print, music and video, explaining how technology can be used to support student work by enabling them to go deeper in their writing (Malley, J. p. 5). The teachers commented on the value of students exploring their own personal stories, ultimately producing online oral histories, and indicated that they are witnessing true reflective attention: judgment, reasoning, and deliberations around projects, and student engagement in the dynamic process that they themselves generate through inquiry (Suyeyasu, K. p. 8). Instead of writing notebooks in isolation, students can now share work in arriving at something larger than would be possible if they worked alone.

Collaborative New Media Environments: On and Offline

Currently in its third year of development and research, an initiative currently addressing the complex challenge of assessing how youth learn from networked and peer-based interaction, is an international social networking project funded by the Spencer Foundation. Glynda Hull and her colleagues in Norway, India, South Africa and the United States (Oakland, California) are investigating the sociocultural, developmental and educational implications of engaging youth around the world in emergent literacies both online and offline. In the online environment of "Kidnet," the project tracks "interpersonal and intercultural negotiation and knowledge construction that the creative arts based network reveals over time" (Hull, et al, 2009). They chose the four particular geographies on the basis of both similarities and differences. Specifically, project designers judged that these regions are similar in that they have not had the benefit of

experiencing the digital revolution due to socioeconomic and political circumstances; on the other hand, they differ in the dimensions of language, culture and geography.

This innovative international project is providing a unique lens on the how, what and why or on the *access*, *use* and *outcome* on the broader focus on the sociotechnical factors that influence whether and how youth access technology. By bridging school and informal learning environments cross culturally, we can leverage the different types of new media programs — providing greater accessibility to all youth.

Discussion

With digital tools and networks in the hands of young people and innovative educators, we can see more engagement in the exploration of language, games, social interaction, problem solving and self-directed activities that leads to diverse forms of learning. Examples of how these diverse forms of learning are reflected in expressions of identity, independence and creativity, and in the ability to learn, to exercise judgment, and to think systematically. (Ito, Davidson, Jenkins, Lee, Eishernber, Weiss, 2008).

I argue that the educational organizations discussed here — schools, museums, libraries and universities are contributing to an understanding of how the new media landscape is shifting the way information is delivered and accessed by today's youth. Having said that, I have argued that educational organizations have a responsibility to conduct thorough research that goes beyond the verbal and written methods of collecting and recording data and to re-think how to consider evidence of equitable resources. It is imperative that we demonstrate an understanding of how to create and use digital literacies — including multimedia, blogs, wikis, podcast, and social networking in learning environments.

In the context of the literature presented here and programs that have experienced success it is important to highlight that two clear issues have arisen from the research of new media. That is, how can research on new media from out of school settings be applied to learning in schools — and how can the growing momentum of participatory cultures be leveraged to transform formal learning environments —– schools, libraries and museums — into dynamic learning spaces while closing the participation gap (Evans; 2006 in Watkins, 2009).

It was more than 100 years ago that John Dewey wrote about how an experience is an experience only if it involves interaction between the self, another person, the material world, the natural world or an idea (Dewey, 1938). Furthermore, without interaction, learning is sterile — never changing the learners and never changing the world. I believe that his vision has the greatest chance of being realized today with the possibilities of digital tools, networks and twenty-first century skill development in all learning environments.

CHAPTER 3: METHODS

Media Literacy; to access, analyze, evaluate, and communicate messages in a variety of form. Aufderheides, 1993

In this chapter, I describe the different characteristics of Girls Inc. and its community who played a role in this study. I discuss the procedure by which I collected, analyzed, and wrote up quantitative and qualitative data for this study of how two after school programs created a curriculum that incorporated in-depth discussions, the participants' world of social interactions, and the production of two collaborative projects.

My research was guided by the following questions:

1. What and how twenty-first century skills are youth (girls) developing in an after school writing and leadership program?
2. How do digital media literacy activities promote exposure to diverse viewpoints?
3. How does digital media influence young people's communications and sociability, online and offline?

Study Methodology

This study is a multi methods study that includes both quantitative and qualitative data (Creswell, 2007). The central premise of this study was that educators and researchers have called attention to the need to define twenty-first century skills (New London Group, 1996) and to create national standards for media literacy assessment (Scharrer, 2003; Potter, 2004). Such standards would provide a basis for evaluating the relationships between media literacy, digital participation, and facilitating future media literacy interventions. As shown there is some support in the literature but required further empirical validation.

Phase 1 was a quantitative study that looked at statistical relationships between offline and online behaviors, in accordance with the New Media Literacy ("NML") framework (Jenkins, 2006), which views new media literacies as social and cultural skill sets. Following the macro level analysis, Phase 2 looked at two specific after school programs using qualitative case study methods to better understand the dynamics of what and how twenty-first century skills girls are learning and the social and cultural skills sets that are demonstrated in these programs.

Phase I: Quantitative Methods

Research Design

Creating standards and guidelines for media literacy is difficult because research questions on the new literacies of the Internet and other digital technologies often take place in contexts far too complex and rich for any single perspective to account for all that is taking place. To understand these new literacies will require us to collectively bring multiple sets of perspectives to research on new literacies. Indeed, recognizing multiple realities (Labbo & Reinking, 1999) is essential before we can more fully understand what new literacies are, how they come to be, and how they evolve and develop.

The quantitative phase of the study seeks to contribute information about the connections between new media literacies, media exposure, and engagement with different digital technologies, representing a much-needed addition to the literature on media education. The condition of belonging to one of these groups used as the independent variable, while the 12 NMLS's were considered as dependent variables.

The survey instrument was crafted, pre-tested, and revised to address both offline and online behaviors, in accordance with the New Media Literacy ("NML") framework (Jenkins, 2006) which views new media literacies as social and cultural skill sets.

Sampling

A survey sample size of 150 participants engaged in Girls Inc. after school programs provided a unique sampling of the way the age range in this group is engaging with technology, as producers and consumers. With a goal of 150 participants from two different Girls Inc. chapters, and multiple Girls Inc. programs, the survey was designed to capture the behaviors and perspectives of this age group without bias to any particular program.

Sampling Procedure

The participants were approached to participate by the program directors. There was no specific criterion except their age and grade level, (grades 7-8, age 13-14) and (grades 9-11, age 15-16) and their participation in afterschool programs.

Girls who attend the after-school programs received information on the study from program directors one week before the survey was administered to ask questions and consider whether they wanted to participate. At that time, and again on the chosen day that they took the survey the program director read from a script informing the participants about the purpose of the study and the process. Incomplete surveys were not included in the final study, therefore the final sample size was (N=108).

Data Collection Procedures

The survey was made available on secured website administered by Survey Monkey. The link was distributed to the program and site directors of local afterschool programs and programs onsite operated by two local Girls Inc. chapters. The survey was administered by each individual chapter during their after school program times, so the day and time varied for each chapter. All surveys were administered over a 3-month period, depending on the availability of the program directors, and instructors. Due to the unavailability of computers, 80% of the surveys were printed and completed in a paper and pencil format. After the paper surveys were completed and collected, the participants' responses were entered into Survey Monkey along with the completed online surveys.

The first page of the online survey was an Assent form where respondents were informed that their participation was voluntary, with the option to withdraw at any time, and that the questionnaire was anonymous. To ensure the anonymity of the participants the survey opened after clicking the assent form "Agree" box.

At the suggestion of the local chapter Girls Inc. Executive Director participants who completed the survey had the opportunity to win an iPod. A participant from the Alameda chapter was the winner of the iPod. The material incentive for taking part in this study was based on the premise that the participants would benefit from knowing that their opinions and impressions about educational technology matter. To maximize participation, the questionnaire was designed as a fun personality quiz. Of the 140 girls that showed an interest in participating in the survey, 130 clicked or checked the Assent Agree box and 108 actually completed the survey.

After completing the survey, a second link was made available, for participants to enter a drawing for the iPod Touch. The second three-question survey box asked participants for their name, Girls Inc. chapter, and their favorite online game. As with the completed survey, 108 participants completed the iPod Touch raffle drawing.

Instrumentation

The survey instrument (see Appendix A), is an intact instrument that was crafted, pre-tested, and revised by a group of designers from Play Project (2001) to address both offline and online behaviors, in accordance with the new media literacy ("NML") framework (Jenkins, 2006). The overall reliability of scale is high (Cronbach's alpha = .903). The designers ran a factor analysis to test the alignment of Jenkins NML scores with the hypothesized structure (Literat, 2010). As a result, 10 out 12 skills were shown to prove effective as measurement scales to determine a correlation between high NML scores and a high media literacy score, and conversely, low NML scores and a low overall media literacy score.

The survey questions sought to identify the following aspects of student use: 1) access to technology in homes, schools, and after school programs; 2) the history of

technology use across multiple settings; 3) the use of formal and informal learning resources; 4) the motivation to learn about computing; and 5) self-rated knowledge of computing terms and software tools. The items on the questionnaire have been carefully crafted to address both online and offline behaviors, in accordance with the NML framework.

The survey is structured around four main sections: demographics, media use habits, new media literacy skills (NMLs), and civic engagement. None of the questions on the survey are mandatory, and respondents could choose to skip any question. Section one, the demographics section, contained six questions, asking participants about their gender, age, highest level of education achieved, annual income, ethnicity, and the primary language spoken at home. Section two, on media use habits, asked respondents about: a) their access to computers and the Internet; b) the extent of their exposure to different media forms (measured in time spent per week); c) their digital memberships and affiliations (also measured in time spent per week); and d) their creative engagement with multimedia (measured on a 4-point Likert-type frequency scale).

In terms of media exposure, respondents entered the number of hours per week they spend on each of the following activities: browsing the Internet, watching television, reading print media sources, and playing videogames. For the digital participation section, respondents entered the number of hours per week that they spend engaging with a variety of Web 2.0 platforms including: Facebook, Twitter, YouTube, MySpace, other social networking sites, online groups (Yahoo, Google Groups and other online communities), message boards, single-player games, multi-player games, blogging, and podcasting.

The third section aimed to assess respondents' NMLs by presenting them with a randomized series of sixty statements about their personality, social and cultural engagement, online and offline peer interaction, learning styles, media consumption and creation patterns. These statements were designed around the 12 NML skills identified by Jenkins (2006). The statements are:

- Play — the capacity to experiment with one's surroundings as a form of problem-solving
- Performance — the ability to adopt alternative identities for the purpose of improvisation and discovery
- Simulation — the ability to interpret and construct dynamic models of real-world processes
- Appropriation — the ability to meaningfully sample and remix media content
- Multitasking — the ability to scan one's environment and shift focus as needed to salient details
- Distributed Cognition — the ability to interact meaningfully with tools that expand mental capacities
- Collective Intelligence — the ability to pool knowledge and compare notes with others toward a common goal

- Judgment — the ability to evaluate the reliability and credibility of different information sources
- Trans-media Navigation — the ability to follow the flow of stories and information across multiple modalities
- Networking — the ability to search for, synthesize, and disseminate information
- Negotiation — the ability to travel across diverse communities, discerning and respecting multiple perspectives, and grasping and following alternative norms
- Visualization – the ability to create and understand visual representations of information.

Five statements for each NML were included in the survey, for a total of sixty questions. These statements addressed both technology-related and non-technology-related behaviors, in accordance with my view that NML skills are social and cultural competencies that move beyond technological capability or media expertise. The questions are assessed on a five-point Likert-type scale (1=*Strongly Disagree*, 5=*Strongly Agree*). For a full list of the statements used in the questionnaire, please see Appendix A.

Data Analysis

In terms of the relationship between media exposure and NMLs, I hypothesized that higher levels of new media literacies would predict a higher degree of engagement with different media forms — particularly new digital media — and therefore a significant difference in NMLs between people with low versus high levels of media exposure. An increased degree of digital participation in various digital platforms would also relate to high NML levels, with light users scoring lower in media literacy than heavy users of the digital platforms**.**

The responses were downloaded from Survey Monkey as an SPSS data file. The survey data was analyzed using SPSS. The participants who did not complete the media literacy section of the survey were eliminated from the sample. After completing the qualitative data, a more informed, analysis was conducted using the quantitative questions, (see Table A). Data from the observations, interviews and focus group provided an informed way to further explore the quantitative data in an effort to establish a correlation between the respondent scores on their NML skills and their media literacy score.

Table A:
Quantitative Questions Developed to Operationalize Data

How are youth accessing technologies? Home, school and after school?
How many hours per week are youth generally spending on different media sources? And across multiple settings?
What are your digital memberships and affiliations and how much time per week do you spend?

Do they engage creatively with multimedia?
Are they familiar with the term, media literacy?
Can they define media literacy in your own words?
What types of digital participation activities do participants spends the most time with?
What practices (factors) show how digital media literacy activities promote exposure to diverse viewpoints? And their correlation to NML skills; simulation, Distributed Cognition, collective intelligence, judgment, networking, and negotiation.
What new media practices are embedded in existing (and evolving) social structures and cultural categories? And their correlation to NML skills; play, performance, appropriation), transmedia navigation, and visualization.
Does interfacing and interacting with new media tools extend and change the way you interact with information?

A reliability analysis using Cronbach's alpha was then run on each of the subscale scores and all survey items together. The overall reliability of the scale was high (Cronbach's alpha = .937). See Table B for a summary of the reliability analysis and Appendix C for the detailed table. Negotiation (.831) of the subscales had reliability in the good range, play (.74), distributed cognition (.736), multi-tasking (.787), collective intelligence (.70), networking (.759), and visualization (.758) had reliability in the acceptable range, and simulation (.691), performance (.678), appropriation (.613), and transmedia navigation (.649) had reliability in the unacceptable range.

Each of the 12 New Media Literacy (NML) subscale scores were assessed for normality, by examining the mean, median, mode, skewness, kurtosis, and the histogram plots, (see Appendix B). The 12 NML subscale total scores were computed for each, with higher scores indicating stronger agreement. The coding structure was as follows: 0 was coded for "none", 1 was coded for strongly disagree, 2 was coded for disagree, 3 was coded for neutral, 4 was coded for agree, and 5 was coded for strongly agree. There were 5 items for each subscale, for a total possible score of 25. A univariate analysis was run first on all survey items. This included examination of frequencies, percentages, or means and standard deviations, as appropriate to the level of measurement of each item.

Table B:
Summary of Cronbach's Reliability for the Media Literacy subgroups (N=108)

NML Skill	**Cronbach's**	**N**	**Reliability**
Play	.74	108	Acceptable
Simulation	.691	107	Slightly low
Performance	.678	108	Slightly low
Appropriation	.613	107	Slightly low
Distributed Cognition	.736	105	Acceptable

NML Skill	Cronbach's	N	Reliability
Multi-tasking	.787	106	Acceptable
Collective Intelligence	.70	106	Acceptable
Judgment	.744	103	Acceptable
Transmedia Navigation	.649	107	Slightly low
Networking	.759	101	Acceptable
Negotiation	.831	108	Good
Visualization	.758	108	Acceptable

Next, I explored the participant's media exposure, digital participation and civic engagement. The bivariate differences between the high and low media exposure groups were particularly pronounced in the areas of internet in their free time, Facebook, YouTube and online groups.

Through correlation analysis, I explored the relationship between NML's and exposure to specific media. Media literacy was operationalized four different ways based on four survey items; the number of hours that girls used the **internet in their free time** each week (1-10 hours was recoded as the LOW group and 10-20 hours, 20-30 hours, 30-40 hours and 40+ hours were grouped in the HIGH group); weekly hours that girls used **Facebook** (0 to 5 hours was coded as LOW and 5 to 20+ hours was coded as HIGH); weekly hours that girls used **YouTube** (0 to 5 hours was coded as LOW and 5 to 20+ hours was coded as HIGH); and number of hours on **online groups** per week (0 hours was coded as LOW and 1 to 20+ hours was coded as HIGH).

Pearson correlations among the 12 NMLs were run to examine associations among the 12 skills, (see Table C). As expected, the 12 skills were highly correlated with one another. To determine if there were any differences in mean scores across the 12 NML scores by low or high media literacy: student t-tests were run separately for each of the four media literacy subgroups. Cut-points for media literacy for the above four variables were computed based on combining conceptually logical categories as close to the median as possible so that half the sample was in each group.

Table C:
NML Skill Pearson Correlation (N=108)

NML Skill	Play	Sim	Perf	App	Dist-Cog	Multi-tasking	Col Intel	Judg-ment	Trans-media	Net	Neg	Vis
Play	1											
Simulation	.360**	1										
Performance	.096	.351**	1									
Appropriation	.347**	.493**	.444**	1								
Distributed Cognition	.337**	.509**	.291**	.346**	1							
Multi-tasking	.316**	.334**	.194*	.385**	.368**	1						
Collective	.342**	.425**	.235*	.449**	.499**	.357**	1					

Intelligence												
Judgment	.334**	.437**	.243*	.375**	.614**	.488**	.587**	1				
Transmedia Navigation	.220*	.468**	.311**	.479**	.519**	.327**	.440**	.443**	1			
Networking	.340**	.317**	.300**	.629**	.251*	.302**	.378**	.273**	.439**	1		
Negotiation	.344**	.357**	.270**	.461**	.488**	.323**	.625**	.492**	.490**	.564**	1	
Visualization	.371**	.538**	.218*	.474**	.619**	.466**	.442**	.583**	.445**	.510**	.515**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed)

Due to the categorical nature of the 4 Media Literacy grouped variables, Spearman correlations were run between the 4 Media Literacy sub-groups and the 12 New Media Literacy scores. Several significant associations were found.

Bivariate associations were then examined by relevant sub-groups of interest, to determine if there were any differences in mean scores across the 12 New Media Literacy scores and the total score by sub-group. Independent sample student t-tests were used to test differences in average scores, at the .05 level of significance.

Phase II: Qualitative Methods

Qualitative Research Design

Phase II of this study was a qualitative study which used ethnographic methods to illustrate two afterschool programs located in large urban areas, with the San Francisco Bay Area. It focuses on how and what girls are learning in an all girls after school writing and leadership program and why they have come there – their interests and their sense of identity. It describes how the learning environments support the activities and the apprenticing of the instructors while developing the social and cultural skill sets of the participants toward the development of twenty-first century skills. By describing how the participants themselves demonstrated a deep awareness of the problems and possibilities of navigating cultural milieu of new social contexts, exploring unknown landscapes and experimenting with entirely new identities, we are invited to focus on a segment of urban youth that are considered part of a "participatory gap". The intersection of these – the learning environment, the activities and apprenticing and self-motivated participation of the girls — created an opportunity to consider how these afterschool programs are providing access to the opportunities, experiences, skills and knowledge that will prepare youth for school and work in the twenty-first century.

Setting and Participants

All settings were part of the Girls Inc. national organization. Middle school and high school girls from two sites participated in this study. One site was part of the Girls Inc. chapter which I will refer to as Teen Zine. The goal of Teen Zine was to produce a collaborative on online digital magazine. The second site was part of a larger Girls Inc. chapter, and I will refer to this program as Teen Innovate. The goal of Teen Innovate was to design a prototype green bus and a proposal for resolving local transportation issues for their local communities. The County Transportation Commission sponsored the green bus project.

Girls Inc Background and Context

Girls Inc. currently has over 1600 program sites in over 300 cities in the United States and Canada. The network of local Girls Inc. nonprofit organizations serves 125,000 girls ages 6-18 years old; 44% are between ages 12-18 years old, 70% are girls of color, 65% of girls served live in households with annual income of less than $25,000 and 48% of girls served live with one parent.

The First Wives Club, as it was called, was Founded in New England in 1864 during the Industrial Revolution. The founding of the organization was in response to the newly established working class of women who had migrated from rural communities to cities in search of employment in the new textile mills and factories. Between 1895-

1936 girls clubs were established throughout the northeast, and by 1945 the Girls Clubs of America, now Girls Inc. founded 19 Charter Girls Clubs in Springfield Massachusetts.

Girls Inc. Bill of Rights

The original goal, like many early centers at this time, was to give women and their daughters an alternative to being on the city streets. Programming in the early days was focused on recreation and on preparing girls for their future roles as wives and homemakers, offering such courses as sewing, and cooking. While the Girls Inc. Bill of Rights may have changed and evolved it continues to hold the basic premise, "that all girls deserve the opportunity to make individual choices without prior restrictions".

Girls have the right to be themselves and resist gender stereotypes.
Girls have the right to express themselves with originality and enthusiasm.
Girls have the right to take risks, to strive freely, and to take pride in success.
Girls have the right to accept and appreciate their bodies.
Girls have the right to have confidence in themselves and to be safe in the world.
Girls have the right to prepare for interesting work and economic independence.

Local Chapters

Local Girls Inc. chapters located in the San Francisco Bay Area served girls, grades 7-8, age 13-14 and grades 9-11, age 15-17. The decision to survey only Middle and High School aged girls was made because of the relevance and comprehension level of the age group, to understand the relevance of the survey and to understand the survey itself. The participants were predominately African American and Latino, and all read, write, and speak English fluently. It was not imperative that the participants were currently engaged in an online media project but that they were actively involved in a Girls Inc. afterschool program.

Girls Inc. was a unique organization for this particular study as it contributed a rich cross-section of the population for which this study aims to address. The chapters that were recruited for this study each operated both national and local programs with a unified mission. Girls Inc. programs focused on specific skills such as — leadership and community action, media literacy, economic literacy, health and wellness, sports and science, technology, engineering and math (STEM).

Teen Zine

Teen Zine was a program for middle school students to collaborate with high school students to produce a local teen magazine, OutLOUD. OutLOUD was written for teens by teens. Participants learned how to create an online magazine layout and contributed to the content of the publication by writing and editing pieces and by

contributing and designing artwork. Interested 7th and 8th graders were required to take part in an interview process in order to participate.

For the past two years the chapter produced a magazine that was printed and distributed only to the chapter participants. In an effort to expand distribution and to create a magazine that offered diverse opinions, they chose to produce the magazine in a digital format, and invited five local school and community organization representatives and their youth writers to participate in the production and writing of the magazine.

Teen Innovate

Teen Innovate was an intensive program for teen girls focused on math, science, engineering, technology and sports. It was designed to have an impact on girls' persistence in math and science and career planning, sports participation and on girls' views of themselves as leaders. The three-year cycle provided a tangible commitment to each participant and a progression of their experiences, which culminates in a paid internship.

Innovate is a problem-based curriculum that capitalizes on girls' interest in design and environmental issues. It provided structured interactions with science, technology, engineering and math (STEM) professionals, including having girls participate in engineering teams and presenting innovations to STEM professionals. Teen Innovates use of the innovation process of STEM experiences for girls encouraged their interest in STEM careers and provided insight and opportunities for research on learning STEM concepts in informal learning environments.

The data for this study was gathered during the 2nd year of the girls' involvement with Teen Innovate. They started the program in 8th grade and were in 9th grade during this study. The ten girls that are represented here attend public and private high schools through out the area. Their only association with Girls Inc. was from the Teen Innovate program. Teen Innovate had the goal of developing and designing a model green bus with the dual goal of creating solutions to transportation issues in their local communities. See Table 3.1 for program details.

Table 3.1: ***Overview of Sites***

Site	**Participants**	**Instructor and Community**	**Program Details**
Girls Inc. chapter	Girls aged 14-17	Main instructor: Journalist Network of local school paper instructors. Guests: Professional editors of local newspapers.	**Teen Zine Online Magazine** **Objective: develop particpant's journalistic skills and production of online digital magazine written by youth and for youth.** School year commitment Weekly 2 hr. meeting Curriculum based on development

Site	Participants	Instructor and Community	Program Details
			of weekly writing, photojournalism goals and chosen story goals by participants.
Local community center	Girls aged 14	Main instructor: Scientist	**Teen Innovate** **Objective: Participants develop and design a green bus for their community.** 4 year program commitment. Weekly 2.5 hr. year round meetings Dual STEM and sports curriculum Structured weekly curriculum; emphasis mechanical engineering, innovation, design principles, science and math.

Researchers Role

I selected this national organization based on my prior experience working with urban after school programs. My role in this study was as an observer. The focus is on diverse populations of children with the double aim of providing the tools and skills for them to benefit from the availability of strong literacy curriculum that merges old and new literacies. This work took place in K-12th grade classrooms, informal learning environments, virtual spaces, as well as in the planning/development room and research lab. By continuing to teach and work in the research and development of educational programs, I brought an informed and practical perspective to my work. As an educator and researcher, I believed that the opportunity to participate in this study is valuable to the participants involved. This message communicates to school-aged children that people in education are consistently developing better ways of designing educational technology so that we can visualize the learning landscape of the future — one where all youth have access to advanced forms of knowledge production and community participation.

Qualitative Data Collection Procedures

My data collection evolved in relationship to my increasing knowledge of Girls Inc. My original research protocol reflected plans to observe Teen Zine for six weeks but as my relationship with the group developed, I was invited to observe for 4 months and to include a focus group with the participants. The additional time for observations, staff interviews and the focus group proved to be fruitful as it allowed me to gain a greater

understanding of the program and the participants as they collectively navigated the writing and production of the digital magazine. In addition, due to various holidays and events, there were 6 weeks out of the four months when the group did not meet to work on the magazine.

Access to Teen Innovate was not as forthcoming as with the Teen Zine program. I was granted access to two, 2 1/2 hour working sessions in the program. However, these two observation sessions were scheduled during key points in the project development stage and during the Presidential election, which the teens discussed in great depth.

Despite the adjustments to my research plan, my ongoing goal during my time with Teen Zine was to uncover and describe the actions and perspectives of the participants and their instructors on their work on the digital magazine and the prototype of a model green bus and the opportunities made possible by the activities and discussions. My observations, interviews and collection of student work were all oriented around this goal. See Table 3.2 for a detailed list of the dates for each fieldwork session.

Table 3.2: ***Data Collection***

Phase	**Dates**	**Description**
I	**March 2012**	Initial meeting with executive directors of both chapters.
	April 2012	Initial meeting with program directors of both chapters.
	April – July 2012	Administered Quantitative Survey
II	**August 2012**	Second interviews with Program Directors of both chapters.
	October 2012	Interview Teen Innovate instructor
		Observe Teen Innovate (session 1)
		Observe Teen Innovate (session 2)
		Interview Teen Zine instructor
		Observe Teen Zine (sessions 1, 2)
	November 2012	Observe Teen Zine (sessions 3, 4)
	December 2012	Second interview Teen Zine instructor 2
		Observe Teen Zine (sessions 5, 6)
	January 2013	Observe Teen Zine (session 7)
	February 2013	Observe Teen Zine (session 8)
	March 2013	Focus group with Teen Zine participants

Data Sources

The following sections details the data collected from both programs over a five-month period.

Table 3.3: ***Data Sources***

Data Source	Description
Staff Interviews	Interviews with chapter Executive Director and Program Director. Conducted 3 interviews with Teen Zine Instructor and 1 interview with Teen Innovate instructor.
Participant Observations/ Audio Transcriptions	Observations of the programs were conducted over 4 months. During the **Teen Zine** program I observed eight, 2-hour sessions. Observations of the two 1/2hour Teen Innovate took place over 2 consecutive sessions. I was not able to gain permission to attend additional meetings.
Focus Group	A 20 minute Teen Zine focus group
Artifacts	Artifacts were collected over four months, for Teen Zine, and Teen Innovate

Observations and Interviews

Intermittently, over five months, I conducted informal interviews with the Girls Inc. chapter Executive Directors, Program Directors, and Instructors. Staff interviews took place over the duration of five months, before my observations, mid-way through the programs and at the end. Interviews with the local chapter Executive Directors and Program Directors were focused on the overall organizational mission and local chapter goals. The questions were developed according to my field notes from program observations.

Observations were not consecutive but were conducted according to the program objectives. Even though Teen Zine was scheduled to meet every week, there were weeks when the group was working on other chapter projects that did not include the writing for the online magazine. I did not observe on those days.

Focus Group

One 20-minute focus group was conducted with the 8 Teen Zine participants and the instructor. Questions were based on my field notes and quantitative date results. The focus group questions were based on findings from the group observations, interviews with staff and my audiotape transcriptions. See Table 3.4 for a list of focus group questions.

Table 3.4: ***Focus Group Questions***

1.	Why did you join the Zine group?
2.	Have you ever written for an online publication? Using what type of medium? Tumblr, Facebook, etc.
3.	What do you or don't you like about writing for an online magazine?
4.	Do you like that it is online?
5.	Would you like the opportunity to learn more about how to create with different types of technologies? If so, what types? Photo, video, writing, etc.?
6.	Would you like to learn about developing an audience?
7.	What does Media Literacy mean to you?
8.	How do you feel about how girls are portrayed in the media?
9.	Many of you talked about community involvement. What does that mean to you?
10.	Can you imagine yourself being involved in community development?

Artifacts

The artifacts collected over 4 months, included; Teen Zine *OutLoud* articles, photos and drawings located at http://alamedaoutloud.tumblr.com/. Web-based resources used for curriculum instruction included; YO! Youth Outlook, and photos by Dorthea Lange, Sebastian Salgado, National Geographic and artwork by local bay area artist Margaret Kilgallen. Teen Innovate artifacts included photographs of workspace, small group work, and models of the green bus. A description of the artifacts from each program and their significance is discussed in the following chapter.

Data Analysis Procedures

I transcribed all ten hours of the audio information that I had recorded and collected. In my transcriptions and field notes, I included descriptions of behavior and movement where appropriate, but concentrated mainly on the participant dialogue.

Coding and Thematic Organization

After I gathered my text transcriptions, my digitized audiotapes and my images and scans of participants' work, I entered them into a qualitative web based data analysis computer program called Dedoose. Eli Lieber, Ph.D. a research psychologist and Thomas S. Weisner, Ph.D. a professor of anthropology (UCLA) designed Dedoose for use with various computer platforms. Dedoose runs on an open source data visualization framework designed for analysis of textual and graphic data.

The program allowed me to upload text files, images and audio files and assign codes based on my observations of the data. I developed coding sets initially based on Vygotsky's theory of a "complex mediated act", which is expressed as the triad of subject, object and mediating artifact and Engstrom's Activity System which expanded the triad to include three mediating factors, rules, community and division of labor (Engstrom, 1978, 1999).

As I went through all of my data, I coded using a combination of an open coding approach, letting the codes emerge from the data, in addition to focused coding, generated from Vygotsky and Engstrom's work. I developed my list of codes and source material linked to each code, and often identified multiple codes to data sources. I asked myself how each item fit into questions I had of each learning environment and the social and individual practices that make up these learning environments.

In the dynamic exchange between the instructors and the participants, for example, I had noticed that many of the participants in both Girls Inc. programs had referred to stories of a personal nature: a brother who had recently been released from prison, or having to get a restraining order against another student, or watching a friend hit a man on the bus that was being offensive. These stories were shared in the context of discussing essays for the magazine or how to address issues in the community that they want changed, such as a local bus that is safe, clean and energy efficient. After I assigned codes to all of my data sources, I could sort and view the data by code. Therefore, I had the ability to view and review all of the examples in which students had shared a personal story that generated a group discussion or examples of activities that illustrated collective intelligence, the ability to pool knowledge and compare notes with others toward a common goal, as defined by Jenkins (2006), for example.

After I developed my list of codes and source material linked to each code, I grouped codes by thematic organization (all those dealing with cultural identity, or cultural history, for example) and produced an outline for the following chapter. I created a narrative skeleton for the sub-headings for the chapter, and wrote from the skeleton, consulting my list of coded source material for examples in each section.

The following chapter will detail the different learning environments in which these informal dynamic programs were constructed. While discussing the different informal learning environments, I will discuss the participant's social and individual practices, the kinds of activities and tools that support the development of twenty-first century skills, and the social and cultural skills sets that were demonstrated in these programs. Lastly, my discussion will culminate with a description of the two projects – one media based and one non-media based – that were done and the intersections within these projects of working collaboratively toward a larger activity —– with a shared objective.

CHAPTER 4

Quantitative Results

This study assesses how a sample of youth engage with different forms of media, and how they perceive their new media practices while also informing us of conditions of access at home, school and in community settings and how those map with the twelve new media literacy skills (NMLs) developed by Jenkins (2006). Five statements for each NML are included in the survey, for a total of sixty questions. These statements address both technology-related and non-technology-related behaviors, in accordance with my view that NML skills are social and cultural competencies that stretch beyond media expertise or technological capability.

The sample (N=108) consisted of volunteers who completed a comprehensive online survey that measured their NML skills, media exposure, digital participation, and civic engagement. A series of univariate and bivariate analyses of variance were run on all variables, which include the NMLs.

Description of Sample

The first section of the survey sought to capture information about the respondent's demographics to illustrate a portrait of the respondents and their access to technology. A univariate analysis was run first on all survey items. This included examination of frequencies, percentages and means and standard deviations, as appropriate to the level of measurement of each item. Of the 108 respondents, (see Table A), 100% were female, as we only administered the survey to an all girls after school organization. Of the 108 female respondents, 64.2% (n=70) were age 13 and 27.5% (n=30) were 14, 6.4% (n=7) reported being 15 and 1% (n=1) was 16 and 1% (n=1) was 17. The majority of the girls that participated were from the larger Girls Inc. chapter, at 76.9% (n=83) and 23.1% (n=25) from the smaller chapter. See Appendix D for tables of demographic information of the participants.

Media Exposure: Digital Participation and Access of Respondents

The second section of the survey sought to quantify respondents' level of digital participation and engagement with online platforms. The following tables illustrate the descriptive analyses on all digital participation and access survey items that are categorical for the digital participation survey section; how and where they connect to the internet; home, school, library and what types of devices they use; shared computer, iPad, phone and the hours spent per week engaged blogging, Facebook, YouTube, gaming and social networking sites. Lastly, how they engage creatively with multi media, if they know the term 'media literacy', and if they can define the term, media literacy. According to my hypothesis, I expected to see a significant difference between high and

low digital participation levels with highly engaged users showing higher NML skills then less avid digital participants.

Digital participation, (see Table A), revealed that among the respondents, the largest percentage had their own computer and Internet at home and were able to connect to the Internet at home. Over half or 51.9% (n=55) had their own computer, 38.7% (n=41) had a shared computer and 9.4% (n=10) reported having no computer at home. While 86.0% (n=92) reported having an Internet connection at home, 14.0% (n=14) reported having no Internet at home. The respondents reported computers at home being the most common device used to connect to the Internet at 82.4% (n=89). The remaining respondents reported using a computer at school at 36.1% (n=36), a computer at a school library or media lab at 40.7% (n=44), a computer at a library outside of school at 24.1% (n=26), a cell phone to connect to the Internet at 54.6% (n=59), and an iPad at 31.5% (n=34), and the least was a game system at home at 23.1% (n=25).

Table A
Percentage Frequency Table
Media Exposure: Access to Technology (N=108)

Access to Technology	Frequency	N
Computer at home		
Yes, I have my own computer	51.9%	55
Yes, but it is a shared computer	38.7%	41
No	9.4%	10
Total	100%	106
Internet at home		
Yes, I have internet at home	86.0%	92
No	14.0%	15
Total	100%	107
Internet on cell phone		
Yes	61.3%	65
No	38.7%	41
Total	100%	106
Devices used to connect to the internet:		
Computer at home	82.4%	89
Computer at school in a classroom	36.1%	36
Computer at school – in the library or media lab	40.7%	44
Computer at a library or outside of school	24.1%	26
Cell phone	54.6%	59
iPad	31.5%	34
A game system at home	23.1%	25
Total		108
Devices used to connect to the internet:		
Computer at home	67.4%	89

Access to Technology	Frequency	N
Not checked	32.6%	43
Total	100%	132
Devices used to connect to the internet:		
Computer at school – in a classroom	29.5%	39
Not checked	70.5%	93
Total	100%	132
Devices used to connect to the internet:		
Computer at school in library or media lab	33%	44
Not checked	66.7%	88
Total	100%	132
Devices used to connect to the internet:		
Computer at a library outside of school	19.7%	26
Not checked	80.3%	106
Total	100%	132
Devices used to connect to the internet:		
Cell phone	44.7%	59
Not checked	55.3%	73
Total	100%	132
Devices used to connect to the internet:		
iPad	25.8%	34
Not checked	74.2%	98
Total	100%	132
Devices used to connect to the internet:		
A game system at home	18.9%	25
Not checked	81.1%	107
Total	100%	132

Media Exposure: Old and New Media Formats

In this section I looked at respondents' cumulative media exposure, (see Table B). This included time spent with all forms of media including Internet, television, print media and videogames. As for hours spent on the Internet, 92.3% of respondents reported 1-10 hours per week spent on the Internet for school, and 44.8% reported 1-10 hours per week spent on the Internet for free time. Under the same category of 1-10 hours spent per week, respondents reported 46.2% of respondents reported watching TV, 55.2% read books and magazines, and 63.8% played online games.

Table B:
Frequency of Hours spent with Old and New Media Formats (N=108)

Hours spent on the Internet	1-10 hrs.	10-20 hrs.	20-30 hrs.	30-40 hrs.	40+ hrs.
Hours spent on the Internet for school	92.3%	4.8%	1.0%	1.9%	
Hours spent on the Internet free time	44.8%	21.9%	17.1%	4.9%	11.4%
Hours spent watching TV	46.2%	21.2%	11.5%	8.7%	12.5%
Hours spent reading books, magazines, newspapers	55.2%	23.8%	7.6%	7.6%	5.7%
Hours spent playing games (online, on your cell phone)	63.8%	13.3%	11.4%	3.8%	7.6%

Media Exposure: Digital Participation

Next, respondents' reported on their exposure to specific media, (see Table C). Under this category of digital participation, where respondents reported using specific Web 2.0 platforms (e.g. Facebook, YouTube, blogging, etc.), the highest reported use was YouTube at above 5 hours per week, at 42.5% (n=45), Facebook at 32.1% (n=34), online groups (Yahoo, Google and others) at 20.6% (n=22) and games by myself at 43.9% (n=47).

Table C:
Frequency of Digital Participation (N=108)

Hours spent on….	0 hrs.	1-5 hrs.	5-10 hrs.	10-15 hrs.	15-20 hrs.	20+ hrs.
Facebook	24.5%	32.1%	11.3%	7.5%	2.8%	21.7%
Twitter	80.2%	13.2%	1.9%	.9%	0	3.8%
Bebo	100%					

Hours spent on….	0 hrs.	1-5 hrs.	5-10 hrs.	10-15 hrs.	15-20 hrs.	20+ hrs.
Friendster	100%					
How much time spent on MySpace	92.5%	2.8%	2.8%	.9%	.9%	
How much time spent on YouTube (or similar video site)	8.5%	42.5%	17.9%	11.3%	6.6%	13.2%
How much time spent on Online groups (Yahoo, Google, other)	56.1%	20.6%	10.3%	3.7%	2.8%	6.5%
How much time spent on Message Boards	87.7%	8.5%	1.9%			
How much time spent on Games by myself (online, cell phone or play station)	29.0%	43.9%	10.3%	6.5%	5.6%	4.7%
How much time spent on playing games with others	66.0%	21.7%	2.8%	.9%	4.7%	3.8%
How much time spent on Blogging (Blogspot, wordpress, blogger)	83.0%	10.4%	4.7%	.9%	.9%	
How much time spent on Podcasting	92.5%	3.8%	1.9%	.9%	.9%	
How much time spent on other (Tumblr)	94.7%	1.5%	1.5%	.8%	.8%	.8%

Knowledge of Media Literacy Term

As the term 'media literacy' continues to be defined by the education community, (see Table D). The survey sought to directly inquire about the respondents' knowledge of the term of which 80.6% (n=87) reported that they had not heard the term prior to taking this survey and 19.4% (n=21) reported that they had heard the term prior to taking this survey.

Table D:
Familiarity with Term "Media Literacy" (N=108)

Have heard of the term Media Literacy?	Frequency	N
Yes	19.4%	21
No	80.6%	87
Total	100%	108

Next, the survey asked that if they had heard the term, media literacy prior to taking this survey, if they could define the term in their own words. Qualitative responses were grouped into thematic categories and are presented in Table E.

Table E:
In your own words, how would you define media literacy? (N=24)

Internal – tool – control (ways to use media)	External – source - no control (ways media sources operates)	Unable to define term in their own words
Helps us spread media and evaluate messages over media.	Media literacy is the way what we call the action of how the media responds to things.	I don't know. (13 responses)
I would define it as using technology for a new type of education.	How someone would talk about the media and commonly used terms and phrases.	
ML: Showing pics, describing things.	Understanding what the media is trying to say; underlying insinuations/implications of media	
Understanding and using all different forms of media - online news, TV, movies, games, facebook, tumbler, iphone	Reading on the internet about popular topics.	
The literacy of media	The literacy of media	
The teaching of tech for media uses.		

In an effort to reveal what the participants are doing with technology they were asked; how often do you create projects that use video, audio, music or photographs outside of school, in your free time? Table F shows that 19.6% (n=21) reported creating

projects often, 28.0% (n=30) reported sometimes, 31.8% (n=34) reported rarely creating projects that use various media tools, and 20.6% (n=22) reported never.

Table F:
Using Multimedia to Create (N=108)

Create projects that use video, audio, music or photographs outside of school, in your free time	**Often**	**Sometimes**	**Rarely**	**Never**	**Total**
	19.6%	28.0%	31.8%	20.6%	100%

Media Literacy Groups and New Media Literacy Skill Scores

Although all of the survey items collectively attempt to measure new media literacy levels, and the overall reliability of the scale was high (Cronbach's alpha =. 937), I was interested in identifying the specific skill subcomponents that make up this concept and to explore the relationship between these NMLs and patterns of media exposure and digital participation. Calculating the aggregate mean of their constituent items formed NML subscale composites. As a result of the factor analysis conducted by the survey design team, I utilized the computed 12 variables, which represented the specific factors that emerged as a result of the factor analysis: negotiation, networking, judgment, play, multitasking, appropriation, trans-media navigation, visualization, distributed cognition and performance and community involvement.

Media Exposure with Groups

In order to see the variations in NML skills across different groups, I ran a bivariate analysis across relevant groups related to digital participation. The condition of belonging to one of these two groups (low or high media use or heavy digital participation) was used as the independent variable, while the 12 NMLS's were considered as dependent variables.

Media literacy was operationalized four different ways based on four survey items: the number of hours that girls used the **internet in their free time** each week (1-10 hours was recoded as the LOW group and 10-20 hours, 20-30 hours, 30-40 hours and 40+ hours were grouped in the HIGH group); weekly hours that girls used **Facebook** (0 to 5 hours was coded as LOW and 5 to 20+ hours was coded as HIGH); weekly hours that girls used **YouTube** (0 to 5 hours was coded as LOW and 5 to 20+ hours was coded as HIGH); and number of hours on **online groups** per week (0 hours was coded as LOW and 1 to 20+ hours was coded as HIGH).

Cut-points for media literacy for the above four variables were computed based on combining conceptually logical categories as close to the median as possible so that

half the sample was in each group. The means and standard deviation of both groups (low and high) for each subsequent analysis can be found in Table G. This presents preliminary evidence that higher media literacy score was associated with higher New Media Literacy skills.

Group Correlations

Pearson correlations among the 12 New Media Literacy Skills were run to examine associations among the 12 skills, (see Table K). As expected, the 12 skills were highly correlated with one another at the p<. 01 level. The exceptions were the NML skill Play not showing significantly positive correlations to performance and trans-media navigation.

Table G:
NML Skill Pearson Correlation (N=108)

NML Skill	Play	Sim	Perf	App	Dist-Cog	Multi-tasking	Col Intel	Judg-ment	Trans-media	Net	Neg	Vis
Play	1											
Simulation	.360**	1										
Performance	.096	.351**	1									
Appropriation	.347**	.493**	.444**	1								
Distributed Cognition	.337**	.509**	.291**	.346**	1							
Multi-tasking	.316**	.334**	.194*	.385**	.368**	1						
Collective Intelligence	.342**	.425**	.235*	.449**	.499**	.357**	1					
Judgment	.334**	.437**	.243*	.375**	.614**	.488**	.587**	1				
Transmedia Navigation	.220*	.468**	.311**	.479**	.519**	.327**	.440**	.443**	1			
Networking	.340**	.317**	.300**	.629**	.251*	.302**	.378**	.273**	.439**	1		
Negotiation	.344**	.357**	.270**	.461**	.488**	.323**	.625**	.492**	.490**	.564**	1	
Visualization	.371**	.538**	.218*	.474**	.619**	.466**	.442**	.583**	.445**	.510**	.515**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Due to the categorical nature of the 4 Media Literacy grouped variables, Spearman correlations (rather than Pearson correlations) were run between the 4 Media Literacy sub-groups and the 12 New Media Literacy scores, (see Table H). Several significant associations were found.

For online groups a total of 7 NML skills were significantly positively correlated with higher online group use at the p< .05 level (simulation, appropriation, collective intelligence, judgment, transmedia navigation, networking and negotiation).

Table H:
Group Correlation Summary Tables (N=108)

Spearman Correlation for Online Groups (Yahoo, Google, other online communities)

NML Skill	r	r^2	p	N
Play	.082	.007	. 399	107
Simulation	.220*	.05	. 024	106
Performance	.183	.033	. 059	107
Appropriation	.317**	.100	. 001	106
Distributed Cognition	.121	.015	. 221	104
Multi-tasking	.168	.03	.087	105
Collective Intelligence	.282**	.08	.004	105
Judgment	.242*	.06	.014	102
Transmedia Navigation	.234*	.054	.016	106
Networking	.279**	.08	.005	101
Negotiation	.216*	.05	.025	107
Visualization	.166	.03	.094	103

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

For low and high YouTube use a total of 3 NML skills were significantly positively correlated with higher use at the p< .01 level (performance, appropriation, and networking).

Spearman Correlation for YouTube

NML Skill	r	r^2	p	N
Play	.161	.025	.099	106
Simulation	.121	.015	.220	105
Performance	.286**	.081	.003	106
Appropriation	.276**	.08	.004	105
Distributed Cognition	.026	.0006	.792	103
Multi-tasking	.173	.03	.078	104
Collective Intelligence	.124	.015	.210	104
Judgment	.140	.02	.164	101
Transmedia Navigation	.174	.03	.076	105

Networking	.292**	.085	.003	99
Negotiation	.126	.016	.199	106
Visualization	.118	.014	.239	102

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

For low and high Facebook use a total of 2 NML skills were significantly positively correlated with higher online group use at the p< .01 level (performance and networking).

Spearman Correlation for Facebook

NML Skill	r	r^2	p	N
Play	-.020	.000	. 838	106
Simulation	-.108	.012	. 272	105
Performance	.256**	.065	.008	106
Appropriation	.141	.02	.153	105
Distributed Cognition	-.037	.001	.711	103
Multi-tasking	.116	.013	.242	104
Collective Intelligence	-.016	.000	.869	104
Judgment	-.038	.001	.702	102
Transmedia Navigation	.086	.007	.385	105
Networking	.274**	.075	.006	99
Negotiation	.069	.004	.484	106
Visualization	.035	.001	.727	102

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

For high and low Internet use in Free Time, NML skills showed no correlation with low or high use of the Internet in free time at the p<. 05 level.

Spearman Correlation for Internet in Free Time (outside of school)

NML Skill	r	r^2	p	N
Play	.147	.022	.135	105
Simulation	-.058	.003	.561	104
Performance	.096	.009	.331	105
Appropriation	.066	.004	.504	104
Distributed Cognition	-.051	.003	.609	102
Multi-tasking	.053	.003	.592	103
Collective Intelligence	-.064	.004	.520	103
Judgment	-.029	.000	.774	101

Transmedia Navigation	.084	.007	.399	104
Networking	.124	.015	.220	99
Negotiation	-.047	.002	.631	105
Visualization	-.075	.005	.452	102

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

New Media Literacy Group Comparisons
student t-tests

Independent t-tests were used to examine differences in mean scores across the 12 New Media Literacy (NML) scores by low or high media literacy, (see Table I). Student t-tests were run separately for each of the 4 Media Literacy subgroups and the 12 NML scores. Significance was set at $p < .05$. Bonferroni's correction for family-wise error was used for each of the separate runs, resulting in a significance level of .05/10 tests or an adjusted significance level of $p < .004$.

The independent t-test examined the difference between high and low NML scores and low and high online group use. Girls with more online use scored higher, on average, on 8 NML skills; simulation and performance, appropriations, collective intelligence, trans-media navigation, networking, negation skills and community involvement than girls with no online use, at $p < .05$. Using Bonferroni's correction collective intelligence and appropriation remained statistically significant at $p <. 004$.

Table I:
New Media Literacy Group Detailed Comparisons
student t-test (N=108)

Online Groups hours used per week

NML skill	Hours per week	N	Mean	Std. Dev.	t	p
Play	No online group use	60	18.32	3.92	-1.48	.140
	1 hrs-20+ hours online use	47	19.38	3.33		
Simulation	No online group use	59	18.66	3.11	-2.07	.041
	1 hrs-20+ hours online use	47	19.96	3.31		
Performance	No online group use	60	16.40	3.077	-2.05	.042
	1 hrs-20+ hours online use	46	17.85	4.21		
Appropriation	No online group use	60	16.57	2.59	-3.37	.001
	1 hrs-20+ hours online use	46	18.63	3.48		
Distributed	No online group use	60	19.28	2.90	-1.50	.135

NML skill	Hours per week	N	Mean	Std. Dev.	t	p
Cognition	1 hrs-20+ hours online use	44	20.23	3.48		
Multi-tasking	No online group use	58	18.88	3.77	-.65	.515
	1 hrs-20+ hours online use	47	19.38	4.11		
Collective Intelligence	No online group use	58	18.74	3.15	-3.34	.001
	1 hrs-20+ hours online use	47	20.77	3.00		
Judgment	No online group use	57	19.11	2.97	-1.77	.080
	1 hrs-20+ hours online use	45	20.18	3.12		
Transmedia Navigation	No online group use	60	18.30	2.67	-2.55	.012
	1 hrs-20+ hours online use	46	19.83	3.30		
Networking	No online group use	57	16.33	3.84	-2.29	.024
	1 hrs-20+ hours online use	44	18.23	4.46		
Negotiation	No online group use	60	18.28	3.74	-2.33	.021
	1 hrs-20+ hours online use	47	19.94	3.48		
Visualization	No online group use	57	19.54	3.42	-1.27	.206
	1 hrs-20+ hours online use	46	20.35	2.87		
Civic Engagement	No online group use	60	18.37	3.57	-2.35	.021
	1 hrs-20+ hours online use	46	19.98	3.40		

Girls who reported 5-20+ hours per week time spent on YouTube scored higher, on average on 3 NML skills (performance, appropriation, networking) than girls with less than 5 hours, based on a student t-test at p<. 05. Using Bonferroni's correction none of these 3 NML skills remain statistically significant at p<. 004.

YouTube 5-20 + hours of use per week

NML skill	Hours per week	N	Mean	Std. Dev.	t	p
Play	0 to 5 hrs. YouTube use	54	18.33	4.11	-1.36	.174
	5-20+ hours YouTube use	52	19.31	3.17		
Simulation	0 to 5 hrs. YouTube use	54	19.15	3.09	-.37	.706
	5-20+ hours YouTube use	51	19.39	3.52		
Performance	0 to 5 hrs. YouTube use	54	16.04	3.13	-2.96	.004
	5-20+ hours YouTube use	52	18.04	3.81		
Appropriation	0 to 5 hrs. YouTube use	54	16.83	3.02	-2.17	.032

NML skill	Hours per week	N	Mean	Std. Dev.	t	p
	5-20+ hours YouTube use	51	18.16	3.22		
Distribution Cognition	0 to 5 hrs. YouTube use	53	19.75	3.09	-.21	.832
	5-20+ hours YouTube use	50	19.62	3.33		
Multi-tasking	0 to 5 hrs. YouTube use	52	18.83	3.80	-.95	.343
	5-20+ hours YouTube use	52	19.56	4.02		
Collective Intelligence	0 to 5 hrs. YouTube use	52	19.60	2.88	-00	1.000
	5-20+ hours YouTube use	52	19.60	3.69		
Judgment	0 to 5 hrs. YouTube use	52	19.17	2.89	-1.26	.212
	5-20+ hours YouTube use	49	19.94	3.23		
Transmedia Navigation	0 to 5 hrs. YouTube use	54	18.59	2.76	-1.50	.138
	5-20+ hours YouTube use	51	19.47	3.25		
Networking	0 to 5 hrs. YouTube use	52	16.10	4.20	-2.74	.007
	5-20+ hours YouTube use	47	18.36	4.01		
Negotiation	0 to 5 hrs. YouTube use	54	18.78	3.53	-.972	.550
	5-20+ hours YouTube use	52	19.21	3.91		
Visualization	0 to 5 hrs. YouTube use	51	19.78	3.27	-.562	.575
	5-20+ hours YouTube use	51	20.14	3.07		
Civic Engagement	0 to 5 hrs. YouTube use	54	19.35	3.52	.949	.345
	5-20+ hours YouTube use	52	18.69	3.63		

Girls who reported 5-20+ hours per week on Facebook scored higher, on average on 2 NML skills (performance and networking) than girls with less than 5 hours reported, based on a student t-test p<. 05. Using Bonferroni's correction none of these 2 NML skills remain statistically significant at p<. 004.

Facebook 5-20+ hours used per week

NML skill	Hours per week	N	Mean	Std. Dev.	t	p
Play	0 to 5 hrs. Facebook use	60	18.78	4.16	-.08	.93 0
	5-20+ hours Facebook use	46	18.85	3.08		
Simulation	0 to 5 hrs. Facebook use	60	19.58	3.34	.97	.33 3
	5-20+ hours Facebook use	45	18.96	3.18		
Performance	0 to 5 hrs. Facebook use	60	16.35	3.318	-2.17	.03

NML skill	Hours per week	N	Mean	Std. Dev.	t	p
	5-20+ hours Facebook use	46	17.89	3.99		2
Appropriation	0 to 5 hrs. Facebook use	59	17.19	3.46	-1.09	.27
	5-20+ hours Facebook use	46	17.87	2.75		6
Distribution Cognition	0 to 5 hrs. Facebook use	60	19.90	3.02	.56	.57
	5-20+ hours Facebook use	43	19.56	3.11		7
Multi-tasking	0 to 5 hrs. Facebook use	58	18.79	4.16	-1.19	.23
	5-20+ hours Facebook use	46	19.70	3.42		8
Collective Intelligence	0 to 5 hrs. Facebook use	58	19.78	3.26	.46	.64
	5-20+ hours Facebook use	46	19.48	3.30		7
Judgment	0 to 5 hrs. Facebook use	56	19.61	2.90	.14	.89
	5-20+ hours Facebook use	46	19.52	3.32		0
Transmedia Navigation	0 to 5 hrs. Facebook use	60	18.95	2.92	-.05	.96
	5-20+ hours Facebook use	45	18.98	3.25		3
Networking	0 to 5 hrs. Facebook use	55	16.38	4.34	-1.99	.04
	5-20+ hours Facebook use	44	18.07	3.97		9
Negotiation	0 to 5 hrs. Facebook use	60	18.90	4.06	-.40	.68
	5-20+ hours Facebook use	46	19.20	3.27		7
Visualization	0 to 5 hrs. Facebook use	57	19.89	3.390	-.13	.89
	5-20+ hours Facebook use	45	19.98	2.98		7
Civic Engagement	0 to 5 hrs. Facebook use	60	19.40	3.450	1.19	.23
	5-20+ hours Facebook use	45	18.56	3.76		5

Girls who reported using the internet in their free time 1-10 hours per week showed no statistically significant mean differences on the NML skills at the $p < .05$ than girls who reported using the internet in their free time 10-40+ hours.

Using the Internet in Free Time

NML skill	Hours per week	N	Mean	Std. Dev.	t	p
Play	1-10 hrs. Internet ft use	47	18.34	4.22	-1.35	.181
	10--40+ hours Internet ft use	58	19.31	3.15		
Simulation	1-10 hrs. Internet ft use	47	19.09	3.56	-.69	.492
	10--40+ hours Internet ft	57	19.53	2.97		

NML skill	Hours per week	N	Mean	Std. Dev.	t	p
	use					
Performance	1-10 hrs. Internet ft use	47	17.15	3.90	.16	.875
	10--40+ hours Internet ft use	58	17.03	3.52		
Appropriation	1-10 hrs. Internet ft use	47	17.55	3.45	.13	.900
	10--40+ hours Internet ft use	57	17.47	2.97		
Distribution Cognition	1-10 hrs. Internet ft use	46	19.96	3.09	.43	.668
	10--40+ hours Internet ft use	56	19.70	2.99		
Multi-tasking	1-10 hrs. Internet ft use	45	18.96	4.02	-.806	.422
	10--40+ hours Internet ft use	58	19.57	3.68		
Collective Intelligence	1-10 hrs. Internet ft use	45	19.98	3.39	.716	.475
	10--40+ hours Internet ft use	58	19.52	3.11		
Judgment	1-10 hrs. Internet ft use	44	19.55	3.03	-.168	.867
	10--40+ hours Internet ft use	57	19.65	3.12		
Transmedia Navigation	1-10 hrs. Internet ft use	46	18.57	2.96	-1.249	.215
	10--40+ hours Internet ft use	58	19.31	3.07		
Networking	1-10 hrs. Internet ft use	45	16.80	4.32	-.752	.454
	10--40+ hours Internet ft use	54	17.44	4.18		
Negotiation	1-10 hrs. Internet ft use	47	19.62	3.60	1.165	.247
	10--40+ hours Internet ft use	58	18.83	3.33		
Visualization	1-10 hrs. Internet ft use	45	20.00	3.25	.333	.740
	10--40+ hours Internet ft use	57	19.79	3.11		
Civic Engagement	1-10 hrs. Internet ft use	47	19.74	3.33	1.564	.121
	10--40+ hours Internet ft use	57	18.67	3.63		

A summary of student t-tests focuses on the significant differences correlations using Bonferonni's correction, (see Table I). With the adjusted p-value of .004, only the two NML skills were significantly different based on low and high online group use and one NML skill was significantly different across the low and high YouTube groups. The most conservative approach is to use Bonferonni's correction to account for the high number of t-tests performed. It is informative to also look at the skills that trended toward significance, or had p-values less than .05. For low and high online group use, this included simulation (.041), performance (.042), transmedia navigation (.012), networking (.024), negotiation (.021), and civic engagement (.021). For low and high YouTube use,

this included, appropriation (.032), and networking (.007). For high and low Facebook use, this included, performance (.032) and networking (.049).

Table I:
Summary of student t-tests (N=108)

Comparison of t-test Results

NML skill	Online Group	YouTube	Facebook	Internet Free Time
Play	.140	.174	.930	.181
Simulation	.041	.706	.333	.492
Performance	.042	.004*	.032	.875
Appropriation	.001*	.032	.276	.900
Distributed Cognition	.135	.832	.577	.668
Multi-tasking	.515	.343	.238	.422
Collective Intelligence	.001*	1.00	.647	.475
Judgment	.080	.212	.890	.867
Transmedia Navigation	.012	.138	.963	.215
Networking	.024	.007	.049	.454
Negotiation	.021	.550	.687	.247
Visualization	.206	.575	.897	.740
Civic Engagement	.021	.345	.235	.121

*** Significant using Bonferonni's correction (.05 tests = .004)**

Summary

This study was designed to explore the connections between individual's new media literacy levels (NMLs) as proposed by Jenkins (2006) and their degree of media exposure, digital participation and civic engagement. A univariate analyses on all demographic, digital participation and survey items including frequencies, percentages, means and standard deviations were run on all survey items. The analyses revealed that of the respondents', the largest group at 64.2% was age 13 at the time the survey was taken and 77.8% were a part of the program Teen's Innovate. Among the survey participants, 59.3% reported English as the primary language spoken at home.

Next, I explored the participant's media exposure, digital participation and civic engagement. The bivariate differences between the *high and low* media exposure groups were particularly pronounced in the areas of internet in their free time, Facebook, YouTube and online groups.

Through correlation analysis, I explored the relationship between NML's and exposure to specific media. Media literacy was operationalized four different ways based on four survey items; the number of hours that girls used the **internet in their free time** each week (1-10 hours was recoded as the LOW group and 10-20 hours, 20-30 hours, 30-40 hours and 40+ hours were grouped in the HIGH group) and showed no correlation with low and high use of the Internet in free time at the p<. 05 level. Weekly hours that girls used **Facebook** (0 to 5 hours was coded as LOW and 5 to 20+ hours was coded as HIGH) and revealed 2 NML skills (performance and networking) were positively correlated with higher online use at the p<. 01 level. Next, weekly hours that girls used **YouTube** (0 to 5 hours was coded as LOW and 5 to 20+ hours was coded as HIGH) and revealed use of a total 3 NML skills (performance, appropriation and networking) positively correlated with higher use at the p< .01 level. Lastly, the number of hours girls reported being in on **online groups** per week (0 hours was coded as LOW and 1 to 20+ hours was coded as HIGH) and revealed a total of 7 NML skills (simulation, appropriation, collective intelligence, judgment, trans-media navigation, networking and negotiation) were significantly positively correlated with higher online group use at the p< .05 level.

Pearson correlations among the 12 NMLs were run to examine associations among the 12 skills. As expected, the 12 skills were highly correlated with one another. To determine if there were any differences in mean scores across the 12 NML scores by low or high media literacy, student t-tests were run separately for the four media literacy subgroups. Some differences were found on selected NMLs based on higher online group use, higher use of YouTube, and higher use of Facebook, but not higher use of the Internet in their free time.

In conclusion, out of the 12 NML skills that Jenkins identified as the competencies of media literacy, I was able to map, as demonstrated in this study, and explore social and cultural competencies based on participant's media exposure, digital participation and engagement with various online platforms.

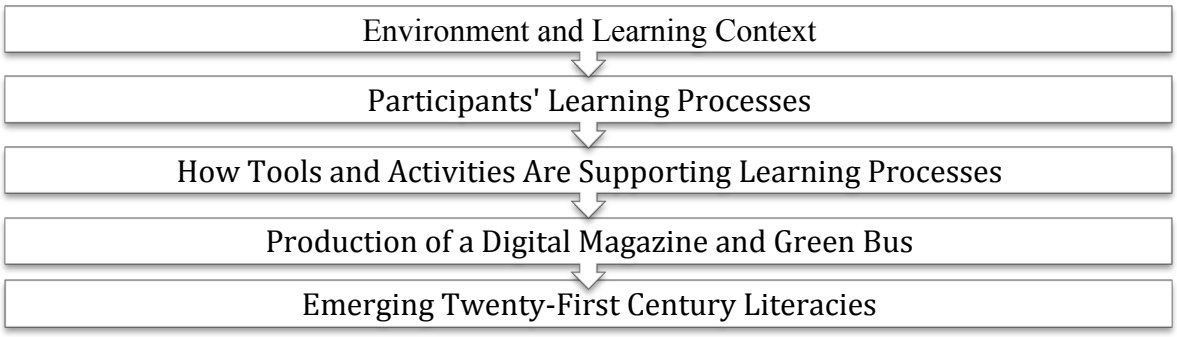
CHAPTER 4

Qualitative Results

This chapter explores two Girls Inc. after school programs located in the urban area of the San Francisco Bay Area. The findings focus on how and what girls are learning in an all-girl after school writing and leadership program and why they joined — their interests and their sense of identity. It describes how the learning environments support the activities and the mentoring of the instructors while developing the social and cultural skill sets of the participants toward the development of twenty-first century skills. My research was guided by the following questions:

1. How and what twenty-first century skills are youth (girls) developing in an after school writing and leadership program?
2. How do digital media literacy activities promote exposure to diverse viewpoints?
3. How does digital media influence young people's communications and sociability, online and offline?

The results are organized into the following themes developed from these theories and questions: Environment and Learning Context; Participants' Learning Processes; How Tools and Activities Are Supporting Learning Processes; Production of a Digital Magazine and Green Bus; and Emerging Twenty-First Century Literacies. By describing how the participants demonstrated a deep awareness of the problems and possibilities of navigating the cultural milieu of new social contexts, exploring unknown landscapes and experimenting with entirely new identities, we are invited to focus on a segment of urban youth who are thought to fall into the "participatory gap." The intersection of these — the learning environment, the tools, and the activities and participation of the girls — created an opportunity to consider how these after school programs provided access to the opportunities, experiences, skills, and knowledge that prepared youth for school and work in the twenty-first century.



Environment and Learning Context

> *You are going to identify and conceptualize needs for your community, specifically yours, so when you are building this bus I want you to think about where you live and think about how the people in your neighborhood are going to use this vehicle that you are designing.*
>
> -Teen Innovate Instruction, 10/30/12

This section discusses four key themes that emerged from the data related to the environment and learning context in which the Girls Inc. programs took place: learning environment; expanding network of local and global community; the role of community and group participation; and the relationship of personal experience in a learning context. As I have established, these Girls Inc. programs both operated with the goal of producing a collaborative project, an online digital magazine and a prototype model of an energy efficient green bus, respectively. In the quote above, the Teen Innovate instructor asked the participants how they would develop a vehicle that resolves transportation issues in their local community. This quote illustrates how Girls Inc. emphasized the role of community by creating a strong community presence within the programs while exploring and engaging with the larger community outside the organization. In this example, the Innovate participants were asked to design a prototype of an energy efficient bus while addressing specific concerns and problems of local transportation in their urban communities. While addressing these problems, the participants learned about their local communities and practical ways to directly enact positive change.

By integrating both the social and practical elements in the curriculum, Girls Inc. endeavored to build a community of learners and to provide a safe environment for learning. The long-standing Girls Inc. mission states, "girls are inspired to be strong, smart and bold through life-changing programs and experiences that help girls navigate gender, economic and social barriers" (Girls Inc., 2001). With this mission in mind these programs aim to situate the participants in an environment that reflected and developed their interests and their sense of identity as individual participants working as part of a collaborative group.

Learning Environment

The Teen Zine and the Teen Innovate programs took place in a dynamic informal learning environment. Teen Innovate was set up in a building located in a secured public community center. Additional Girls Inc. staff was onsite to administer snacks and provide any assistance that the instructors needed. The buildings were secured with bars on the windows and special doors that automatically locked when shut. The one-room area was set up as a workshop space, with six, 6-foot worktables, white boards and six Dell computer Notebooks. The participants had the freedom to choose where to sit at the

worktables and were separated only for small group discussion and work. See Figure I for a photo taken during the Teen Innovate weekly meeting in a local community center.

Figure I: Photo of Teen Innovate Workspace, 10/30/12

The second program, Teen Zine, took place onsite at the local chapter building. The room was situated at the top of an old restored Victorian house in a neighborhood. The natural light lent itself to the inviting setting with the walls lined with bookcases for the girls' journals and various resources, two small couches, beanbags, and one desk where the instructor sat with her desktop computer.

The Girls Inc. mission was reflected in both of these workspaces, as were the program goals and objectives, to provide a positive environment that encouraged girls to take risks and master, intellectual, emotional, and physical challenges. Implicit in the learning environments was the presence of community and rules that governed and guided the learning environments. Program staff was present at both locations, working on their own projects or on an aspect of the programs, Teen Zine and Teen Innovate. The rules were reflected in staff and participants' behavior, respect for others, and themselves. Even though the instructors were managing the project, and guiding the discussion, there was a strong sense of community, respect, and support for each other's ideas as reflected in the collaborative discussions.

Expanding Network of Local and Global Community

In my first interview with the Girls Inc. Teen Zine instructor, I learned about Teen Zine and the recent changes the program had undergone. The instructor explained that Teen Zine is a program for middle school students to collaborate with high school students to produce a local teen magazine, which the participants entitled OutLOUD. OutLOUD is written for teens by teens. Participants learned how to create an online magazine layout and contribute to the content of the publication by writing and editing pieces and by contributing and designing artwork. Interested 7th and 8th graders were required to take part in an interview process in order to participate.

For the past two years the local chapter produced a magazine that was printed and distributed only to the participants and the families involved with the chapter. In an effort to expand distribution and to create a magazine that offers diverse opinions, they chose to produce the magazine in a digital format, and invited five local school and community organization representatives and their youth writers to participate in the production and writing of the magazine.

The shift from a printed publication distributed only to the local chapter to an online publication for a global audience illustrates how the program evolved to recognize the significance of adapting to twenty-first century media practices. By developing this new strategy, the programs were demonstrating to the participant's ways to safely and successfully engage in a global media culture. The fundamental elements of the curriculum did not change, but by embracing and integrating different modes of expression (written, visual, interactive) in a global context, the curriculum objective evolved to include the exchange between the community inside Girls Inc. and the local and global community.

The Role of Community and Group Participation

The decision to expand distribution of the magazine and the writing and production team to include writers from five local schools necessitated the expansion of resources and activities, which I will discuss later in this chapter. To Girls Inc.'s. credit, they were able to implement this shift while maintaining the fundamental core curriculum and the community-oriented learning environment.

The sense of community was significant in the learning environment of the programs, reflecting the values of community while also cultivating a collaborative workspace. During the Teen Zine focus group session I asked the girls, "What made you want to join Teen Zine?" One girl responded by saying, "I like being with the group. And yeah I don't want to be at my house so here is better." Another girl responded by saying, "I really like being here, I feel like even if we are not writing or working on the magazine, I can do my homework or visit with friends that I only get to see here." It was significant that they reflected on the experience of being a part of the group rather than

about the actual program or project. The environment supported a sense of belonging and seemed to allow them to be themselves and perhaps to be productive and to take chances with their writing.

As the instructor added later in a one-on-one interview,

> It's a space where the girls feel safe and where they can share and not feel concerned that they will be judged. As you have heard, they bring up some very serious personal issues because they know we care. Very often, they end up writing about them or directing that experience into a bigger topic, such as the story written for OutLOUD, *How Women Are Portrayed in the Media.*

In this quote the instructor referred to how the sense of community at Girls Inc. supported the group work that encouraged in-depth discussions, which led to articles for OutLOUD. The instructor explained how an article entitled "*How Women Are Portrayed in the Media"* evolved from one teen sharing her personal experience, which then evolved into a group discussion.

Relationship of Personal Experience in a Learning Context

The above quote also illustrates how the sense of community cultivated a productive collaborative work environment. As described by the instructor, the girls would often share a personal experience during a writing lesson or while brainstorming topics for their articles, which the group would then discuss. For example, after discussing an experience with the group of being bullied, the same girl that had shared this personal story wrote an essay about violence against women. The lesson that day was about how to write an Op-Ed (originally standing for opposite the editorial page), a news article that expresses the opinions of an author. The instructor explained that ideas for an Op-Ed piece can come from other people or from their own personal experience and that they needed quotes to substantiate the information. While discussing what makes a good Op-Ed piece, one of the girls started talking about how she had to get a restraining order against a girl from another school because she had been threatening her and following her home from school. As the group discussed the issue over the next few weeks, it evolved into a discussion about how girls can be mean and judgmental towards one another and how boys witness this and can mirror that behavior back to those same girls. One girl then brought up the topic of how women are portrayed in the media and how that influences the way women treat each other:

> Sometimes I feel like women feel like they are being watched all of the time like they are going to be judged and not by men but by other women. And I don't like that, it's kind of scary. I think it's really when like groups are representing a certain cause when they plan to take down another

> group or another person just because they disagree with them. Like I remember Jenna Marbles made a video about sluts and she said some things that I don't necessarily agree with but then all of these feminist groups planned on taking her down like they weren't "oh we really disagree with you", no, they had to take her down. And I really get annoyed when like — she's so funny. She's sarcastic. She's trying to tell people don't be promiscuous. And people sometimes do this because they can be anonymous online.

Upon hearing this personal issue that one member of the group was experiencing, the group responded with examples of bullying and the portrayal of women in the media. The discussion evolved to questions of why women treat each other badly and what message that sends to boys and the role the media plays with negative and skewed messages about women through images and print. By exploring the core issues of bullying and how women treat each other — which started with one girl's personal experience — the group together developed essay topics that would benefit others, their local and global audience. This example also illustrates the influence that media sources can have on public opinion, providing an opportunity to teach the participants how to break down a media message, to extract the intended message, and to interpret the subtext as it relates to them.

During this same discussion the instructor continued to demonstrate this practice by sharing a recent post that had been traveling across various blogs of a criticism received by Lady Gaga for being fat, explaining, "Women have really strong opinions and they need to be shared. I can share the Op-Ed piece about Lady Gaga when they called her fat." The instructor proceeded to pull up the article on the Internet so that together the group could read the original piece and the responses that had been posted. The girls with smartphones asked for the link so that they too could look it up and read the blog along with the instructor.

The instructor commented, "She essentially retaliated. It covers the ideas of women struggling with body image. Hey girls what's a meme?" A few girls responded saying they didn't know, but one told the group, "It's kind of like Instagram but with words, I think." After doing a search online, together they learned that a meme is similar to Instagram. It was defined as a unit of cultural transmission, an idea, behavior, or style, and in reference to the Internet the definition extends to a concept that travels between users.

This scenario illustrates the significance of the girls having a safe space to share their own stories and their own knowledge and how these factors contribute to their collective work by writing about relevant topics and producing a magazine. In the context of discussing and brainstorming topics, the instructor used resources from the Internet demonstrating how to utilize credible media sources. The girls mirrored this practice by looking up information on their smartphones while examining their own editorials for the magazine. Each of these components taught girls how to use twenty-first century skills in the context of discussing relevant personal and global topics, including

capacities related to collaboration, project management, sense of audience, media savvy, and competent use of tools.

Participants' Learning Processes

At the center of the rich, dynamic context that I have described were the relationships that were forged between the instructors and the participants, and among the participants collectively. As the girls shared their individual experiences, opinions, and ideas while working toward a collective goal, their ideas, understandings, and practices grew and evolved. These dynamic interconnected relationships over time served to expand the learning process involving the internalization of individual, social, and cultural practices while collectively working towards the co-construction of knowledge, as reflected in a digital magazine or energy efficient green bus. This section discusses two themes that emerged from the data related to the participants' learning processes during these programs: building relationships with fellow participants' and identity construction in a social context.

Building Relationships with Fellow Participants'

The following interview quote with the Teen Innovate instructor illustrates the unique way in which the program considers the building of relationships and sharing of cultural identity to be central to the personal and intellectual development of the girls. With the goal of the program being to design a prototype model green bus for their local community, the instructor explained how she began a discussion about the participants' racial background as a way to explore aspects of their own communities, cultural identity, and their cultural history:

> I understand the hurdles as a black woman. As a woman of color, I am encouraged to interact with the girls and to build personal relationships. The program is much more about green technology but I find that they lose focus, that they need more of a reason for doing the work — then we instead had a round table discussion about getting to know each other. It makes all the difference.

Directly following this interview, a number of girls entered the work area, ten in total. They were restless, which was understandable as it was the day before Halloween and a week before the Presidential election. One girl asked, "Will we have time today to talk about the election?" "Yes", responded the instructor, "we can discuss it during the last 15 minutes of class." She instructed the girls to get their journals, a snack, and to have a seat. "As you all know, your final project is to design a solar paneled bus, and that will also solve transportation issues in your communities. But before that, let's talk about

you. Tell me something about how race has affected you and something you love about your race."

In response to the instructor's question, the following transcript is an excerpt of a discussion that took place between the participants and the instructor.
The excerpt illustrates how participation in a discussion of race within the context of developing solutions to transportation issues in their communities provided an occasion for learning to apply skills and knowledge in real-world contexts.

I: Tell me something about how race has affected you and something you love about your race.
G1: Well, what kind of race? Female race? Or like my family?
I: Well, what are you? What do think you are?
G2: She thinks she's Asian.
I: Let her talk. However you identify, if I was to say what is your race, what would you say?
G1: Hispanic
I: Hispanic? Ok. What is a situation where you feel like race really affected you?
G1: I don't think I have one yet.
G2: You will when you get older.
I: Tell me something that you love about your race?
G1: That they're loud.
I: You love that they're loud? Ok.
G3: I thought race was just – that it was just Black, Hispanic, White and Asian.
G2: And then others.
G4: I know, right.
G5: I guess I am south Asian. Um a teacher didn't like me and I don't know why she didn't like me. Once when I wanted to go to get something from the locker she said, 'are you going to get your turban?' It was embarrassing. I laughed mostly because I was embarrassed.
G2: I love making fun of people who say it like that. I think their clothes are pretty. I think it's funny when people say Paaakastani.
G3: Well how you say it?
G2: Or people ask me if I speak Muslim.
G3: Isn't it a religion? They are being not so smart. Um, I am Mexican, I think. That's what my grandma said. One time when we were in Mexico with my dad and my dad was wearing a sombrero and he approached a woman to ask her the time and she said, 'no, no, no, I don't want to buy anything'. She thought he was trying to sell her something. I thought that was really racist. My dad told her, 'no, I was just going to ask you the time'. And then she was like, 'Oooooh I am so sorry'. Something I like? I like our food, I like our family.
G6: I am black. Nobody being racist to me. Everybody likes me. Um, I don't know. I like Black girl hair.

The discussion above illustrates how the instructor created a sense of community and bonds among the girls. By asking the girls to discuss their cultural identity and the challenges they encounter, the instructor laid the foundation for their collective work in which they would conduct research and inquire among one another about local transportation issues in their urban communities. Having shared their individual experiences encountered in school and home life, they were being prepared for the group work that required them to discuss equally challenging realities experienced in their communities. I discuss the transcript further in the following section.

Identity Construction in Social Context

The individual, social, and cultural practices that helped shape the individual and group identity can be seen throughout the dialogue that I have transcribed above. One of the participants seemed unclear on what "race" meant, asking if the instructor was asking about her gender. Others were unclear of what race they were and some uncertain if there were more races, other than Black, Asian, White and Hispanic. The girls shared experiences of being mis-judged, either towards themselves or a family member. There is so much to be heard in this transcription, but for purposes of this study, I will say that the opportunity to explore this topic among this group of 14-year- olds was significant, underlining their sameness and difference.

Overall, it was evident from the respect and congeniality that they showed one another that new bonds were formed, each having a distinctly different relationship to their race and their culture but universally sharing their uncertainty about what that means and in some cases, a painful memory of feeling judged. By grounding them in their own cultural identity and by discussing their heritage and identifying an event connected to their cultural history, I could see the value of beginning with their own story with the intention of exploring their local community.

This example of the participant's engagement links with social constructivism in relation to how past experiences and knowledge shape a youth's expectations and approach to participation. The participants boldly and openly discussed sensitive issues, creating a personal and social experience. This ten-minute discussion was the precursor to the research they conducted to develop solutions to the real problems that they encountered when simply trying to use local transportation. Social constructivism also addresses these issues by treating learning environments as being shaped by the learner's experiences and knowledge of the subject matter and by diverse learning styles.

How Tools and Activities Are Supporting Learning Processes

At the nexus of these dynamic collaborations that led to the production of collective projects were tools, resources, and activities engineered by the instructors and taken up by the motivated participants. The many different resources and tools that were

used for the activities in these programs were computers, websites, social network sites, journals, and smartphones.

As discussed in earlier examples, individual participants navigated their way through the writing and design tasks having brought their own personal and cultural experiences to the process. During this process we saw examples of the use of web resources to illustrate how to write an Op-Ed piece as well as ways to develop and position an argument within a media format. Each of these tools uniquely contributed to the development of the participants' twenty-first century skills, namely cultivating the ability to travel across diverse communities, discerning and respecting multiple perspectives, and grasping and following alternative norms.

For the purposes of exploring these resources, this section discusses six key themes that emerged from the data related to the tools and activities employed to support the participants' learning processes: integrating web-based resources, reciprocal relationship between individual and group learning, navigating social media websites, negotiating different personas offline and online, the role of mentor and community engagement, and personal knowledge.

Integrating Web-Based Resources into the Curriculum

As a way to demonstrate how other youth produced media that appealed to an urban youth audience with multiple perspectives, the instructor introduced the website YO! (Youth Outlook). YO! is an online digital magazine written for youth and by youth that has been produced in the Bay Area for over ten years. The instructor guided a conversation about the different ways to write in an online context, while reviewing work by experienced youth writers, photographers, poets, and videographers.

The group watched a video clip on YO! of a teen talking about stealing phones, called *Jail-Breaking Phones*. The girls admitted knowing kids that do that. They seemed surprised that people would film a video of themselves talking about a crime they had committed. The instructor pointed out that YO! advocates youth telling their stories, in a real-world context, emphasizing that people make bad decisions but that does not make them bad people and that now they are making art, producing videos, writing poetry, and accomplishing something. At this juncture, the conversation shifted to an update about a girl being bullied by another girl. The instructor allowed the story to unfold until she found an opportunity to bring the focus back to the next topic, photojournalism.

While introducing the role of photojournalism, the instructor searched for the Getty Museum website and showed images by Dorthea Lange as an example of how a photograph tells a story. Next the instructor brought up examples of work by National Geographic photographers and asked the girls to write a caption that would capture the essence of the photograph. The following transcript documents the discussion.

I: Who can tell me what photojournalism is?
G1: You mean writing but with photos?

I: I like that description. I am going to show you some pictures and you guys come up with captions.
G2: After the Fire. (The image is of a newly burned house).
G3: When Fall Begins. (Image of leaves, wind, a city street)
G2: Goal! (Image of a soccer team scoring a goal)
I: Dorthea Lange was a famous photographer that documented the depression as it unfolded in the Dust Bowl (shows images from the Getty website).
Do you feel like you could do something like that? Yes, great. I know that you don't realize it but you guys are documenting so much of your lives, more than any other generation. Now I want you to take pictures of things that you see, and write a sentence about it that captures the story within the image. Ask yourself;
Who is in this picture? What do you see in the picture that gives you clues?
How would you describe the woman's expression?
What does the woman's gesture tell you about how she is feeling?
How do you think the public responded to this photograph when it was published in a newspaper?

Here we see the instructor using tools and resources the participants are already familiar with — websites and photographs. In this example she expanded the way a photograph is regarded to expand their understanding that a photograph tells its own story and that people such as Dorthea Lange (see Figure II) have documented significant periods in American history with only a single image.

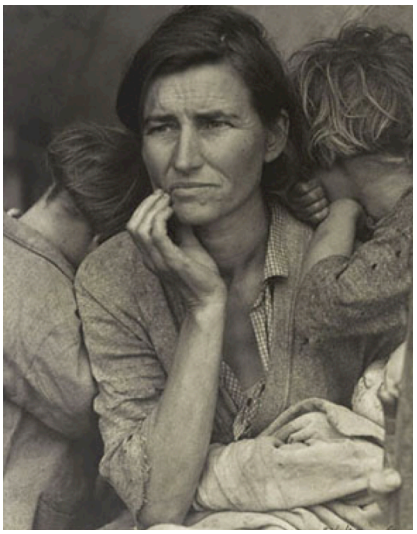


Figure II: Human Erosion in California/Migrant Mother, Nipomo, California, Photograph by Dorthea Lange for the US Resettlement Administration, 1936

These web-based resources when used in the context of an analytical discussion, such as reviewing the Op-Ed piece about Lady Gaga or the message behind the photographs of Dorthea Lange, sparked unique ideas that otherwise might not have been generated. The writing samples and video clips seen in YO! served to illustrate both the mechanics of writing for a diverse audience and its potential to spark a dialogue or build a community, especially when posted in a digital format such as a meme or a blog. The notion of following the flow of stories and information across multiple modalities and the ability to pool knowledge and compare notes with others toward a common goal are skills that are preparing the participants of Teen Zine for work and school.

Reciprocal Relationship Between Individual and Group Learning

> *At Encinal high school, like you learn about Digital Citizenship — and it's about safety of online activity it was really fun and you learn about cyber bullying and laws against pornography and about laws and how to get a job on your Facebook and how to maintain your social stuff online. But they don't have that at my school.*
>
> -Teen Zine Participant

Social media networks as a means for building an audience and a message is a resourceful tool used by a large percentage of teens. After four months of program observations and staff interviews I had witnessed the participants intermittently discussing different social media networks in the context of writing and producing OutLOUD. In an effort to understand how the Teen Zine participants thought about and used social media networks, I conducted a focus group on the topic.

In the lead quote above, taken from the focus group transcript, one girl enthusiastically described how her previous high school offered a class on digital citizenship, but at the end she added that her current school does not offer such a class. Next, she described how her school only offered a basic computer skill class that mostly taught Microsoft Word, PowerPoint, and Excel. It was clear from the way she rolled her eyes and the tone of her voice that she believed the class was a waste of her time.

In this interview, I asked the Teen Zine participants if they were familiar with the term "media literacy." The following transcript is a discussion of why they choose particular media formats over others, their perceptions of their new media practices on the Internet, and how their practices contribute to their collective group activities.

R: What do you think when you hear the term "media literacy"?
G1: Literacy in the media. What does it mean?
G2: Is it um the writing that takes place online or something? I don't know.
G3: You have a story that can be seen because its online more people have access to it or something. I don't know.

R: Do your teachers talk to you about technology? Do you they discuss different ways to use technology?
G4: No.
G5: I took a class it was horrible, I switched out. They were like this is Microsoft, I'm like I don't care I learned that in 5th grade!

The responses to these questions revealed similar data to my quantitative results. A large percentage of the participants as revealed from the quantitative data survey were unfamiliar with the term "media literacy." The participants in Teen Zine were somewhat unfamiliar with the term and yet, as the following discussion demonstrates, some were decisive and discerning about how and why they use certain social media sites.

Navigating Social Media Websites

Following the discussion about media literacy I asked the participants if they were ever concerned with their safety online. One girl responded with the following explanation,

> Oh yeah, I am because sometimes people online do things anonymously, it's like nobody ever knows. People do stuff they wouldn't do in person but they do it online, its sneaky and people can say whatever is on their mind. They say the meanest things and it can make you feel insecure and because they are online they have more power than you would.

Next, I asked, "Does it cause you to hesitate to have your own Tumblr site or to post on Instagram?" One girl gave the following discerning response:

> On Tumblr I don't really care about what people think of me. I don't have Instagram because I care too much about what people think of me. And I don't have a Facebook or Twitter because everyone I know has a Facebook or a Twitter account, so I prefer to stay away from people that I know and stick with people that I don't know because they really like me. They don't know me either way, but they like what I write about. I don't want people knowing everything I do. If someone screen shots you and sends it and will judge you after school and point and say, 'oh look at that girl she did that on Instagram' and then on Twitter people can go back and forth and talk about you and I would just rather not have that any of those.

While the teen gave this discerning explanation of her social network choices, I noted the group listened with interest. She had their full attention as she explained her clear boundaries about why she did and did not participate in particular social networks, explaining in detail why she did not participate in Facebook or Instagram and mostly only with Tumblr. She shared with the group that her decisions gave her a feeling of being in

control, explaining how much she disliked Twitter because rapid Twitter exchanges could occur during the school day almost like a rumor mill, and she was not comfortable with how that mis-perception expanded. As she explained her reasons, the group showed their agreement by nodding their heads and saying "yes" and "you are so right", agreeing but not yet sharing their own social media choices. My sense was that they had not yet defined their choices as clearly as their peer.

Her choice was clearly Tumblr, providing a computer platform with functions that enabled her to cultivate a community. As she explained, the Tumblr community that she had attracted gave her a feeling of support to express herself freely and authentically. Through her efforts, she attracted a positive group of followers, a collective group of individuals who were supportive of her writing, photographs, opinions, and perceptions. From her clear description, her choices seemed to give her the confidence to continue to contribute to her Tumblr, without the fear of being judged unfairly.

This cycle of sharing and receiving feedback within an online community demonstrates a method by which this girl had learned to discern and define boundaries for herself. The example clearly illustrates a set of social and cultural skills that are being cultivated through the use of a social media site. I was able to identify many of Jenkins' new media literacy skills (NMLs) in this example, including judgment, negotiation, networking, and distributed cognition.

As noted, some of the other girls did not express the same level of confidence or certainty about why they preferred one social media site to another. One girl explained that she did not know any of the people that followed her on Tumblr, because she preferred that her work remain anonymous or at least not seen by friends and family. In addition, she liked that she can create her own style of writing. She went on to say that maintaining her anonymity among her Tumblr community gave her the confidence to experiment with her writing.

However, one girl explained how she was not able to figure out how to use Tumblr. She described how she tried many times but in the end found it to be too complicated for her so she gave up. This same girl also expressed how difficult it was for her to write her Op-Ed piece for OutLOUD and had given up on that. The instructor told her and the rest of the girls that they had to stick with the deadline, reiterating that it was in fact their publication and their work that gave it life. By the end of this session, the girl completed a draft for OutLOUD and with the assistance of a peer, started her own Tumblr. She explained that she felt focused and encouraged by this environment and therefore able to write the first draft of her Op-Ed piece about autism and even post it on her Tumblr.

Negotiating Different Personas Offline and Online

After the rich discussion above about navigating social media platforms, I thought about the negotiation between an online and an offline persona and how challenging it can be to find the balance. For example, while part of the group of Teen Zine, one girl preferred to be anonymous online where she felt comfortable and safe in a way that she

did not yet feel comfortable in the small intimate setting. On many occasions the instructor asked her to read her writing to the group but she refused. And yet, as demonstrated in her articles written for OutLOUD, she was a skilled writer who delivered thoughtful and relevant opinions. Within these two different social contexts, online and in person, she was discovering unique ways to express herself and new ways to express different aspects of her identity.

In a follow-up interview, the instructor expanded on what the girls were discussing in regards to choosing what type of social networks to use and why:

> I think they are branding themselves now. These social networks are allowing them to brand themselves. Telling their audience, 'this is what I think, these are my thoughts, this is what I want to show the world about me'. The users on Tumblr take care of one another, they look out for each other. If someone starts bullying another user, a group will form and put a stop to it. They feel safe in that environment, like they have some control over who is a part of their Tumblr and who is not, there is a feeling of freedom to express their ideas and opinions.

Through these observations, interviews, and the reading of OutLOUD articles, I discovered something that I had not anticipated — that these girls were only just beginning to understand how to discuss these issues of media practice and choice and to reflect about their personal behavior. In their articles, I heard one voice, in the discussion among their peers I heard another, and I imagine that in public outside of Girls Inc., they may have yet another. I started to see this pattern with the participants in both Girls Inc. programs. The girls were developing multiple roles and multiple discourses and those discourses were constructing their identities, which was helping to construct the roles and discourses of other youth, both within the program and for their audience, the readers of OutLOUD.

The Role of Mentor

At the center of the collaborative work at Teen Innovate and Teen Zine were the instructors. By integrating the program curriculum, the program objectives, and guiding the girls' ongoing participation and productive contributions, they steered the group collaboration. The program time accommodated and encouraged the girls sharing their personal experiences, which the instructors skillfully integrated into the curriculum for that day. The ability of the instructors to do this so well was grounded in their subject expertise and background. The Teen Zine instructor had a background in journalism, and the Teen Innovate instructor had a background in science.

In the context of a topic such as the mechanics of writing an article for publication or demonstrating how a photo tells a story, the Teen Zine instructor was acting as a mentor or expert other. She was able to guide her participants through the editorial process while exploring their own experiences. Similarly, the Teen Innovate instructor,

with a background in science, was able to skillfully monitor a discussion about race while grounding it in a project about issues of transportation in an urban community. The instructors modeled professional expertise, as well as the twenty-first century skills of project management and media savvy.

Community Engagement and Personal Knowledge

Teen Innovate participants had the goal of developing and designing a model green bus for their local communities. Teen Innovate used a problem-based curriculum that capitalized on the girls' interest in design and environmental issues. It provided structured interactions with STEM professionals, including having girls participate in engineering teams and presenting innovations to STEM professionals. The use of the innovation process of STEM encouraged the girls' interest in STEM careers and provided insight and opportunities for their research on STEM concepts in informal learning environments.

The first and second week of the program, I observed the participants learning about the combustion system. The instructor had divided the participants into small working groups. Based on their previous discussions about the combustion system, participants were asked to present the order in which an engine operates. The worktables were set up as research stations with different resources that the groups rotated to every ten minutes. Each station provided the resources that they needed to develop a presentation about how an engine operates, what it emits, and how to convert an engine to solar energy. As part of this activity they learned how to search and find credible YouTube videos that demonstrated how the engines operate, how to document and observe the activities of bus riders using photographs, and how to interview other group members on their experience riding local transportation.

During the review discussion about combustion engines, the conversation turned towards politics, the coming Presidential election and about specific candidates. This is what is unique about these programs — often these conversations occur spontaneously. As I have discussed, an objective of Girls Inc. is to allow the personal experience of the participants to drive their work in the programs. By allowing the girls to freely share information about their school and home life, they were getting the message that both personal experience and knowledge have a role to play in their work.

Next, the issue of gay marriage was discussed and how a kid at their school committed suicide after revealing himself as being gay. The discussion then evolved to bullying and how to gain trust in each other and to develop a relationship of trust. The instructor then turned the participants' attention back to the subject of transportation with a series of questions and an activity designed to categorize and operationalize their answers. See Tables 3.1 and 3.2 for evidence of the work that was generated from the following discussion questions.

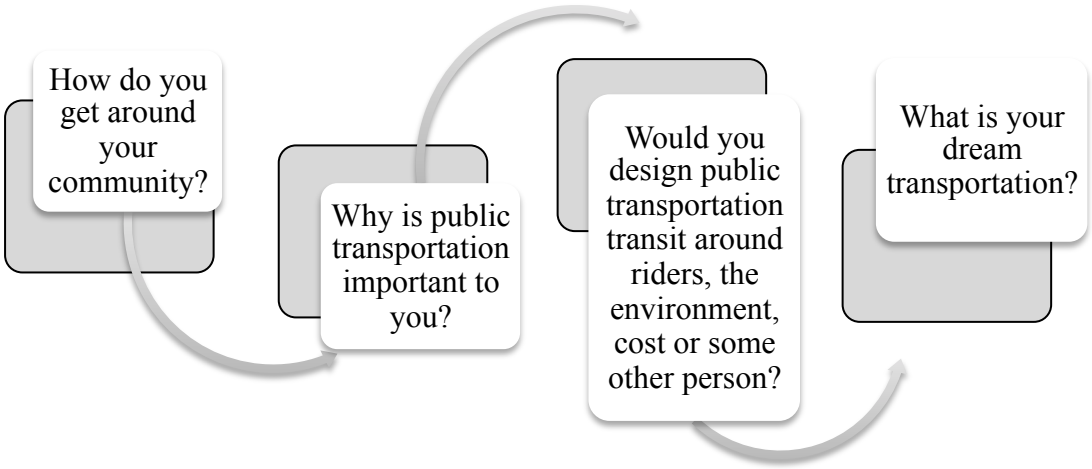


Table 4.0: Organizational Chart

In groups of three, the participants were asked to discuss the questions in Table 4.0, shown above. The groups were also given photographs, such as these images in Figure III, to support their small group discussions. They were asked to observe what is going on in the photos, to document their observations, and to generate additional questions such as those listed in Table 4.0.

Figure III: Photos taken during Teen Innovate program; October 2012

Next, each group shared their questions during an all-group discussion. With the girls' input, the instructor placed the questions into one of two categories, *What We Know* and *What We Don't Know.* The group responses are reproduced in Table 4.1, shown below.

What We Know	What We Don't Know
• There are cars that don't pollute. • It pollutes our air. • Buses use fuel. • Buses can be green. • Buses are overcrowded. • Buses are dirty. • Bus stops are unsafe. • Bus drivers are hostile.	• Why can't we have AC or heaters on a bus? • How big is the engine? • What type of oil do we need? • What kind of metal does it use? • Why don't buses have weapon detectors? • Why are the windows made of plastic?

Table 4.1: What We Know and Don't Know About Transportation.

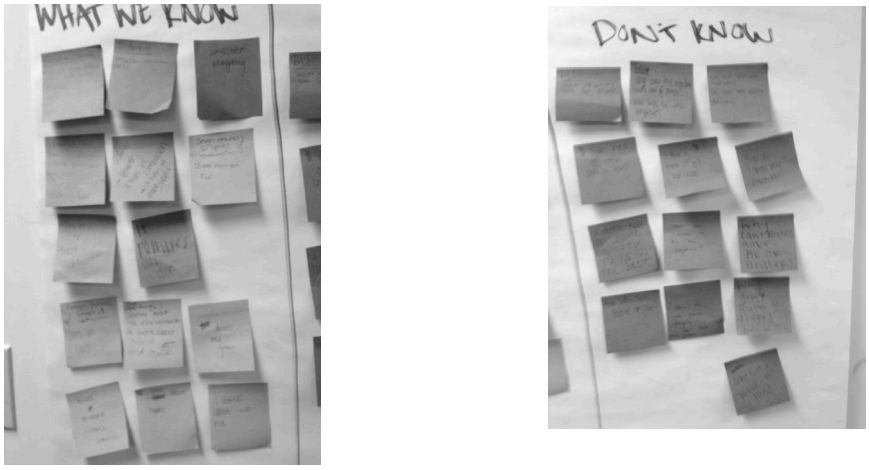


Figure IV: Photos taken of original discussion tool during Teen Innovate program; October 2012

Following the discussion about how to categorize information, participants were asked to identify the information from their *What We Know* and *Don't Know* charts into the categories *problem*, *opportunity*, *insights*, *needs*, and *themes*. They created an

acronym for these categories, POINT. The questions written by each team on the notes on the chart below are replicated in Table 3.2.

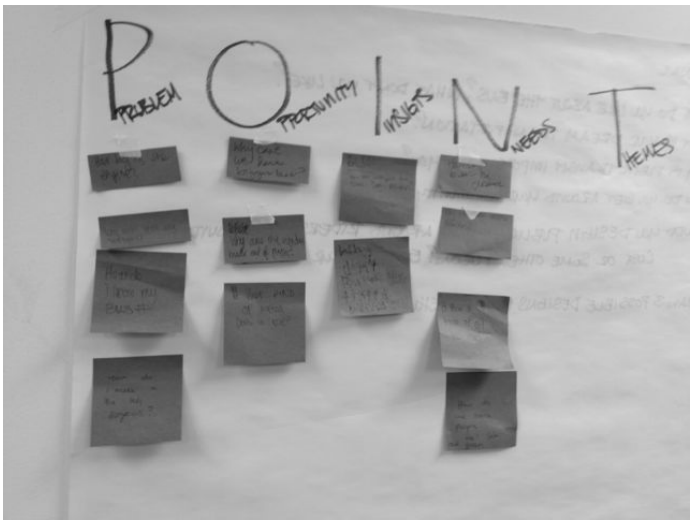


Figure V: Photos taken during Teen Innovate program; October 2012

Problem	Opportunity	Insights	Needs	Themes
How big is the engine?	Why can't we have a bigger bus?	How do we get the fare for babies?	How can buses be cleaner?	
Why aren't there any seatbelts?	Why are the windows made out of plastic?	Why don't buses have tinted windows?	How can buses have weapon detectors?	
How do I know my bus number?	What kind of metal does it use?		Is there a type of oil we need?	
How do I make a bus less dangerous?			How do we make people feel safe and green?	

Table 4.2: ***POINT work chart.***

In the process of carrying out these activities, the group discussed their personal experiences while riding the public bus in their neighborhoods. Participants discussed how these POINTs directly affected their own communities and their everyday lives. The

comments and questions included: “Why do they let hobos on the bus?”, “Why do they just keep letting people on when the bus is full?”, and “Why are the bus stops lights always blown out?”. The participants shared stories about violence that they encountered while riding the bus during the day and the evening. The following transcript was extracted from this discussion.

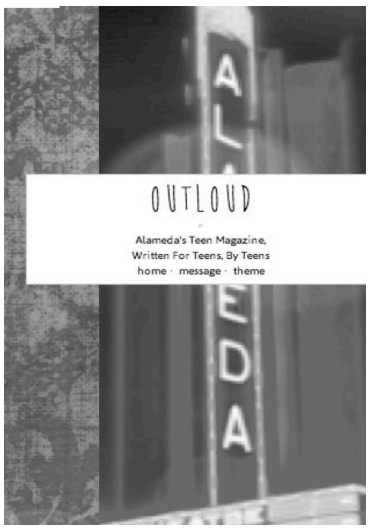
I: Tell us about a situation where you felt it was dangerous or something that was not good that happened while on the bus? We will go around the room and tell us a story about being on the bus when it was dangerous or really inappropriate.
G1: So, my friend and me were in Chinatown and this dude was really rude and obnoxious so um they were scared because they were gay – he was so loud so he pulled out his stuff and pissed on the bus. The bus driver stopped in the middle of the street and kicked them off the bus.
G2: This little old lady got on the bus and the bus was bumpy and jerky and she fell and hit her head.
G3: The most dangerous thing is waiting at the bus stop. One time when I was waiting – and then there were perverts and bikers and stuff, it was bad. They should make a little house.
G4: Me and my friend were on the bus coming from school and this man he bumped into her– she was like - excuse me – you bumped into me. And he said I don’t care. So she walked up and slapped him – he was stunned. He acted like he was going to hit her. Then she slapped him again. His friend pushed him to the front and I pushed her to the front.
G5: There’s a video this - called - The Upper Cut video – what kind of stuff is that? It’s where a bus driver hits a girl who was giving him a hard time. He hit her and then threw her off the bus.
G6: Yeah, I saw that. This girl got up in the face of a driver and he upper cut her.
I: Ok so being at the bus stop. That’s a problem.
G7: Don’t ever sit on the benches – a hobo sat there and started humping the bench.
I: So we are totally grossed out by a bum humping the bench but not about some guy peeing on the bus?

These perceptions and experiences in their communities is another example of how the girls’ personal experiences, when shared in a learning context, can act as a catalyst toward change and motivate them to develop solutions to change the real-world in a way that directly affects them and their community. By engaging the participants in these mediated activities, they directly experienced how their individual participation contributed to solutions that, when taken up collectively by a group, can be acted upon. These tools and resources, the expertise of the instructors, and the motivation of the participants together forged a series of pathways that led to the production of a collective project.

Production of a Digital Magazine and Green Bus

> *I want to go through this world in my body without having to talk. It feels good to write, and to tell my stories — I was just in the school newspaper. Writing is really validating.*
>
> - Teen Zine Participant, 3/3/13

These projects both drew upon the social worlds discussed in the previous sections of this chapter: the learning environment that emphasized inquiry, participants' roles and instructors roles as mentors, and the tools and activities that supported the collective production of their projects. This section describes both projects, including the activities and tools that were employed for their productive ends.



OutLOUD
Alameda's Teen Magazine
Written for Teens By Teens

http://alamedaoutloud.tumblr.com/

Figure VI: Image of OutLOUD masthead 3/13

Production of the Teen Zine Magazine - OutLOUD

The culminating project of Teen Zine's magazine, OutLOUD, successfully went live in December of 2012. Embedded in the dynamic publication were articles, photos, and drawings produced and written by Teen Zine participants. It is hosted by Tumblr. After multiple discussions in which they deliberated about whether to host the magazine on Facebook or Twitter, not surprising from the earlier discussion, the girls seemed to feel the most confident and in control with this social network platform.

The title, OutLOUD, came about from discussions about culture, content categories, what stories they would post, and the tag line. A committee was formed that included a representative from each of the schools and community organizations. There was no formal process for editing an article; it came about from the weekly discussion, as I have illustrated in the previous sections. Depending on who was attending a weekly meeting, one or two participants would volunteer to edit or assist with the editing on an article.

Examples of the articles that were published in OutLOUD are *Steps I Should Have Taken To Get Into College, Ethical Fashion Show: Outlining Impacts of Buying Used vs. New Clothes on the Environment* and a movie review of Life of Pi. As the writers and producers of OutLOUD developed their craft and expanded their audience, so did their magazine. Along with Op-Ed pieces they included book reviews based on in-person interviews with local Bay Area writers, call to action pieces for community engagement based on in-person interviews with local philanthropists, and poetic pieces such as *Meaning of Sound*. The individual voices of OutLOUD participants matured, as did the group, and evidence of this is seen in their collaborative work.

Production of a Model Green Energy Bus

In parallel, Teen Innovate participants collaborated on discussions of design principals and solar energy while they conducted research about solutions to transportation issues in their local communities. While working in their small groups of three, they conducted initial research, designed their prototype green bus, and developed a proposal that addressed solutions for resolving local transportation issues. The groups were asked to re-address and re-consider the questions shown below in Figure VII and to integrate their findings into their design and proposal for the local Transit Commission.

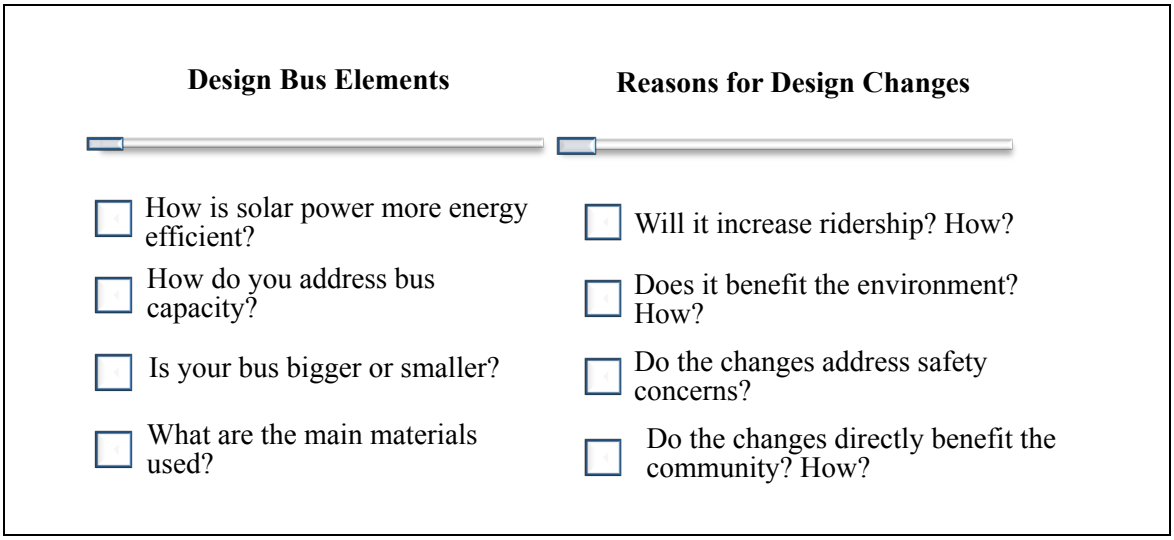


Figure VII: Small group questions.

After reviewing the principles of design, participants were asked to draw three possible designs for their vehicle. Along with the models, the participants produced research proposals using the tools named in the earlier sections — websites, photographs, YouTube videos, and the knowledge of other participant members and the instructor. The photographs in Figure VIII are examples of two of the prototype green buses designed by the Teen Innovate participants.

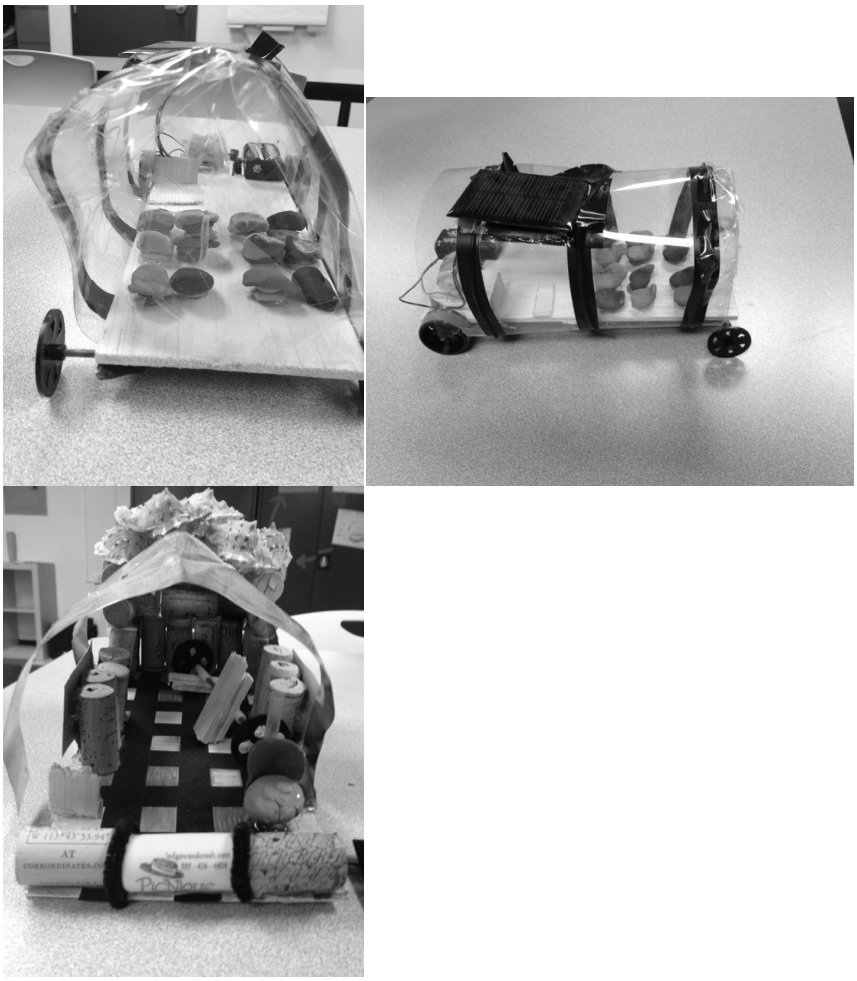


Figure VIII: Teen Innovate Solar Energy Prototype Models, 11/15/12

Emerging Twenty-First Century Literacies

Throughout this chapter, I have attempted to identify twenty-first century skill development as it emerged from the qualitative data. As a way to operationalize Jenkins' 12 new media literacy skills (NMLs) with my qualitative data, I added the 12 NMLs as

codes. This enabled me to identify where Jenkins' NMLs were seen in my observations, interviews, and the focus group. The 12 NMLs are *performance, play, simulation, appropriation, collective intelligence, distributed cognition, judgment, multi tasking, negotiation, networking, trans-media navigation, visualization, and community involvement*. Jenkins' definitions of the 12 NMLs, as outlined in Chapter Three of this study, provide a framework for identifying these skills within the Girls Inc. program activities. Namely, the final Girls Inc. projects exemplified *collective intelligence*, which is defined by Jenkins as the ability to pool knowledge and compare notes with others toward a common goal.

The production of an online digital magazine is both an example of *collective intelligence* and Jenkins' NML skill, *networking*, the ability to search for, synthesize, and disseminate information. Both Teen Zine and Teen Innovate are an example of how the participants pooled their knowledge toward a common goal. While interviewing the instructor of Teen Zine, I asked why they were collaborating with other after school programs such as Jetsetters from Encinal High School on the production of OutLOUD. The instructor explained that it was because Girls Inc. wants the girls to connect with other girls throughout the county. "Because the programs operate separately as do the schools, we believe it is important for the girls to get to know one another. It is a very diverse place and we want our girls to benefit from that diversity."

Conclusion

The production of an online digital magazine and a prototype energy efficient green bus required significant resources, many of which I have discussed. Together these resources drew on the unique skills of individuals and motivated participants that when united, can reach a desired goal. As I have discussed in this chapter, it was the exchange of the individual participants working as part of a collective group and the dynamic exchange that occurred with the use of tools and activities that over time transformed both the participants and the goal. In the case of Teen Zine and Teen Innovate, the participants' capacities related to collaboration, project management, sense of audience, media savvy, and competent use of tools expanded with each discussion and activity.

The environment established by Girls Inc. and engineered by the instructors in collaboration with the participants supported the participants' innovative assured approaches to both writing and producing an online digital magazine and designing a viable energy efficient green bus. It established a tradition of inquiry and respect, of participant-centered and instructor-led curriculum, and showed by example that teen participants can be seen as cultural experts in these programs.

The participants' own motivated actions and perspectives towards their own and others' culture and literacy practices supported the extent to which they were able to challenge and develop each other's thinking, doing so in an atmosphere of respect and friendship. Participants developed a sense of themselves as researchers, collaborators, journalists, and scientists, all of which were showcased in their projects.

CHAPTER 5

Over the months I spent with Girls Inc., Teen Zine and Teen Innovate programs made visible many of the central dilemmas, complex possibilities and diverse strengths of how youth engage with and learn in the new media landscape. In this chapter I discuss a summary of findings for quantitative and qualitative themes that emerged from my data, in addition to connections to previous literature, limitations, and implications for future study.

Summary of Findings

Quantitative Findings

The quantitative study was applied to explore the connections between individuals' new media literacies (NMLs) and their degree of media exposure, digital participation, and civic engagement. I found that higher levels of new media literacy skills predicted an increased degree of exposure to media. This was a significant result, supporting the view that new digital media, due to their interactive and highly associative nature, are more attuned to developing the social and cultural competencies needed for full participation in today's digital environment than traditional media, which are inherently more passive (Jenkins, 2006).

In terms of digital participation, I hypothesized that higher levels of media literacy should predict a higher degree of engagement with Web 2.0 platforms. This hypothesis was supported. Out of the digital platforms I explored in this study, the ones that emerged as particularly significant in this analysis were YouTube, Facebook, and online groups (Yahoo, Google, other online communities).

A series of univariate and bivariate analyses of variance indicated a strong relationship between these NMLs and respondents' exposure to new media forms and their participation in Web 2.0 platforms. Specifically, individuals who consume and interact with communication based new media had the highest NML levels, with Facebook, YouTube and online groups emerging as particularly significant platforms in this regard.

For low and high Facebook users a total of two NML skills were especially pronounced in the area of *performance* and *networking*. As a social networking site, Facebook functions as a place for connecting and sharing information as such these results were somewhat predictive. YouTube also emerged as a significant platform in terms of NML skills, with the main difference between low and high users occurring in the areas of *performance*, *appropriation*, and *networking*. These results can be explained by the primary functions of YouTube as a site for producing and viewing popular content, a source of multimedia information that is acquired, synthesized, and shared (encouraging networking), and as a place for showcasing aspects of personality and improvisation (performance).

For online groups (Yahoo, Google, other online communities), the NMLs that made the most significant difference between low and high usage were a total of 7 NML

skills (*simulation, appropriation, collective intelligence, judgment, trans-media navigation, networking* and *negotiation*). Most likely this high number of NMLs is due to the reciprocal nature of online groups, engaging in different communities that collectively pool knowledge and comparing notes with others towards a common goal (*collective intelligence*), republishing relevant information, etc.

Qualitative Findings

My discussion of qualitative findings opened with the following quote from the Teen Innovate instructor:

> You are going to identify and conceptualize needs for your community, specifically yours, so when you are building this bus I want you to think about where you live and think about how the people in your neighborhood are going to use this vehicle that you are designing.

This quote illustrates what drove the two Girls Inc. programs — the individual participants and their relationship to community inside Girls Inc. and outside in the local and global community. Teen Zine at the onset of this study expanded the publication of OutLOUD from print and local distribution to digital production with local writers from five local schools and global distribution.

Set in an informal workspace, the Girls Inc. programs cultivated a sense of community within a dynamic learning context. The learning context supported the integration of skill-building activities, brainstormed narrative and design concepts, and critical thinking skills. The instructors developed a working community that responded to their professional knowledge, encouraged the students to look to each other as resources, and developed their leadership skills through individual work and collaborative group activities. The instructors emphasized a participatory inquiry that led to the production of projects focusing on their communities, personal experiences, and cultures. Examples of these were the articles for OutLOUD, *Ethical Fashion*, the series *Instagram Secret*s, and the photojournalism series of local homeless people.

Participants were resources for themselves, their peers, families, and communities. These programs engaged the participants in learning, both for themselves and for others, through highly participatory projects that encompassed listening, writing, reading, designing, innovating, and collaborating. The participants' lives intersected with the program, which brought a depth and relevance and transformed the activities.

The inquiry-based curriculum revealed itself in more activities with the use of different cultural tools such as computers, smart phones, organizational charts, and photographs that when mediated guided the participants to communicate through documentary photography, editorials, and transportation solutions for their local communities.

The intersection of the inquiry-based curriculum, the participant's actions and perspectives, and twenty-first century skills, as defined by New London Group (sense of

audience, project management, media savvy, competent use of tools) was expressed through the two projects described in Chapter Four (New London Group, 1996; Partnership for 21st Century Skills, 2004). The first production and development of OutLOUD illustrated how the participants' use of their personal experiences and perspectives evolved within a group discussion and were expressed in an editorial or photograph. Collectively the group developed skills that led to further inquiry and thus more informed ideas and to a fully developed online digital magazine.

Through the participants' social interactions, collaborative work, and new media practice — emerged a multitude of new media literacy skills (NMLs) as defined by Jenkins. *Performance* and *play*, two of Jenkins' NML skills, are identifiable in this practice of adopting alternative identities for the purpose of improvisation and discovery and the capacity to experiment with one's surrounding as a form of problem solving. Within the context of Teen Zine, the participants' evolved as writers, photographers, editors, and technologists. They remixed media content, *appropriating* and *judging* the reliability and credibility of different information sources for the purposes of producing their own original work for OutLOUD, while also *networking* and *negotiating* demonstrating the ability to travel across diverse communities, discerning and respecting multiple perspectives. As the project of OutLOUD unfolded the participants demonstrated these new media literacy skills offline in challenging discussions about race, cyber bullying, and how peers and the media often judge women unfairly. The opportunities availed by integrating twenty-first century skills in a robust learning environment as witnessed in these programs — can afford opportunities for populations that are on the wrong side of the "participatory gap". The term "participatory gap" is used to describe, "unequal access to the opportunities, experiences and knowledge that will prepare youth for full participation in the world of tomorrow" (Jenkins & MacArthur, 2006).

A second project was the design and development of a prototype model energy efficient green bus. Participants produced a model green bus and a proposal for solving transportation issues they identified in their local communities. The program used a problem-based curriculum that emphasized science, technology, engineering, and math (STEM) concepts that capitalized on their interest in design and environmental issues. The act of developing a green bus that would operate in their own urban neighborhoods as a real case study for the county Transportation Commission, based on their own inquiry and research, ingrained the girls with the idea that they can build and construct technology themselves. The development of the green bus was not just a project that was only an instrument used for social reason, or typing papers, watching videos, or conducting research but for the participants themselves to understand that they are capable of developing and innovating change for themselves.

The underlying STEM concepts contributed a robust element to the Teen Innovate project as reflected in NML skills that emerged from the collaborative group work. As a scientist, the Innovate instructor modeled critical thinking skills while mediating activities and strategies that employed engineering concepts. Reflected in their final prototypes and proposals were skills of *visualization,* the ability to create and understand

visual representations of information, and *simulation,* the ability to interpret and construct dynamic models of real-world processes.

Overall the intersection of these dynamic learning environments revealed the extent to which both participants and instructors contributed to an ongoing evolution of the project curriculum and the participants' worlds by means of constant consideration of personal experience and cultures. The interchange afforded new media literacies, written, visual, and interactive.

Connections to Previous Literature

To set the stage for an analysis of these informal learning programs, specifically of how youth are engaged with new media literacies both online and offline, it was necessary to look at pertinent theoretical frameworks related to youth culture. Sociocultural theory provided a lens through which to focus on how today's young people assimilate the symbolic resources that are made accessible to them in everyday life, and to examine different modes of expression (written, visual, interactive) they engage in when doing so. As discussed in Chapter One, sociocultural theory draws on the work of Lev Vygotsky, with the central idea that cultural tools and symbol systems mediate all human activity, and that meaning emerges in the interplay between individuals acting in social contexts and the mediators — tools, talk, and activities. The context-rich environment as discussed in Chapter Four provided the participants with examples and tools to support their peer work.

The cultural inquiry and personal experiences shared by Teen Zine and Teen Innovate participants were a driving influence in the development of their individual and group projects, expressing themselves through spoken, visual, and written text. The cultural tools (computers, smart phones, social media sites, cultural inquiry) employed for navigating the activities used to create OutLOUD facilitated the productive development of expanding their personal histories and experiences into meaningful editorials including text and photographs. One Teen Zine participant's experience of being bullied by a girl from another school evolved into a three-week discussion about how women treat one another and the influence that has on boys was then developed into an editorial for OutLOUD entitled *How Women Are Portrayed by the Media*. One of the Teen Zine participants shared her opinion:

> Sometimes I feel like women feel like they are being watched all of the time like they are going to be judged and not just by men but by other women. And I don't like that, it's kind of scary.

The editorial in OutLOUD, *How Women Are Portrayed by the Media,* received a number of responses from teens throughout the Bay Area. Through these collective inquiries with peers and the newly forming OutLOUD audience, storylines grew more complex, and in some cases developed into campaigns. Involvement in decision-making and making a positive impact enabled participants to develop initiative and a "language of

agency" (Heath, 1997, cited in Larson, 2000; O'Donoghue, et al., 2002).

A second example of how the work transformed from individual ideas outward to community was a proposal for bus shelters built with solar lights in response to the Teen Innovate participants' repeated experience of waiting in the dark for a local bus to arrive. Through discussions, writing, and focused inquiry the participants developed innovative solutions for their personal safety and generated community-wide discussions via OutLOUD. This resonates with Vygotsky's concept and those working from sociocultural perspectives who stress the link between literacy learning and participation in community life (Dyson, 1989; McClane & McNamee, 1990). That is, when developing an article and producing photographs for a magazine are embedded in broader social goals such as ethical fashion or intimating the lives of homeless people, the literacy practices of the person and the community change and evolve, driven by their social interactions (Street, 1984).

The process of semiotic mediation, a process of making meaning, demands a learning environment in which the elements of practice are inculcated over time by the novice and monitored by more expert others (Lee, 1996, p. 213). By attending weekly editorial meetings with more experienced writers and developing a model of an energy efficient bus under the guidance of a scientist, participants learned to see connections between what they knew about important topics but also "learn how to raise appropriate questions and how to generate arguments using both textual and real-world knowledge" (Lee, p. 213).

This is also a component of social constructivism learning theory, wherein "meaning making" is considered a shared, dialogic process (Jonassen, & Rohrer-Murphy 1999). Equal participation of youth with adults and more experienced peers in a "community of practice" would be a social constructivist notion as well, derived from situated learning (Lave & Wenger, 2002). Thus, conversation and collaborative tools, such as guided discussion in editorial meetings, and the development of an online Tumblr community would be examples of social constructivism (Jonassen, et al. 1999).

The participants in these Girls Inc. programs frequently demonstrated a diverse range of skills and practices involved in the development of twenty-first century capabilities. OutLOUD, once a magazine produced, printed, and distributed only for the local chapter, expanded to include writers and photographers from five local schools and organizations with a global audience afforded by its new digital format. The new OutLOUD strategies engaged the participants in ways to safely and productively participate in a global media culture. Over a year, not only did the editorial staff and the distribution channel expand, but the scope of the stories evolved to include the voice of the community as seen through in-person interviews that grew to be campaigns focused on ethical fashion and Earth day.

In *Media Education* (2003) David Buckingham argues for those in education to consider Vygotsky's concepts to explain the relationship between students' existing knowledge about media and the new knowledge made available by instructors (Buckingham, 2003; 1990). Vygotsky, like John Dewey, demonstrated that children construct their own knowledge based on interactions with others and with the environment. Social interaction, according to Vygotsky, manifests on three levels: 1)

individual to individual; 2) interaction within societal structures, such as school and family; and 3) interactions with systems unique to the culture, such as language and number systems. In this context, Vygotsky viewed cognition as not only what we know, but also how we think about that which we know (Bodrova & Leong, 1996; Vygotsky, 1978). In other words, learning is viewed as inseparable from culture. The discussion about race during the Teen Innovate program revealed shared experiences of feeling judged unfairly and their inexperience in discussing their own ethnicity or racial definitions. In this quote, we hear one participant from Teen Innovate sharing a personal encounter with a teacher at her school and identifying her ethnicity:

> I guess I am south Asian. Um a teacher didn't like me and I don't know why she didn't like me. Once when I wanted to go to get something from the locker she said, "are you going to get your turban?" It was embarrassing. I laughed mostly because I was embarrassed.

As discussed in Chapter Four, this excerpt above was one story of many where the participants discussed their ethnic origin within the context of developing solutions to transportation issues in their communities, demonstrating the significance of learning to apply skills and knowledge in real-world contexts. In the context of Teen Innovate, participants were learning about their own and others cultural identity exploring their sameness and their differences. A correlation between youth participation and social constructivism concerns self-reflection and internalization of new knowledge, skills, and value-based behaviors. One conclusion made by researchers is that reflective, meaningful youth participation impacts youth's civic identity, sense of social justice, and long-term commitment to community engagement (Youniss, et al., 1999).

This process is gradual, requiring participation in diverse settings such that youth can reflect upon and assert his or her capacity to affect how social, economic, and environmental conditions relate to poverty, power, and politics (Bentley, 1998). Social constructivism would describe the development of civic identity through youth participation as "meaningful learning" that "involves willful, intentional, active, conscious, constructive practice that includes reciprocal intention-action-reflection cycles" (Jonassen, et al., 1999, p. 111). The production of OutLOUD and a prototype model green bus were projects that encompassed meaningful learning activities situated around the participants' world of social interactions and collaborative work while engendering a culture involving new media practices.

Jenkins' (2006) outline of participatory culture integrating new media tools builds upon an established sociocultural view of learning that positions learning as a social activity, taking place through communication or interaction with others (Vygotsky, 1934; 1978). The attention paid to fostering new media skills as defined by Jenkins and the development of a participatory culture, shifts the focus from individual expression to community involvement and relevant collective work. As defined by Jenkins, et al. (2006), "a participatory culture is a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing…."(Jenkins, p. 15), culture such as that which evolved with the evolution of OutLOUD. The dynamic

interplay between the individual participants, peers, and expert others together generated a means through which to expand the community within Teen Zine to include participants from other schools as well as the audience.

Central to this dynamic were the instructors acting both as facilitators and experts in their respective fields of science and journalism while engineering activities that employed various cultural tools. Skillfully the instructors modeled the mechanics of developing an Op-Ed piece or designing a green bus while guiding the girls' ongoing participation and productive contributions, toward the group collaboration. The role of socialization involved in the productive work of youth is a significant link between youth participation and social constructivism. Youth engagement with peers and adults in community-based activities promotes strong interpersonal and leadership skills (Dworkin, Larson & Hansen, 2003). In this quote the instructor of Teen Innovate discussed the relevance of her ethnic origin and the significance of developing a bond among the participants, as a Black woman and a scientist:

> I understand the hurdles as a Black woman. As a woman of color, I am encouraged to interact with the girls and to build personal relationships. The program is much more about green technology but I find that they lose focus, that they need more of a reason for doing the work — then we instead had a roundtable discussion about getting to know each other. It makes all the difference.

As discussed in Chapter Four, the community of Girls Inc., is exemplified by the instructors endeavoring to situate the participants in an environment that reflects and develops their interests and their sense of identity as an individual participant working as part of a collective group (Engstrom, 1987).

After two months of observations, watching the evolution of the OutLOUD articles, and reading the audio transcript of the focus group discussion about social media sites, I noticed how the Teen Zine participants displayed multiple identities. Where one girl displayed shyness during the group discussion, she would write with a clear discerning voice in her OutLOUD articles. Within this dynamic environment, the participants displayed one voice to their Teen Zine peers, another voice to their OutLOUD audience, and yet another to their school or personal Tumblr communities.

Erving Goffman talks about how communication is a ritualized process, which allows participants to construct and project desirable versions of their identities in a succession of performances targeted at specific audiences (Goffman, 1967, p. 33). He also refers to this as "'emergent', which allows for the identities of social actors to be multiple and dynamic — flexible and changeable in the course of interaction" (Goffman, p.37). Observing the skillful way the program participants navigated these multiple discourses was inspiring as I could hear and see the journalist, photographer, and scientist emerge in their work and in their voices.

The juxtapositions of these dynamic learning environments, social interactions, and mediated activities demonstrated a multitude of opportunities to scaffold the development of new media literacy skills (NMLs) (Jenkins, 2006). The NMLs or social

and cultural skills that the participants of Teen Zine and Teen Innovate emulated were witnessed in their abilities to interact meaningfully with tools that expanded mental capacities (*distributed cognition*), while evaluating reliable and credible information sources (*judgment*), and following the flow of stories across multiple modalities (*trans-media navigation*). Consistently throughout the individual and collective work, participants demonstrated the ability to pool knowledge and compare notes with others towards a common goal (*collective intelligence*), to adopt alternative identities for the purpose of discovery (*performance*), and to travel across diverse communities, discerning and respecting multiple perspectives (*negotiation*).

The exploration of language, social interaction, problem-solving and community development mediated by tools and networks were evident in the collaborative engagement among the teens and innovative instructors. These diverse forms of learning related to thinking and learning in the twenty-first century were reflected in expressions of identity, independence, creativity, and judgment. In so doing, they approached Paulo Freire's (1968, p.6) evocation "education either functions as an instrument which is used to facilitate integration of the younger generation into the logic of the present system and bring about conformity or it becomes the practice of freedom, the means by which men and women deal critically and creatively with reality and discover how to participate in the transformation of their world."

Limitations

Quantitative

Limitations of the quantitative survey were recruitment for the survey, a lack of available computers, and content. For purposes of proximity, subjects were recruited from only two San Francisco Bay Area Girls Inc. chapters. Additionally, even though the survey had been designed for school-aged children, it had not yet been administered to this age group. I was not certain, nor were the Girls Inc. staff, that the participants would understand it. We decided that a program coordinator or instructor would present the study with a short introduction and remain present to assist the participants while taking the survey. Originally, Girls Inc. staff believed they had enough computers; it became logistically impossible to administer the survey online to 150 girls while also having staff present. As a result 8 percent, or approximately 110 out of 140 of the surveys were administered with paper and pencil. The paper survey responses were later input into Survey Monkey.

In addition, there were limitations in terms of the content of the survey. Comments gathered by the program coordinators and directors who administered the surveys believed that the survey was too long. If the survey was condensed and written in shorter sentences, 15% of the participants that did not complete the study beyond the media exposure section may have continued. Specifically, in section three of the survey where it asks about Appropriation, one sentence reads, 'I have created something new that incorporates stuff from popular culture, like writing a short story based on a

character in Harry Potter, making a fan video, or a music remix.' While the sentence is clear, it is long and considering that the survey had sixty sentences similar to this one, may prove to be too much for this age group.

Finally, I believe it would be useful as clarification for the user and for understanding their perspective and media practice to incorporate and embed media content into the survey —such as short video clips, blog text, or a simulation. For instance, a survey such as this one can be combined with practical workshops, where participants demonstrate the skills they report having. It would be informative to see first hand how they respond to certain prompts while also comparing it to their own perspective based on the survey responses. Furthermore, integrating media content would intersect and inform qualitative data.

Qualitative

One criticism in this study is — how truly representative can a study of two programs be in one organization? After all, these programs were only ten participants in the Innovate program and between eight and ten participants, depending on the day, in the Teen Zine program. I was granted access to Innovate to Educate for two, 2 ½ hour sessions. While packed with rich discussions and productive activities, more time with the program would allow for additional observation as the group work evolved and time for a focus group discussion. By looking closely at events over time, a person or group discussion, larger truths can be revealed.

My relationship with the participants varied in each program — largely due to the amount of time I spent in a program, the set up of the curriculum, and the location of the program. While both curricula operated informally, Teen Zines' highly participatory structure gave way to brief intermittent discussions with the participants, which led to clarification of earlier group discussions and specifically the development of focus group questions. Because Teen Zine took place at the chapter site, I was allowed entry into the chapter discussions among program coordinators and instructors that I did not have access to at the much larger chapter, simply because Teen Innovate took place offsite.

Furthermore, I was allowed entry into these discussions in spite of my attempts to appear as an impartial observer, because of my roles as a teacher and facilitator of informal learning programs. From the moment I entered the program sites, despite my relatively quiet presence, the instructors and the participants attempted to engage me in their discussions. I could not pretend to be anyone other than who I am, a teacher. I did make every attempt to disengage so that I could give my full attention to observing the individual and group dynamics. In the end, I do believe that my background contributed to the study.

Implications for Future Research and Practice

The illustration created by these specific Girls Inc. programs was a complicated landscape of literacy, affinity, and culture. A sociocultural theory of learning provided a framework for considering how different types of new media programs — in a school (formal learning), after school (informal learning), or in home environments (self-propelled) — can work in unison to provide greater accessibility to youth.

The results of this study revealed that not all students have access to a computer or the Internet at home and that the ways they connect to the Internet are varied. As discussed by Jenkins, et al. (2006), we cannot assume that all students have access to technology or to the Internet. Jenkins' work provided us with a focus in which to consider how an after-school program can have a technology component while developing the cultural and skill sets necessary for work and school in the twenty-first century.

There continues to be powerful constraints on use and access to technology. However, it does not necessarily follow that we educators can't raise our voices in an effort to shape the technologies to the ends we desire or even that we can't be successful in using those tools in an effort to empower those who are underprepared in twenty-first century literacy skills.

It is imperative that educators demonstrate an understanding of how to create, contextualize and use digital literacies including multimedia, blogs, wikis, podcasts, and social networking in a classroom. It is also essential for educators to understand how learning in a digital environment affects collaboration and the creation of knowledge about content, particularly in relation to meta-cognition and an awareness of how we learn in a digital landscape. In the context of the research presented in this study, it is important to highlight the two primary questions that have arisen from the research. These include: 1) how can research on new media from out-of-school settings be applied to learning in schools? And 2) how can the growing momentum of participatory cultures be leveraged to transform formal learning environments (e.g., schools, libraries, and museums) into dynamic learning environments while closing the participation gap (Evans, 2006 in Watkins, 2009).

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Appendices

Appendix A:
Survey Questionnaire

Part 1: Demographic Information
Age: 13, 14, 15, 16, 17, 18
Sex: M/F
What Girls Inc chapter do you attend?

- Girls Inc Island City, Alameda
- Girls Inc San Leandro

Which Girls Inc program do you attend?

a) Innovate!
b) All Starts Build It
c) Act/Heart
d) College Bound Program
e) Teen Summit
f) Other after school program managed by Girls Inc

Year in school:
Primary language spoken at home:
English/Spanish/Korean/Chinese/Russian/French/Other (specify)
Mother's highest level of education: None/Some high school/ High School/Some college/ Two-year college/Four-year college/Masters degree/Doctoral Degree/ Professional Degree (MD, JD)
Father's highest level of education: None/Some high school/ High School/Some college/ Two-year college/Four-year college/Masters degree/Doctoral Degree/ Professional Degree (MD, JD)
Part 2: Degree of Digital Participation
Do you have a computer at home? Yes, I have my own computer (laptop or desktop)/ Yes, but it is a shared computer / No
Do you have Internet at home? Y/N
Do you have Internet on your cell phone?
Which of the following devices do you use to get on the Internet? (Check all that apply, then rank them according to frequency of use)

a. a computer at home
b. a computer at school – in a classroom
c. a computer at school – in the library
d. a computer at a library outside of school
e. a cell phone
f. an iPad
g. a game system at home

How many hours per week do you generally spend:

a. On the Internet:
    i. for school
    ii. in your free time
b. Watching TV (not on your computer)
c. Reading books, magazines or print newspapers
d. Playing games (online, on your cell phone, on PlayStation, Wii, Xbox etc.)

On average, how many hours per week do you spend on…

a. Facebook
b. Twitter
c. Bebo
d. Friendster
e. MySpace
f. YouTube (or a similar video site)
g. Online groups (Yahoo Groups, Google Groups, other online communities)
h. Message Boards
i. Games (online, on your cell phone, on PlayStation, Wii, Xbox, etc):
    a. By myself
    b. With other players
j. Blogging (Blogspot, Wordpress, Blogger, etc.)
k. Podcasting
l. Other online activities (specify)

How often do you create projects that use video, audio, music or photographs outside of school, in your free time?

a. Often
b. Sometimes
c. Rarely
d. Never

Have you ever heard of "media literacy" (before hearing about this survey!)?

a. no
b. yes

If so, in your own words, how would you define "media literacy"?

Part 3: Assessing the 12 NML skills
(Using 5-point Likert scales: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree):

PLAY:
I have taught myself something new on a computer by seeing what happens when I play around with it.
When I have a new electronic device (like a cell phone or a MP3 player), I like to try out all the buttons to see what they do.
I have come up with an idea and spent time working to develop it into something, making it a concrete reality.
When I am faced with a problem, I usually try out a few different ways of solving it before I give up.
When I get stuck trying to solve a problem, I see it as a learning opportunity rather than a personal failure.

SIMULATION:
I try to put myself in other people's shoes to understand their problems or situations.
It is important to have simulations of dangerous events like earthquakes or safety evacuations, so that people know what to do in a crisis.
When I read a book, I often think about what it would be like to be those characters.
I think about the way in which reality is represented in movies with computer-generated simulations, like Avatar, Inception, 300, Sin City, Iron Man, X-Men, etc.
I would like to participate in a simulation of something I cannot experience right now as a student, like flying a space shuttle to the moon, or piloting a fighter jet.

PERFORMANCE:
I often take on a different identity in order to experience something new or to solve a problem (online games, role-playing, theatre exercises).
I like to be involved in role-playing activities and/or theatre.
I know that I need to use different styles of writing depending on who I'm communicating with (teachers, parents, friends).
In certain situations, it is necessary to not be yourself.
I think the way I portray myself online is different than the way I am in real life.

APPROPRIATION:
I have incorporated other people's creative pieces to create my own piece of art, like mixing music tracks, making an art collage, or stringing together video clips.
I have created something new that incorporates stuff from popular culture, like writing a short story based on a character in Harry Potter, making a fan video, or a music remix.
When doing a creative multimedia project, I don't think it is wrong to take samples from my favorite stars' videos or my favorite artists' songs.
If I would make a fan video about my favorite celebrity or artist or band, they'd probably be happy if they found out about it.

It is important for young people to learn how to adapt stuff from popular culture in their own creative ways.

DISTRIBUTED COGNITION

If I don't know the answer to something, I usually ask people for help.
My environment plays a big part in how smart I am.
I have to keep learning from my surroundings in order to become smarter.
I'm usually pretty good at knowing what to do or who to ask if I want to find out more about a specific topic.
I find it important to use tools like spell check, a calculator, encyclopedia, etc to help me in my learning.

MULTITASKING

I manage to do my homework successfully while doing other things like listening to music or texting friends.
I can usually prevent getting distracted and focus on tasks well when other things are happening around me, like people talking, TV, music, internet, etc.
When I work on the computer, I can concentrate on several applications at once.
Our generation – me and my friends and people our age – are good at multitasking, i.e. doing several things at once.
I don't think anybody should scold me or give me a hard time if I feel I can work on several things at once.

COLLECTIVE INTELLIGENCE

I enjoy working on projects or assignments with people that bring different skills to the table.
When I can't solve a problem or find a piece of information by myself, I use the Internet or social media to connect with others and find what I am looking for.
I enjoy the collaborative aspect of things like Wikipedia, team games, online fan communities, community message boards, etc.
I think I can learn a lot from my friends.
I don't think it's a sign of weakness or stupidity to ask a friend or a classmate with help on homework assignments or other problems.

JUDGMENT

I can effectively determine whether or not the information I find online is correct and reliable.
When I'm interested in a topic, I gather information from a bunch of different sources (like TV, radio, the internet, books etc) to try to get the full picture.
When I search for something online and I get thousands of results, I can effectively decide which ones will be the most useful for me.
I am able to enter the right words in a search engine to find what I am looking for.
I can identify prejudice or bias in media (e.g. racism on certain websites, prejudice against women in song lyrics, etc).

TRANSMEDIA NAVIGATION
I follow my favorite shows, actors, musicians etc across different platforms and media (TV, magazines, internet, Facebook, Twitter, etc).
I can imagine the same story being told in different ways, such as through music, acting, writing, drawing, etc.
If I hear or see something in the news that interests me, I try to see how different news sources tell the story.
If I am curious about something I saw on TV, I will check it out online later.
It makes me happy that I can learn about my favorite things in different ways (on TV, on the internet, on Facebook, etc)

NETWORKING
I think that reading other people's recommendations on sites like Amazon or Yelp is useful in helping me make decisions.
I like to share my creative work on social media sites like Facebook or YouTube or Twitter.
I often share links on Facebook, Twitter, my blog, etc.
When I go online, I want to feel like I am part of a community.
It is important for me to be able stay in touch with my friends online too, and not only in real life.

NEGOTIATION
My experience on the Internet and/or in games has made me more understanding of those that are different from myself.
I think the Internet offers a very important opportunity to get to know people from different backgrounds and different places.
I am happy that I can interact online or on Facebook with people from all over the world.
I have learned something new about another culture from surfing the Internet, playing online games, participating in online communities or forums, etc.
I have learned a lot from people in my community who are different than I am.

VISUALIZATION
I feel I understand things better when I can think of them visually.
I can read about a place and easily picture it in my head.
I think I am pretty good at understanding information from images, graphs, diagrams and other visual tools.
I like the fact that I can see all my friends on my Facebook profile.
I find Google Maps and/or Google Earth to be extremely useful tools.

<u>Part 4: Civic Engagement</u>
I believe I can make a difference in my community.
Being actively involved in national, state and local issues is my responsibility.
I believe that soon I will be able to help solve problems in my community.

I think it is important to stay informed on current events and politics.
I plan to vote as soon as I am old enough.

APPENDIX B:

Reliability Statistics using Cronbach's Alpha (N=108)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.934	.937	60

Reliability - ALL ITEMS in the scale together has excellent reliability at .937

Reliability - PLAY in the "acceptable" range - .74			
	Mean	**Std. Deviation**	**N**
I have taught myself something new on a computer by seeing what happens when I play around with it.	3.92	1.025	108
When I have a new device (like a cell phone or a MP3 player), I like to try out all the buttons to see what they do.	4.22	1.042	108
I have come up with an idea and spent time working to develop it into something.	3.28	1.108	108
When I am faced with a problem, I usually try out a few different ways of solving it before I give up.	3.80	1.013	108
When I get stuck trying to solve a problem, I see it as a learning opportunity rather than a personal failure.	3.55	1.178	108
Reliability - SIMULATION - unacceptable range - barely - at .691			
I try to put myself in other people's shoes to understand their problems or situations.	3.91	.848	107
It is important to have simulations of fire drills, so that people know what to do in a crisis.	4.17	.829	107
When I read a book, I often think about what it would be like to be	4.12	.902	107

those characters.			
I think about the way in which reality is represented in movies with computer-generated simulations, like Avatar, Inception, 300, Sin City, Iron Man, X-Men, etc.	3.44	1.128	107
I would like to participate in a simulation of something, like flying a space shuttle to the moon, or piloting a fighter jet.	3.60	1.155	107
Reliability - PERFORMANCE in the unacceptable range - .678			
I like to be involved in role-playing activities and/or theatre.	3.60	1.105	108
I often take on a different identity in order to experience something new or to solve a problem (online games, role-playing, theatre exercises).	3.33	.997	108
I know that I need to use different styles of writing depending on who I'm communicating with (teachers, parents, friends).	4.12	.963	108
In certain situations, it is necessary to not be yourself.	3.17	1.245	108
I think the way I portray myself online is different than the way I am in real life.	2.81	1.278	108
Reliability - APPROPRIATION in the unacceptable range at .613			
I have used other people's creative pieces to create my own piece of art, like mixing music tracks, making an art collage, or putting together video clips.	3.44	1.138	107

I have created something new that uses stuff from popular culture, like writing a short story based on a character in Harry Potter, making a fan video, or a music remix.	3.00	1.148	107
When doing a creative multimedia project, I don't think it is wrong to take samples from my favorite stars' videos or my favorite artists' songs.	3.35	.955	107
If I would make a fan video about my favorite celebrity or artist or band, they'd probably be happy if they found out about it.	3.64	.956	107
It is important for young people to learn how to adapt stuff from popular culture in their own creative ways.	3.93	.809	107
Reliability - DISTRIBUTED COGNITION in the acceptable range - at .736			
If I don't know the answer to something, I usually ask people for help.	4.03	.818	105
My environment plays a big part in how smart I am.	3.52	.990	105
I have to keep learning from my surroundings in order to become smarter.	3.97	.898	105
I'm usually pretty good at knowing what to do or who to ask if I want to find out more about a specific topic.	4.08	.801	105
I find it important to use tools like spell check, a calculator, encyclopedia, etc to help me in my learning.	4.21	.761	105
Reliability - MULTI-TASKING in the acceptable range at .787			

I manage to do my homework successfully while doing other things like listening to music or texting friends.	4.06	1.037	106
I can usually prevent getting distracted and focus on tasks well when other things are happening around me, like people talking, TV, music, internet, etc.	3.47	1.109	106
When I work on the computer, I can concentrate on several applications at once.	3.96	.952	106
Our generation – me and my friends and people our age – are good at multitasking, i.e. doing several things at once.	3.75	1.161	106
I don't think anybody should scold me or give me a hard time if I feel I can work on several things at once.	3.99	.947	106
Reliability - COLLECTIVE INTELLIGENCE in the acceptable range at .70			
I enjoy working on projects or assignments with people that bring different skills to the table.	3.90	.954	106
When I can't solve a problem or find a piece of information by myself, I use the Internet or social media to connect with others and find what I am looking for.	3.94	.858	106
I enjoy the collaborative aspect of things like Wikipedia, team games, online fan communities, community message boards, etc.	3.66	.976	106
I think I can learn a lot from my friends.	4.04	.852	106

I don't think it's a sign of weakness or stupidity to ask a friend or a classmate with help on homework assignments or other problems.	4.15	1.093	106
Reliability - JUDGMENT in the acceptable range at .744			
I can determine whether or not the information I find online is correct and reliable.	3.78	.822	103
When I'm interested in a topic, I gather information from a bunch of different sources (like TV, radio, the internet, books etc) to try to get the full picture.	3.93	.951	103
When I search for something online and I get thousands of results, I can decide which ones will be the most useful for me.	3.94	.789	103
I am able to enter the right words in a search engine to find what I am looking for.	3.97	.775	103
I can identify prejudice or bias in media (e.g. racism on certain websites, prejudice against women in song lyrics, etc).	3.97	.994	103
Reliability - TRANSMEDIA NAVIGATION in the unacceptable range at .649			
I follow my favorite shows, actors, musicians etc across different platforms and media (TV, magazines, internet, Facebook, Twitter, etc).	3.70	1.132	107
I can imagine the same story being told in different ways, such as through music, acting, writing, drawing, etc.	3.98	.853	107

If I hear or see something in the news that interests me, I try to see how different news sources tell the story.	3.54	.954	107
If I am curious about something I saw on TV, I will check it out online later.	3.93	.850	107
It makes me happy that I can learn about my favorite things in different ways (on TV, on the internet, on Facebook, etc)	4.00	.905	107
Reliability - NETWORKING in the acceptable range at .759			
I think that reading other people's recommendations on sites like Amazon or Yelp is useful in helping me make decisions.	3.57	1.096	101
I like to share my creative work on social media sites like Facebook or YouTube or Twitter.	3.13	1.254	101
I often share links on Facebook, Twitter, my blog, etc.	3.26	1.344	101
When I go online, I want to feel like I am part of a community.	3.26	1.143	101
It is important for me to be able stay in touch with my friends online too, and not only in real life.	3.85	1.134	101
Reliability - NEGOTIATION in the good range at .813			
My experience on the Internet and/or in games has made me more understanding of those that are different from myself.	3.81	.851	108
I think the Internet offers a very important opportunity to get to know people from different backgrounds and different places.	3.81	.964	108

I am happy that I can interact online or on Facebook with people from all over the world.	3.82	1.051	108
I have learned something new about another culture from surfing the Internet, playing online games, participating in online communities or forums, etc.	3.69	.984	108
I have learned a lot from people in my community who are different than I am.	3.99	.947	108
Reliability - VISUALIZATION in the acceptable range at .758			
I feel I understand things better when I can think of them visually.	4.11	.790	104
I can read about a place and easily picture it in my head.	4.02	.783	104
I think I am pretty good at understanding information from images, graphs, diagrams and other visual tools.	3.97	.832	104
I like the fact that I can see all my friends on my Facebook profile.	3.75	1.218	104
I find Google Maps and/or Google Earth to be extremely useful tools.	3.96	.928	104
Reliability - CIVIC ENGAGEMENT in the acceptable range at .778			
I believe I can make a difference in my community.	3.89	.965	107
Being actively involved in national, state and local issues is my responsibility.	3.51	1.102	107
I believe that soon I will be able to help solve problems in my community.	3.73	.967	107
I think it is important to stay informed on current events and politics.	3.93	.876	107
I plan to vote as soon as I am old enough.	3.99	.976	107

APPENDIX C:
NML Total Frequencies (N=108)

NML - PLAY	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Total	
	F	N	F	N	F	N	F	N	F	N	F	N
I have taught myself something new on a computer by seeing what happens when I play around with it.	32.4	35	37.0	40	24.1	26	3.7	4	2.8	3	100%	108
When I have a new electronic device (like a cell phone or a MP3 player), I like to try out all the buttons to see what they do.	49.1	53	30.6	33	14.8	16	1.9	2	3.7	4	100%	108
I have come up with an idea and spent time working to develop it into something, making it a concrete reality.	16.7	18	21.3	23	39.8	43	15.7	17	6.5	7	100%	108
When I am faced with a problem, I usually try out a few different ways of solving it before I give up.	25.0	27	45.4	49	21.3	23	4.6	5	3.7	4	100%	108
When I get stuck trying to solve a problem, I see it as a learning opportunity rather than a personal failure.	25.0	27	30.6	33	27.8	30	10.2	11	6.5	7	100%	108

NML - SIMULATIONS	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Total	
I try to put myself in other people's shoes to understand their problems or situations.	F	N	F	N	F	N	F	N	F	N	F	N
	25.0	27	46.3	50	21.3	23	7.4	8	0.0	0	100%	108
It is important to	43.0	46	40.2	43	12.1	13	4.7	5	0.0	0	100%	107

have simulations of dangerous events like earthquakes or safety evacuations, so that people know what to do in a crisis.												
When I read a book, I often think about what it would be like to be those characters.	42.5	46	38.0	41	13.9	15	4.6	5	.9	1	100%	108
I think about the way in which reality is represented in movies with computer-generated simulations, like Avatar, Inception, 300, Sin City, Iron Man, X-Men, etc.	19.4	21	28.7	31	36.1	39	9.3	10	6.5	7	100%	108
I would like to participate in a simulation of something I cannot experience right now as a student, like flying a space shuttle to the moon, or piloting a fighter jet.	27.8	30	25.0	27	31.5	34	11.1	12	4.6	5	100%	108

NML – PERFORMANCE	**Strongly agree**		**Agree**		**Neutral**		**Disagree**		**Strongly disagree**		**Total**	
	F	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**
I like to be involved in role-playing activities and/or theatre.	25.0	27	28.7	31	29.6	32	13.0	14	3.7	4	100%	108
I often take on a different identity in order to experience something new or to solve a problem (online games, role-playing, theatre exercises).	14.8	16	25.9	28	39.8	43	15.7	17	3.7	4	100%	108

I like to be involved in role-playing activities and/or theatre.												
I know that I need to use different styles of writing depending on who I'm communicating with (teachers, parents, friends).	40.7	44	37.0	40	15.7	17	5.6	6	.9	1	100%	108
In certain situations, it is necessary to not be yourself.	15.7	17	24.1	26	31.5	34	18.5	20	10.2	11	100%	108
I think the way I portray myself online is different than the way I am in real life.	8.3	9	24.1	26	30.6	33	19.4	21	17.6	19	100%	108

NML – APPROPRIATION	**Strongly agree**		**Agree**		**Neutral**		**Disagree**		**Strongly disagree**		**Total**	
	F	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**
I have incorporated other people's creative pieces to create my own piece of art, like mixing music tracks, making an art collage, or stringing together video clips.	22.2	24	28.7	31	30.6	33	13.9	15	4.6	5	100%	108
I have created something new that incorporates stuff from popular culture, like writing a short story based on a character in Harry Potter, making a fan video, or a music remix.	13.9	15	20.4	22	31.5	34	25.9	28	8.3	9	100%	108
When doing a creative multimedia project, I don't think it is wrong to take	13.0	14	28.7	31	45.4	49	9.3	10	3.7	4	100%	108

samples from my favorite stars' videos or my favorite artists' songs.												
If I would make a fan video about my favorite celebrity or artist or band, they'd probably be happy if they found out about it.	17.6	19	40.7	44	31.5	34	8.3	9	1.9	2	100%	108
It is important for young people to learn how to adapt stuff from popular culture in their own creative ways.	26.2	28	43.0	46	29.0	31	.9	1	.9	1	100%	107

NML - DISTRIBUTED COGNITION	**Strongly agree**		**Agree**		**Neutral**		**Disagree**		**Strongly disagree**		**Total**	
	F	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**
If I don't know the answer to something, I usually ask people for help.	31.5	34	50.0	54	15.7	17	0.0	0	2.8	3	100%	108
My environment plays a big part in how smart I am.	17.6	19	33.3	36	37.0	40	7.4	8	4.6	5	100%	
I have to keep learning from my surroundings in order to become smarter.	26.9	29	47.2	51	19.4	21	3.7	4	2.8	3	100%	108
I'm usually pretty good at knowing what to do or who to ask if I want to find out more about a specific topic.	31.1	33	43.4	46	22.6	24	.9	1	1.9	2	100%	108
I find it important to use tools like spell check, a calculator, encyclopedia, etc to help me in my	36.4	39	43.9	47	17.8	19	0.0	0	1.9	2	100%	106

learning.												

NML – MULTI TASKING	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Total	
	F	N	F	N	F	N	F	N	F	N	F	N
I manage to do my homework successfully while doing other things like listening to music or texting friends.	37.4	40	38.3	41	14.0	15	4.7	5	5.6	6	100%	107
I can usually prevent getting distracted and focus on tasks well when other things are happening around me, like people talking, TV, music, internet, etc.	18.7	20	36.4	39	27.1	29	10.3	11	7.5	8	100%	107
When I work on the computer, I can concentrate on several applications at once.	30.8	33	42.1	45	21.5	23	1.9	2	3.7	4	100%	106
Our generation – me and my friends and people our age – are good at multitasking, i.e. doing several things at once.	28.3	30	37.7	40	22.6	24	3.8	4	7.5	8	100%	107
I don't think anybody should scold me or give me a hard time if I feel I can work on several things at once.	30.8	33	43.0	46	20.6	22	1.9	2	3.7	4	100%	107

NML – COLLECTIVE INTELLIGENCE	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Total	
	F	N	F	N	F	N	F	N	F	N	F	N
I enjoy working on projects or assignments with people that bring	25.2	27	46.7	50	22.4	24	.9	1	4.7	5	100%	107

different skills to the table.												
When I can't solve a problem or find a piece of information by myself, I use the Internet or social media to connect with others and find what I am looking for.	27.1	29	42.1	45	26.2	28	1.9	2	2.8	3	100%	107
I enjoy the collaborative aspect of things like Wikipedia, team games, online fan communities, community message boards, etc.	21.5	23	38.3	41	32.7	35	2.8	3	4.7	5	100%	107
I think I can learn a lot from my friends.	32.1	34	43.4	46	20.8	22	1.9	2	1.9	2	100%	106
I don't think it's a sign of weakness or stupidity to ask a friend or a classmate with help on homework assignments or other problems.	47.7	51	31.8	34	13.1	14	1.9	2	5.6	6	100%	107

NML – JUDGMENT	**Strongly agree**		**Agree**		**Neutral**		**Disagree**		**Strongly disagree**		**Total**	
	F	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**
I can effectively determine whether or not the information I find online is correct and reliable.	19.6	21	43.9	47	32.7	35	1.9	2	1.9	2	100%	107
When I'm interested in a topic, I gather information from a bunch of different sources (like TV, radio, the internet,	26.4	28	47.2	50	20.8	22	.9	1	4.7	5	100%	106

books etc) to try to get the full picture.												
When I search for something online and I get thousands of results, I can effectively decide which ones will be the most useful for me.	23.4	25	50.5	54	21.5	23	1.9	2	2.8	3	100%	107
I am able to enter the right words in a search engine to find what I am looking for.	28.0	30	41.1	44	29.0	31	.9	1	.9	1	100%	107
I can identify prejudice or bias in media (e.g. racism on certain websites, prejudice against women in song lyrics, etc).	34.6	36	34.6	36	25.0	26	2.9	3	2.9	3	100%	104

NML - TRANSMEDIA NAVIGATION	**Strongly agree**		**Agree**		**Neutral**		**Disagree**		**Strongly disagree**		**Total**	
	F	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**
I follow my favorite shows, actors, musicians etc across different platforms and media (TV, magazines, internet, Facebook, Twitter, etc).	25.0	27	35.2	38	29.6	32	1.9	2	8.3	9	100%	108
I can imagine the same story being told in different ways, such as through music, acting, writing, drawing, etc.	28.8	31	40.7	44	26.9	29	2.8	3	.9	1	100%	108
If I hear or see something in the news that interests me, I try to see how	13.0	14	38.0	41	38.9	42	3.7	4	6.5	7	100%	108

different news sources tell the story.												
If I am curious about something I saw on TV, I will check it out online later.	26.9	29	41.7	45	27.8	30	2.8	3	.9	1	100%	108
It makes me happy that I can learn about my favorite things in different ways (on TV, on the internet, on Facebook, etc)	32.7	35	37.4	35	29.9	30	0.0	0	1.9	2	100%	107

NML - NETWORKING	**Strongly agree**		**Agree**		**Neutral**		**Disagree**		**Strongly disagree**		**Total**	
	F	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**
I think that reading other people's recommendations on sites like Amazon or Yelp is useful in helping me make decisions.	22.4	24	29.0	31	40.2	43	2.8	3	5.6	6	100%	
I like to share my creative work on social media sites like Facebook or YouTube or Twitter.	14.2	15	30.2	32	34.0	36	6.6	7	15.1	16	100%	106
I often share links on Facebook, Twitter, my blog, etc.	17.9	19	29.2	31	27.4	29	8.5	9	17.0	18	100%	106
When I go online, I want to feel like I am part of a community.	15.4	16	26.0	27	40.4	42	6.7	7	11.5	12	100%	104
It is important for me to be able stay in touch with my friends online too, and not only in real life.	31.4	33	37.1	39	22.9	24	2.9	3	5.7	6	100%	105

NML - NEGOTIATION	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**	**Total**

My experience on the Internet and/or in games has made me more understanding of those that are different from myself.	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**
	23.1	25	42.6	46	31.5	34	0.0	0	2.8	3	100%	108
I think the Internet offers a very important opportunity to get to know people from different backgrounds and different places.	23.1	25	39.8	43	31.5	34	.9	1	4.6	5	100%	108
I am happy that I can interact online or on Facebook with people from all over the world.	29.6	32	32.4	35	29.6	32	2.8	3	5.6	6	100%	108
I have learned something new about another culture from surfing the Internet, playing online games, participating in online communities or forums, etc.	22.2	24	36.1	39	33.3	36	4.6	5	3.7	4	100%	108
I have learned a lot from people in my community who are different than I am.	30.6	33	41.7	45	21.3	23	3.7	4	2.8	3	100%	108

NML - VISUALIZATION	**Strongly agree**		**Agree**		**Neutral**		**Disagree**		**Strongly disagree**		**Total**	
I feel I understand things better when I can think of them visually.	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**
	35.5	38	46.7	50	15.9	17	.9	1	.9	1	100%	107
I can read about a place and easily picture it in my head.	26.9	29	45.4	49	25.0	27	1.9	2	.9	1	100%	108
I think I am pretty	26.9	29	45.4	49	25.0	27	0.0	0	1.9	1	100%	108

good at understanding information from images, graphs, diagrams and other visual tools.												
I like the fact that I can see all my friends on my Facebook profile.	32.1	34	30.2	32	24.5	26	3.8	4	9.4	10	100%	106
I find Google Maps and/or Google Earth to be extremely useful tools.	31.8	34	36.4	39	29.0	31	.9	1	1.9	2	100%	107

NML – CIVIC ENGAGEMENT	**Strongly agree**		**Agree**		**Neutral**		**Disagree**		**Strongly disagree**		**Total**	
I believe I can make a difference in my community.	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**	**F**	**N**
	28.0	30	42.1	45	24.3	26	1.9	2	3.7	4	100%	107
Being actively involved in national, state and local issues is my responsibility.	19.4	21	31.5	34	38.0	41	2.8	3	8.3	9	100%	108
I believe that soon I will be able to help solve problems in my community.	22.2	24	38.9	42	32.4	35	2.8	3	3.7	4	100%	108
I think it is important to stay informed on current events and politics.	29.6	32	37.0	40	30.6	33	1.9	2	.9	1	100%	108
I plan to vote as soon as I am old enough.	36.1	39	33.3	36	25.9	28	1.9	2	2.8	3	100%	108

Appendix D: Demographics of Sample

The following tables illustrate the descriptive analyses on all categorical demographic survey items for the demographic factors, including age, gender, year in school, after school chapter, primary language spoken in the home and parents education. Of the 108 respondents, (see Table A), 100% were female, as we only administered the survey to an all girls after school organization. Of the 108 female respondents, 64.2% (n=70) were age 13 and 27.5% (n=30) were 14, 6.4% (n=7) reported being 15 and 1% (n=1) was 16 and 1% (n=1) was 17. The majority of the girls that participated were from the larger Girls Inc. chapter, at 76.9% (n=83) and 23.1% (n=25) from the smaller chapter.

Table A:
Gender and Age Reported by Girls Inc. Participants (N=108)

Gender	**Percent**	**N**
Female	100%	108
Age	**Percent**	**N**
13	64.2%	70
14	27.5%	30
15	6.4%	7
16	0	1
17	.9%	1
18	.9%	
Total	100%	109

Participants from the larger chapter and the largest program (see Table B), Teen's Innovate made up 77.8% (n=84). The second largest program, Teen Build It, made up 19.4% (n=21) and the remaining respondents reported being participants of Teen Summit at 10.2% (n=11). The participants from Teen Summit, a program run by the smaller chapter, make up the second program for qualitative analysis, with an age range of 14-16. The majority of girls, 48% (n=52) reported being in 8th grade, again the grade they start the Teen's Innovate program, 29 % (n=32) were in 9th grade and 6.5% (n=7) were in 10th grade, making up the population of girls involved in Teen Summit.

Table B:
Program and Grade Level Reported by Girls Inc. Participants (N=108)

Girls Inc Chapter	**Percent**	**N**
Island City, Alameda	23.1%	25
San Leandro	76.9%	83
Total	100%	108

Girls Inc Program	**Percent**	**N**
Teen's Innovate!	77.8%	84
Teen Build It	19.4%	21
Act/Heart	0.0%	0
College Bound Program	0.0%	0
Teen Summit	10.2%	11
Other after school program	1.9%	6
Total	100%	108
What year of school are you currently attending?	**Percent**	**N**
6th grade	3.7%	4
7th grade	10.3%	11
8th grade	48.6%	52
9th grade	29.9%	32
10th grade	6.5%	7
11th grade	0.0%	0
12th grade	0.9%	1
Total	100%	107

Next, I was interested in the primary language spoken in the home to gain further insight about their home influence, (see Table C). English was reported by 59.3% (n=64) as the primary language and 34.3% (n=37) reported Spanish as the primary language. The remaining reported Chinese at the primary language at 5.6% (n=36) and 1.9% (n=2) reported Vietnamese as their primary language.

Table C:
Primary Language Spoken In the Home by Girls Inc. Participants (N=108)

Primary Language spoken in your home.	**Percent**	**N**
English	59.3%	64
Spanish	34.3%	37
Chinese	5.6%	6
French	0.0%	0
Korean	0.0%	0
Russian	0.0%	0
Tagalog	0.0%	0
Vietnamese	1.9%	2
Other		1
Total	100%	108

Lastly, I asked for the respondent's parent's highest level of education, (see Table D). Respondent's reported some high school for mothers at 20.6% (n=22) and fathers at 30.5% (n=32). They reported high school completed by mothers at 24.3% (n=26) and fathers at 30.5% (n=32). The remaining 50% for each category was spread between some college and a four-year college for both mothers and fathers.

Table D:
Parents Highest Level of Education Reported by Girls Inc. Participants (N=108)

Mother's highest level of education completed.	**Percent**	**N**
Some high school	20.6%	22
High school	24.3%	26
Some college	15.9%	17
Two-year college	8.4%	9
Four-year college	15.9%	17
Master's degree	8.4%	9
Doctoral degree	0.0%	0
Professional degree (MD	0.0%	0
None	6.5%	7
Total	100%	107
Father's highest level of education completed.	**Percent**	**N**
Some high school	30.5%	32
High school	30.5%	32
Two-year college	8.6%	9
Four-year college	12.4%	13
Master's degree	2.4%	3
Doctoral degree	1.9%	2
Professional degree (MD	0.0%	0
None	13.3%	14
Total	100%	105

Appendix E: Qualitative Codes

1. **Activity**
   - Direct topical instruction
   - Pre-writing activities
   - Topic
   - Web-based resources
2. **Artifacts**
3. **Community Involvement**
4. **Context setting**
5. **Cultural History**
6. **Cultural Identity**
7. **Direct Assignment**
8. **Documentation**
9. **Female Identity**
10. **Great Quotes**
11. **Guided Response**
12. **Identity Reflection**
13. **Inquiry**
14. **Interpretation**
15. **Media generated female perception**
16. **Mentoring**
17. **Motivation**
18. **Personal Experience**
19. **Reflection**
20. **Research Involvement**
21. **Research observation**
22. **Tools**
23. **Web-based Examples**
24. **NML Skills/21st Century Skills**
    - Appropriation
    - Collective Intelligence
    - Community Involvement
    - Distributed Cognition
    - Judgment
    - Multi tasking
    - Negotiation
    - Networking
    - Performance
    - Play
    - Simulation
    - Trans-media Navigation
    - Visualization