Collaboration, Computation, and Creativity: Media Arts Practices in Urban Youth Culture

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Abstract: The focus of this paper is to turn our attention to the arts as an understudied area within the computer-supported collaborative learning community and examine how studying the learning of arts and programming can open new avenues of research. We document, describe, and analyze urban youths' media arts practices within the context of the design studio, particularly by focusing on how collaboration, computation, and creativity play out within this context. We utilize a mixed methods design that draws upon three approaches: (1) participant observations; (2) media arts object analyses; and (3) comparative in-depth case studies. Aspects of new literacy studies, social theories of literacy, and situated learning guide the methodology and interpretation in this study. Media arts projects like these are not well understood in the research literature but have the potential to teach us about learning and literacy in the age of multimedia.

Introduction

Researchers interested in computer-supported collaborative learning have paid little attention to the field of arts and design education as the more prominent focus has been on science, mathematics and to a lesser degree, social studies and language arts. Among a number of reasons that can explain this absence of interest is the lack of new technologies in the arts education curriculum. Recently, the Arts Education Partnership (AEP) issued a call for research to further investigate 'New Technologies and Arts Learning,' noting that "[n]ew technologies…are changing the nature of arts education" (AEP, 2004). The intersection of arts and technology (called "media arts" here) is a relatively new field that has implications for both the arts and computer sciences, and more generally, the role of digital media. The focus of this paper is to turn our attention to the understudied area of media arts and examine how media arts practices, collaborative support, and creative expression evolve within an inner-city design studio.

A design studio found at a Computer Clubhouse in South Central Los Angeles offers a promising opportunity to explore the ways in which youth culture is already making use of new media as tools for communication and expression, particularly capitalizing on software that allows designers to use computation or computer programming. Youth in the Clubhouse engage in applications that encourage skills beyond typing and general computer familiarity, allowing participants to use various forms of media art as tools for expression. "Media art" is used here to encompass all forms of creative practice involving or referring to art that makes use of electronic equipment, computation, and new communication technologies (Muchnic, 2005; Poissant, 2005). The personal access points, appropriation of digital media for personal and creative expression, and the role of social support in the making of media art projects like these are not well understood in the research literature. However, they offer promising opportunities for how youths' media culture and media arts practices can be used to support expanded views of literacy, learning and expression, which are more open to new technologies, respond to new media, and extend the typical classroom.

The focus of this study is to document, describe, and analyze urban youths' media arts practices within the context of the design studio, particularly by focusing on how collaboration, computation, and creativity play out within this context. We define "media arts practices" as the means by which one engages in media art and the reasons and motivations for doing so. To investigate the aforementioned goals, we are utilizing a mixed-methods design that draws upon three primary approaches: (1) participant observations, (2) media arts project analyses, and (3) comparative in-depth and longitudinal case studies. For the purposes of this paper, we focus on findings from one of our case studies. Our methodology and interpretation in this study are guided by social theories of literacy (Barton & Hamilton, 2000), new literacy studies (Buckingham, 2003; Gee, 2003; Lankshear & Knobel, 2003), and discipline-specific theories of situated learning.

Background

Today, literacy can be broadly defined as including any type of communicative interaction involving speaking, reading, listening, and writing with text in print and non-print forms (Hagood, Stevens, & Reinking, 2002). Those interested in looking at expanded notions of literacy within youth cultures have found it useful to apply a social theory of literacy (Barton & Hamilton, 2000; Moje, 2000). Commonly, this group of scholars posits that literacy is best understood as a set of social practices, which can be inferred from events and mediated by written, visual, and other types of texts (Barton & Hamilton, 2000). Hence, the basic unit of a social theory of literacy is that of literacy practices, defined as the general cultural ways of utilizing language (Barton & Hamilton, 2000). Although practices are not observable units of behavior, since they also involve values, attitudes, feelings, and social relationships, one can observe "literacy events" being mediated by texts (Barton & Hamilton, 2000). By introducing media arts practices, we are trying to broaden our view of literacy practices to describe the ways in which individuals use literacy and learn to be literate within the specific context of new media.

As the title of our paper suggests, we are focusing on three aspects that we feel are particularly important to media arts practices: computation, collaboration, and creativity. Computation draws our attention to the role that technology and computer programming plays in the media arts practices. Programming in this context is less about code and more about creativity or personal expression. While case studies of work in the design studio give us only a partial understanding of the larger design culture, they do provide us with an understanding of how individuals are able to repurpose the design environment for personal expression. Collaboration within this context takes on many forms. The design studio environment emphasizes the social context of media arts practices, which sets the stage for peer to peer and member to mentor types of collaborations.

Tracking Development: Brandy

Brandy is a nine-year-old, African-American girl that is a regular member of the Computer Clubhouse, attending 2-3 times per week over a four-year period. At school, Brandy self-reports that she was nicknamed "special ed" by her friends and often talks about how she's teased frequently by others in class. She struggles in school, especially in core subject areas such as reading and mathematics. As Brandy enters the fourth grade, she is unable to read more than a handful of words, which include her name and at times, Brandy is unable to recognize simple three letter words like "you". Consequently, we would characterize Brandy as being pre-literate in a traditional sense. At home, Brandy has a supportive, large extended family consisting of many cousins. Although not a representative example of Clubhouse youth, Brandy's case presents an opportunity to take a closer look at literacy and learning.

The first literacy event important to tracking Brandy's development occurred when Brandy chose to open computer-programming software for the first time in October 2004. This took place through her work with a mentor as a more expert computer resource, standing in opposition to Brandy's unwillingness at the time to work with other members. In Brandy's first exposure to computer programming, she was drawn to the cat that appears as the first Sprite at the start of any new project. Brandy created a storyline about this character that evolved into her first project. Drawing on her knowledge of Tom & Jerry cartoons, she added a mouse for the cat to chase and a house for the mouse to safely hide. Notably during this first session, Brandy had very little interest in programming. Instead she was satisfied to move the characters as she was talking, somewhat akin to older forms of media like the Color Forms or moveable stickers that were popular toys in the 1980s.

Nearly a year and a half later, Brandy has become known for computer programming projects, even developing a particular style. In April 2006, Brandy designed a birthday card for the Clubhouse Coordinator along with one of her peers (as well as a mentor). In this project, Brandy took the lead, programming three Sprites including a cookie, milk, and some stars. She programmed the three objects to spin and change color using programming concepts like loops and conditionals. Although she didn't explain why she's doing what she's doing to the others, she did make an attempt to teach them by a visual demonstration. Despite Brandy's ability to do sophisticated work on the computer (and was now in many ways technologically fluent), Brandy was still unable to read at grade level and had very much stayed at the same level in both reading and writing.

Discussion

In our discussion, we come back to the three central themes of the paper: Collaboration, computation, and creativity in media arts practices of urban youth. From the case study, we learned that computer programming or computation could be embedded and used in many ways. Brandy's case illustrates that computation can be used as a way to tell stories or to create personally meaningful artwork in the case of the birthday card. Computation is also a learned skill that becomes useful as youth, even those like Brandy that are unable to read, can use for creative production. Although further study is needed, Brandy seemed to have navigated the programming environment by memorizing a subset of commands to find them visually on the screen. In this case, having more than one semiotic system at play can be useful. Brandy seemed to use shape, color, text, and trial and error to memorize and recall the commands that she needed for her projects. Collaboration seemed to be a critical component in the media arts practices at this design studio. Youth not only learned about computer programming from their social participation but they also became motivated by collaborating with peers and mentors to create and share work. As many other researchers have noted, having an audience for the media artwork is key to production. In this case study, we see that collaboration is an indicator of more advanced membership in the community. Brandy only moves to production and computer programming because of the suggestion made by the mentor. Brandy in turn, as she became a more expert programmer takes the lead to introduce and teach others to program. This highlights the importance of collaborative exploration in informal learning environments as it augments Brandy's role at the Clubhouse and deepens her knowledge of computer programming. Creativity in this context can take on a variety of forms. Most importantly we feel that youth were able to creatively insert themselves and their interests into their media artwork. In the case of Brandy's artwork, her personal style and the inspiration for the work reflected Brandy's interest in cartoons and her personal connection to the Clubhouse mentor. Opportunities such as the ones presented in this paper, are particularly important for urban youth who are often seen as pushing new adaptations and transformations of media but are also perceived as standing on the sidelines of technology development and production.

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