TECHNOLOGY IN EDUCATION

JOURNAL OF EDUCATION

Founded in 1875

Volume 193 • Number 2 • 2013

Editorial Policy

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"We txt 2 sty cnnectd": An African American Mother and Son Communicate: Digital Literacies, Meaning-Making, and Activity Theory Systems

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I text because it is a way for me to be with my mom. (Gerard)

We text to stay connected . . . to spend time without us interfering in each other's space. (Larnee)

ABSTRACT

This research demonstrated how an African American mother and son communicated with each other via texting and instant messaging (IM) at home. Data from a 2007 larger ethnographic case study of a family's digital literacy practices were collected and analyzed. Situated within the framework of New Literacy Studies and multimodality, this research explored: a) how and why an African American mother and son communicated through texting and IM, b) how this family drew on multimodal meaning-making resources, and c) how texting and IM between these family members demonstrated the potential to change the perceptions of literacy researchers regarding the dynamics of family structures.

INTRODUCTION

This article focuses on the ways an African American mother and son communicated via digital literacies and how their use of texting and IM shaped their family's relationships. I define *digital literacies* as multiple and interactive practices, mediated by technological tools such as the computer, cell phones, and video games that involve reading, writing, language, and exchanging information in online environments (Lewis, 2009). Grounded in previous research on family literacies (Cairney & Ruge, 1998; Edwards, Pleasants, & Franklin, 1999; Heath, 1983; Rogers, 2002; Taylor, 1983; Taylor & Dorsey-Gaines, 1988) and the burgeoning study of digital literacies, this study is guided by the following more specific inquiries: a) How and why do an African American mother and son text and IM each other? b) How does this family draw on multimodal meaning-making resources? c) How might texting and IM between family members change the dynamics of family structures?

Engaging in digital literacy practices in the Ali household (all names are pseudonyms) required skill, creativity, and collaboration. Larnee Ali, a divorced African American mother of four sons, who was in her mid-30s, and Gerard, her nine-year-old son, relied on various forms of interaction with digital tools on a daily basis. Most of their digital literacy practices consisted of texting and IM,

troubleshooting, creating blogs, and designing digital comic strips. Larnee and Gerard's words, quoted at the beginning of this article, suggest that connecting with digital tools was a source of bonding and spending quality time together. Their words also suggest the changing times and views of literacies in family literacy research. Larnee explained the affinity she shared with Gerard for digital literacies and their daily co-participation in digital activities. Their actions show the idiosyncratic ways that some families communicate in today's digital world. Hence, Larnee and Gerard determined and defined the meaningful, cultural, and authentic literacy practices in their lives.

My shared and distant experiences with Larnee suggested that a family's digital literacy practices vary based on the need and desire for these tools, but our experiences also allow us the ability to connect and engage with digital literacies as key components of life. As documented in this study, families still use literacy for a wide variety of purposes, audiences, and situations (Cairney & Ruge, 1998; Compton-Lilly, 2003; Edwards, 2004; Edwards, 2010; Edwards, Pleasants, & Franklin, 1999; Heath, 1983; Rogers, 2002, 2003; Taylor, 1983; Taylor & Dorsey-Gaines, 1988), but today's families' literacy skills and practices are "multiple and travel between sites" (Pahl & Rowsell, 2006, p. 9). They are constantly evolving, shifting, and weaving families' identities, values, languages, and experiences through the digital and multimodal. These data, collected from a larger ethnographic case study, represent an African American mother and son's digital literacy practices (Lewis, 2009, 2010a, 2010b, 2011) and highlight how texting and IM between Larnee and Gerard introduced innovative communication practices that extended family dynamics and structures.

THEORETICAL PERSPECTIVES AND RELEVANT LITERATURE

New Literacy Studies and Multimodality

This study was framed within the notion that literacy extends beyond language, is not the same in all contexts, and is a collection of social practices (Barton & Hamilton, 1998; Barton, Hamilton, & Ivanic, 2000; Gee, 1996; Heath, 1983; Street, 1995, 2003). Researchers who conduct "new literacy studies" (NLS) offer a body of scholarship across a range of social, cultural, historical, and political situations, contexts, and practices. The NLS perspective suggests that literacy is more than simply reading and writing; literacy is a way of acting, knowing, valuing, believing, learning, and using multiple tools and technologies (Gee, 2010; Street, 2003). The process is inseparable from the practices and is connected to other tools. For instance, typing on a computer is a literacy event

situated in time and space; however, going online to check and respond to emails, to peruse, and to post responses on social networking sites (i.e., Facebook and Twitter) opens up other spaces and identities that infuse social practices in different domains or spaces in life (Pahl & Rowsell, 2011).

Being literate in most families today means engaging in digital literacy practices that involve various multimodal modes and expressions that include linguistic as well as gestural and meaning-making processes (Jewitt & Kress, 2003; Norton-Meier, 2005). Using these multimodal connections, researchers are able to understand more completely how video games, cell phones, the Internet, digital books, and texting and instant messaging, for instance, involve semiotic systems (signs and symbols) (Kress & van Leeuwen, 2001).

Multimodality offers opportunities to explore how individuals communicate using a range of different modes (visual, gestural, linguistic, auditory, and spatial) to make and create meaning. According to Kalantzis, Cope, and Cloonan (2010), "meaning making in the digital communications environment of the 21st century is being transformed" (p. 62). Activities involve multiple modes—sometimes simultaneously—and all are important for communication and meaning making. For example, we use our digital phones (aside from talking) for sending pictures, sending texts, recording video, and posting images—all in record time. We use these forms of multimodal expressions to respond to others and communicate our ideas.

In addition, our meanings are based on our understanding of how to make sense of each practice within the social environment (Kress, 2003). It is important to clarify how activities are embedded (and interpreted) within conventional ideas about what is an "appropriate" social practice. For instance, a parent sending a text to a child setting a curfew may not be effective, but texting "I love you" to a child displays a wonderful term of endearment. In addition, when someone sends a text, the "typical" response is to reply with a text, rather than calling the individual. These examples signify that there are unwritten rules that guide our use of the tools that are part of social and multimodal practices.

In a twenty-first-century digital world where individuals compete for accessibility and socialization, vis-à-vis digital tools, research has emerged to indicate how individuals interact with digital literacies. A number of researchers have explored media-related literacy practices in school and community contexts. These studies examine topics such as digital literacies (Bruce, 2002; Hagood, 2000; Joaquin, 2010), instant messaging (Jacobs, 2006; Lewis & Fabos, 2005), multimodalities that individuals use on a daily basis in online communities (Rowsell & Burke, 2009; Vasudevan, DeJaynes, & Schmier, 2010), and pop culture and adolescents' use of online literacies (Alvermann, 2002, 2008, 2010; Cammack, 2002; Chandler-Olcott & Mahar, 2003; Kirkland, 2009; Mahar, 2002). However, there is still a limited amount of research that focuses on family literacy and digital literacy practices, specifically, how they contribute to the increasing technological demands of the home and the larger world, and influence how families talk, think, value, and identify themselves when engaging in the use of technologies.

Family Literacy Studies

Considerable work on family literacy practices has recognized how these practices are situated in the home (Cairney & Ruge, 1998; Edwards, 2004; Edwards, et al., 1999; Heath, 1983; Rogers, 2002; Taylor, 1983; Taylor & Dorsey-Gaines, 1988). Taylor (1983) originated the concept of *family literacy* in her dissertation study, even though she did not use the specific term. She examined a family's "literacy styles and values" (p. 20) within the context of a study of parents and children. Subsequent studies identified the discursive and literacy patterns of families, the dichotomies between homes and schools, and how families from marginalized socioeconomic spaces were perceived (Compton-Lilly, 2003; Lareau, 1989; McCarthey, 1997; Morrow, 1995a; 1995b; Purcell-Gates, 1995; Rogers, 2003). Later studies associated family literacy with the ways individuals "learn and use literacy in their homes and community lives" (Crawford & Zygouris-Coe, 2006, p. 261). Earlier and later researchers also examined the significance of diversity and culture in family literacy (Auerbach, 1989, 1995; Cairney 1997, Cairney & Ruge, 1998; Compton-Lilly, Rogers, & Lewis, 2012; Gadsden, 1995, 2004). The work of these family literacy scholars has had profound influence on the ways we identify the nature, function, and significance of family literacy practices in the home.

Family literacy research has only recently begun to address the significance of digital literacies. In *The Smith Family's 85th Birthday Special Report Series* (2008), it is stated:

> [A]t the family and community level, the goal is to increase *connectedness* in both the physical and virtual sense, (e.g., connectedness between family members, between families and communities, and between individuals and information resources). The key focus here was on the engagement of disadvantaged and marginalized groups in order that they may participate more fully both from a social and economic perspective. (p. 9) (emphasis in the original)

Within this focus, some studies have contributed to our understanding of the ways families have used various forms of digital tools to interact with others to enhance literacy learning among its members, from young children to adults.

Snyder, Angus, and Sutherland-Smith (2002) examined the use of information and communication technologies (ICT) in low-income homes and documented how families' lifestyles, values, and norms varied. The particular focus was on students' learning. In addition, Marsh's (2006, 2011) and Marsh and Thompson's (2001) research with younger and older children with regard to popular culture and media texts, out-of-school techno-literacies, and literacy practices in a virtual world revealed the multiple ways families interacted with digital literacies to maintain an "online interaction order" (Marsh, 2011, p. 101). Other studies have focused on how families drew on multimodal modes to participate

in the transformation of meaning-making processes, and the effect on young children's metacognitive development (Stein & Slonimsky, 2006; Wolfe & Flewitt, 2010). Norton-Meier (2005) examined her role as a learner, troubleshooter, and strategizer to handle problems that arose when playing video games with her husband and adolescent children. These studies provide evidence of the ways new digital tools create meaning and are embedded in the lives of individuals and families.

Fortunately, some research highlights families' digital literacy practices through diverse lens. Ba, Tally, and Tsikalas (2002) examined nine low-income and ten middle-income African American and Latino families and their use of home computing practices that influenced and shaped their social, technological, and school environments. Hawisher, Selfe, Moraski, and Pearson (2004) explored how an African American woman and a European American woman's acquisition and development of technologic competence, through literacy narratives, influenced their literate lives.

While the cited research helped shape my thinking about this topic, I found little research on how digital literacy practices, such as texting and IM, and the growing dependence upon multimodal communication systems, affect a family's use of such literacies. To fill this gap, I initiated this investigation of how an African American mother and son's digital literacy practice of texting and IM helped them to make sense of their lives. The findings demonstrate how family communication through digital tools enhanced learning and provided new insights regarding family literacy in today's digital society. Since a primary focus was on the use and practice of texting and IM, I discuss how this digital practice became a form of popular culture in our society.

Texting and IMing As Popular Culture Literacies

Within the past decade, the use of texting and IM has increased, turning this practice into a popular trend in mobile communication to include components of reading and writing, including vocabulary development, particularly among adolescents and older family members. As a result, texting and IM are important tools to explore in literacy research (Drouin, 2011; Drouin & Davis, 2009; Jacobs 2006, 2008; Lenhart, Ling, Campbell, & Purdell, 2010; Lewis & Fabos, 2005; Reardon, 2008). According to the Pew Research Center's Internet & American Life Project (2010), 87% of individuals use text messaging on regular basis, and these numbers continue to increase. Texting also has the potential of extending the dynamics of family structures. While texting can take away the face-to-face communication in the home, over 98% of parents stated that the primary reasons their child has a cell phone are safety and the convenience of reaching the child at a moment's notice (Pew Research Center's Internet & American Life Project, 2010).

In addition to texting, research shows that IM has also become a rapidly growing activity (Jacobs, 2006, 2008; Lewis & Fabos, 2005). Instant messaging entails real-time, private exchanges of typed text between two individuals via the Internet. However, some teachers and parents have misinterpreted IM because they think that this practice is inconsistent with the new literacies (Jacobs, 2008). Vygotsky (1978) and Rogoff (1990, 2003) have noted that individuals learn effectively when they are engaged in practices within a community where they are valued and appreciated. Research has examined how adolescents' engagement in IM helped shape their social identities (Lewis & Fabos, 2005). Jacobs (2006) discovered the ways adolescents' use of IM and its meanings applied to literacy learning between IM and formal writing in-and out-of-school literacies. In discussing IM and its relationship to literacy, Lewis and Fabos (2005) stated, "IM motivates young people to engage in decoding, encoding, interpretation, and analysis, among other literacy processes, and yet very little empirical work has focused on this form of digital literacy" (p. 473). Among those who have studied this topic is Jacobs (2008) who examined the benefit of IM as a way for adolescents to "build the skills, attributes, and achievements that position them for participation in a fast capitalist information economy" (p. 204)—for example, the rapid intensity of purchasing products for consumption. Jacobs' work demonstrated how an adolescent female became proficient in writing at school because IM was a part of her range of literacy practices.

While teens still choose to communicate via email for school and personal matters, when sending casual written messages quickly to friends and family members, "online instant messaging is clearly the mode of choice for today's online teens" (Lenhart, Madden, & Hitlen, 2005, p. ii). Texting and IM are two of the most frequent communication activities among adolescents/teens and family members. This finding suggests that it is important to investigate ways to "reconceptualize literacy in digital mediated times" (Cohen & Cowen, 2010, p. 50). Therefore, I argue that texting and IM between a mother and her son must be considered of paramount importance to understanding the dynamics of communication using these tools. In the section below, I explain my research methods.

METHODOLOGY

Participation Selection and Stories

As a reading specialist at an after-school program, for over two years, I taught three of Larnee Ali's sons. I identified the Ali family for study after Gerard and I began to converse about his fascination with print and digital comic strips. In addition, Larnee was the sole initiator of digital literacy practices in the home. Based on the criteria of family access to, and participation with, digital tools on a daily basis, and my rapport with the family, I chose the Alis because of the ways in which digital literacy practices were embedded in their lives. An in-depth understanding of digital literacies within this family provided a unique and complex portrait of family literacy practices. In the sections below, I introduce Larnee and Gerard and tell their personal stories.

Larnee's story. Larnee is one of 19 siblings, a divorced mother of four, in her mid-30s. Born with epidermolysis bullosa (EB) (a rare skin disease), Larnee is physically limited in obtaining and holding a job for an extended amount of time. She is a recipient of Supplemental

Security Income (SSI) via the Social Security Administration (SSA), and has attempted to obtain her G.E.D. In addition, she is a survivor of childhood physical and sexual abuse. Her attraction to technological tools, as a child, provided an escape from this abuse and the lack of parental involvement in the home. Television, phones, and pagers became her "family," unlike her natural family. Her childhood room became an oasis of creativity, peace, and contentment because of the presence of technological tools. Despite her arduous past, she has now become what I call an *initiator of digital tools*, one who takes digital tools and introduces them into a practice—to start a chain reaction. Within this role, she frequently connected and interacted with her sons around digital literacies which defined for her a sense of awareness, agency, and apprenticeship to identify how digital literacies helped her make sense of her life (Lewis, 2009, 2010a, 2010b, 2011).

Gerard's story. Gerard is a middle son in a family of four boys. He is nine years old and attends a public school where he is an A to B student. Gerard completed standard academic and psychological testing in 2005 that diagnosed him with attention deficit hyperactivity disorder (ADHD). He took medication that addressed his inattentive behavior of not focusing or concentrating on tasks at home and school. Gerard and his brothers were picked up from school every day to go to the after-school program and stayed there until it closed at 7p.m. His love for digital literacies grew in his own home. He spent hours engaging in digital literacy practices, such as designing a digital comic strip, playing The Sims 2 videogame with his cousin, or blogging and texting/IM with his mother.

Context. The primary site of the data collection was Larnee's bedroom where the only computer in the home was located. Used for game playing, computer/Internet use, communication, and enjoyment, Larnee's bedroom was layered with artifacts that made sense to her. Figure 1 displays a blueprint of the room as a context

Figure 1. Blueprint of Larnee's Bedroom

that the family understood to be a place that was walked through, lived in, and experienced, and where learning and interaction took place over time (Comber, Thompson, & Wells, 2001; Pahl & Rowsell, 2010).

Data Collection and Analysis

Data were collected in the Ali's home for a year, with intense collection occurring over a three-month period, from July to October 2007. Qualitative data collection methods and materials included audio and video recorded structured, semi-structured, and unstructured interviews; participant observations; a guided "digital walk" (a guided tour to locate all of the digital tools in the home); digital photos; email discussions; transcriptions; and artifacts, such as Gerard's report card and illustrations, and Larnee's essays prepared for her G.E.D. classes. Field notes provided relevant segments of digital literacy practices in the home. Interviews were conducted at the beginning and end of the collection phase for an average of 60–90 minutes with Larnee, and 30–60 minutes with Gerard, with frequent breaks as needed.

Data analysis occurred continually and recursively across phases of the study to locate gaps and patterns in the data. Interview transcripts, audio/videotapes, and field notes were analyzed with and without the audio to identify themes and patterns in the data, and an "open coding" scheme was developed to code transcripts (Miles & Huberman, 1994). Color-coding was also used for each research question and inquiry.

Data were analyzed based on Activity Theory (Engeström, 1987, 1999; Vygotsky, 1978) in order to examine the structure of human activity in the home. This theory accounts for how individuals mediate multiple environments, communities, artifacts, etc., within an activity system. The theory allows the researcher to explain the tensions and contradictions that arise within each element of the activity system in order to "understand everyday practice in the real world [as an] objective of scientific practice . . . the object of activity theory is to understand the unity of consciousness and activity" (Nardi, 1995, p. 3). Activity theorists suggest that technology use can be viewed as an "activity situated within communities of practice or activity systems" (Chandler-Olcott & Mahar, 2003, p. 361). In fact, Wenger (1998) argues that, "Having a tool to perform an activity changes the nature of that activity," and that "participating in the changed activity always changes the members of the community" (p. 59). For initial analysis, I explored and charted how this family utilized digital literacies in the home, and how those tools were used within seven activity systems (subject, artifacts/tools, object, rules, community, division of labor, and outcome) as described below.

Activity theory provided a reputable lens to explore digital literacies as social practices because it offered a heuristic framework of activity and thinking about the "interconnection of modes" while calling into attention meaning making (Jewitt, 2006, p. 23). Activity Theory is situated in a Cultural-Historical Activity Theory (CHAT) approach to learning and is based on Vygotsky's theory of learning as a socially constructed activity. This method was used to

Figure 2. Seven Activity Systems

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Center for Activity Theory and Developmental Work Research (2003–2004)
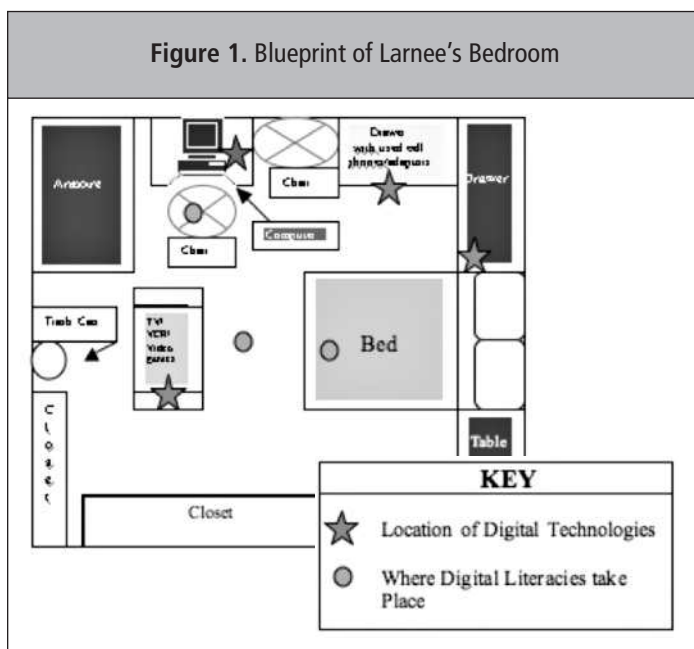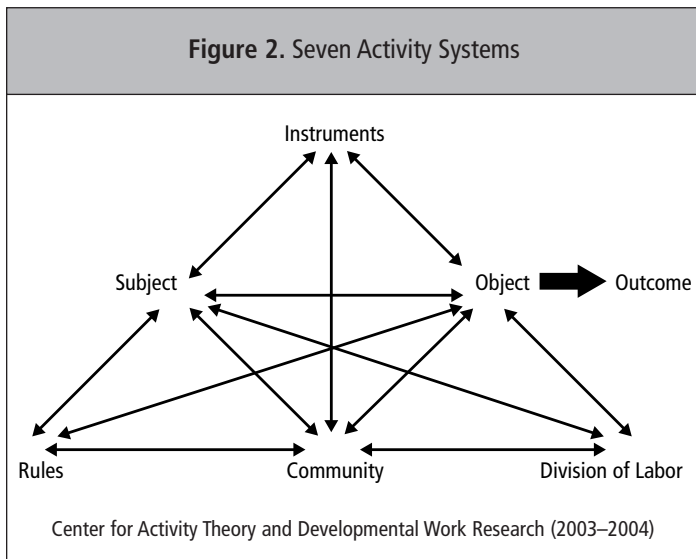
examine the relations between objects, tools, and signs, that is, exploring how an individual's interaction with mediating tools (e.g., computers, cell phones, communication)—physical or mental—can achieve a particular outcome (see Figure 2).

Figure 2 presents an extended model of the seven activity systems. The *subject* (human agent) is the person for whom the activity was created or the person undertaking the activity; the subject is usually the point of focus in the analysis. The *object* (problem or purpose) refers to the "raw material" or "problem space" where the activity was motivated, directed, or given a shape "that meets a human need," and that played a role in the *outcome* (Center for Activity Theory and Developmental Work Research, 2003–2004). These *activities* are mediated by the *artifacts,* (instruments/tools), that have a profound impact on the subject's thinking and experience during the activity. The activity is also mediated in the context of the *community* where the activity was carried out (Lloyd & Cronin, 2002). In any activity there may be constraints based on what an individual can or is permitted to do that determine what *rules* were made, and what *division of labor* (roles) should be taken that mediate the interaction in the activity system.

Multimodal discourse analysis (MMDA) draws on the multi-modality of mediated actions outside of spoken language that carry meaning (e.g., gestures, visuals, sounds, etc.) (Kress & van Leeuwen, 2001; Scollon & Levine, 2004). The use of MMDA was based on the assumption that meaning is made, interpreted, distributed, and received through many representational and communicative modes (Kress & Jewitt, 2003). Each practice that Larnee and Gerard engaged in recruited multiple modalities that communicated unique kinds of meaning. I argue that one cannot fully understand a practice (e.g., playing videogames, IM, texting) unless one is able to read the signs of how meaning making is construed. I used MMDA to prepare a table to provide a condensed version of Larnee and Gerard's texting and IM (see example in Table 1).

Using tools from MMDA I modified Wohlwend's (2007, 2009) table to describe how Larnee and Gerard used texting and IM as means for social interaction through the use of a cell phone and computer. I chose relevant data to document how the use of texting and IM was significant and influenced their relational practices. I labeled column one, *Scene*, to represent each interaction. The second column, labeled *Time*, shows the quick turn of events within each activity (e.g., the time Gerard used to read the IM while Larnee texted). I labeled column three *Moment-to-Moment Action/Context* to describe the action that occurred when Larnee and Gerard texted and IM'd (e.g., Larnee texting with one hand and drinking soda with the other hand). The fourth column highlights the *Talk at Each Turn/Verbal Discourse* (e.g., quotes from participants) and the fifth column, *Effect on Action/Practice*, describes the ways Larnee and Gerard's digital literacy practices made an impact on each other (e.g., vocabulary development as Larnee initiated and apprenticed Gerard into the practice). Describing Larnee and Gerard's texting and IM practices through MMDA allowed me many ways to think about, understand, and analyze the mother and son relationship and also, to note how they used multiple modes, along with discourses, to answer my questions. Therefore, using MMDA captured the often significant and unnoticeable nuances beyond language that were present and carried out in Larnee and Gerard's lives. The findings are presented below.

Scene	Time	Moment-to-Moment Action/Context	Talk at Each Turn/Verbal Discourse	Effect on Action/Practice
		Table 1. Multimodal Discourse Analysis (MMDA) Chart of Larnee and Gerard's Practice of Texting and IMing		
1	0:29:09:02	Gerard is sitting to the left of the screen counterclockwise and is looking at the computer screen. His right hand is on the mouse and his right foot is on the computer unit on the floor. Larnee's right hand is shown holding her cell phone and is texting Gerard. She appears to be leaning back with a mug in her left hand.	L: This is pretty much an average day right here, for real. Once we get all of the formalities out the way, this is what we do. (laughs)	Larnee initiates and apprentices Gerard into the practice.
2	0:29:29:11	The back of Gerard's chair faces the right side where Gerard cannot be physically seen. Larnee's position is the same.	L: It's more structured then. [regarding the children playing on the computer in the summer vs. fall]	Larnee is comfortable in this space. Gerard shows agency, owning his practice.

FINDINGS

Texting and IMing As Normal Digital Literacy Practice in a Literate Home

Larnee's bedroom was the hub of her family's digital literacy practices. There, literacy practices such as talking on the phone, emailing, creating print/digital comic strips, creating digital calendars for family members, playing video games, and designing blogs revealed "taken for granted" digital literacy practices. Larnee and her sons created sacred and active spaces of individuality and collectivity that were situated in the Ali household. According to Larnee, she and Gerard have a close relationship, and he is the one who identifies with her fascination with digital literacies. *"He is a major reflection of me"* (Interview, 2007). Gerard frequently came home from school to work on his digital comic strip on the computer and communicate face-to-face with Larnee. In this digital space, they fostered a community of practice (Wenger, 2005). She and Gerard chose to extend their verbal exchanges to more innovative ways to engage beyond talk.

During my interview with Larnee she told me how she engaged in texting and IM with Gerard on a regular basis. Larnee recalled *"Texting is personal . . . If my sons are online, I'll message them and IM from my bed and have a conversation." "And you all are in the same room?"* I asked. *"Same room,"* she stated. According to Larnee there was a need for her to text for quick responses or if she was ill.

In August 2007, for about ten minutes, I observed Larnee, sitting on the bed sending various text messages to Gerard as he sat at her computer desk less than two feet away. As told by Larnee, *"This is pretty much an average day right here, for real. After we get the formalities out the way, this is what we do. We can do this for hours."* Larnee chose to initiate communication with Gerard from her bed via her cell phone. She sent him a text message that appeared as an IM on the computer, and he responded. There was often the in-between, real-time of sending, receiving, and waiting for a text/IM when both simultaneously typed. The content of the text and IM were mundane communication, such as, *"what are you doing," "looking for sprites* [computer graphics]," and Larnee's occasional *textese* to try to throw Gerard off in her usual playful manner (e.g., *ttyl = talk to you later; LOL = laughing out loud*).

During my observation, I asked Larnee questions about her use of texting and IM with Gerard: *"How did you initiate the texting/IM discussion online?" "Did Gerard have any difficulties understanding the IM acronyms?" "What did this practice do for you?"* Prior to Larnee and Gerard texting and IM, Gerard occasionally stood next to his mother and watched her IM friends and family members and asked her what certain acronyms meant. Based on my observations, Gerard appeared to remember the acronyms, and when Larnee decided to text him one day, Gerard responded. I was present on another day when Larnee recalled the time that Gerard first began to use IM to communicate with her, providing an additional answer to my questions.

L: *You know what I wanted to ask you. How did you start figuring out the IMs that I sent? I don't spell the words out . . . How did you start putting them together?*

G: *All I did was just look . . . Look and think.*

This practice became automated; Gerard was able to understand the practice and communicate with Larnee. They took the complexity out of digital literacies and naturalized texting and IM as a normal part of their engagement and communication (Lewis & Fabos, 2005). This back-and-forth practice of virtual and nonverbal communication (typing on the computer, texting, proximity of the practice, and their reliance on the digital tools) may appear to be insignificant since Larnee and Gerard were in the same room at the same time in close proximity to one other. Thus, I reflected on the following inquiries: Why did Larnee and Gerard feel that they needed to text and IM rather than communicating face-to-face? How did this interaction influence the dynamics of family structures in their home? When asked, Gerard responded, *"I text because it is a way for me to be with my mom."* In previous publications (Lewis, 2009, 2010a, 2010b, 2011) I explained the many layers in Larnee's past, including physical and sexual abuse, and how she used this digital literacy practice as a mediating tool to make sense of her life.

Larnee mentioned earlier that she becomes emotional when using technological tools. For instance, while explaining the functions of the computer motherboard she began to discuss the motherboard as being a part of her. She touched the unit explaining what each function meant to her. During one observation she began to cry when one part of the equipment reminded her of a roadblock in her life, of being taken out of school by her mother. She embodied the tool as it became an emotional tie. Pointing to the computer motherboard equipment she said, *"That's a roadblock for me because I haven't completed school. It's not my fault that I wasn't in school; I was taken out of school."* She used this tool as a means of surviving her past and described her need to use digital literacies to communicate with Gerard in online spaces even when she needed to rest due to her illness. Larnee offered her essential reason for texting Gerard.

> I started doing it [texting] because I didn't want to disturb him from his peaceful state. I started asking him questions to test his knowledge of the computer. Then, the #1 reason, bed rest. I am always on bed rest [due] to my illness, and I wanted to have a way to communicate with him that would make it fun. We text to stay connected to and spend time without us interfering in each other's space." (Email, 1/16/08)

Larnee and Gerard made digital literacy practice relevant to the use of time and space and in the ways they chose to communicate in their home. Thus, their literacy practices demonstrate the affordances of digital and multimodal literacies: for engagement, awareness, connectivity, and communication. In the next section I address the broader topics of what it means to be literate in this digital world, outside of talk, and how meaning is made and mediated through the activity systems which were a relevant part of Larnee and Gerard's digital lives.

Texting and IMing As Meaning-Making and a Mediating Activity System

Larnee and Gerard's digital literacy practices of texting and IM demonstrated how engagement beyond talk can be primary sources of communication between a mother and son. Kress (2003) suggests that, "language alone cannot give us access to the meaning of the multimodality constituted message; language and literacy now have to be seen as partial bearers of meaning only" (p. 35). In other words, what occurs beyond language, via modes, is equally, if not more, prominent in these digital literacy practices. During my observations of Larnee and Gerard texting and IM, Gerard neatly positioned himself in front of the computer, his right hand on the mouse to maneuver the screen. He moved the computer screen windows on the monitor back and forth on the Internet browser from collecting and transporting sprites (e.g., computer graphics), to working on a digital comic strip, to looking at his mother's texts. At times, I heard very little talk, only the sounds of Gerard fidgeting with the mouse scroll wheel or the short beeping sounds when Larnee typed, or a beep to inform Gerard when he received an IM. Gerard used each mode to make meaning and connect to what Larnee was doing. Figure 3 presents a video still detailing how the multiple modes of representation gave credence to how Gerard and Larnee engaged in texting and IM as well as how this activity became a meaning-making practice.

Figure 3 highlights the way Larnee and Gerard interacted through texting and IM. By maneuvering back and forth they gained agency at home. I adopt Moje and Lewis's (2007) description of *agency*: the "strategic making and remaking of selves, identities, activities, relationships, cultural tools and resources and histories, as embedded within relations of power" (p. 18). Larnee and Gerard kept *remaking* themselves in the practice of texting and IM to make sure it made sense to them. For instance, they felt competent and liberated as they constantly drew on a range of
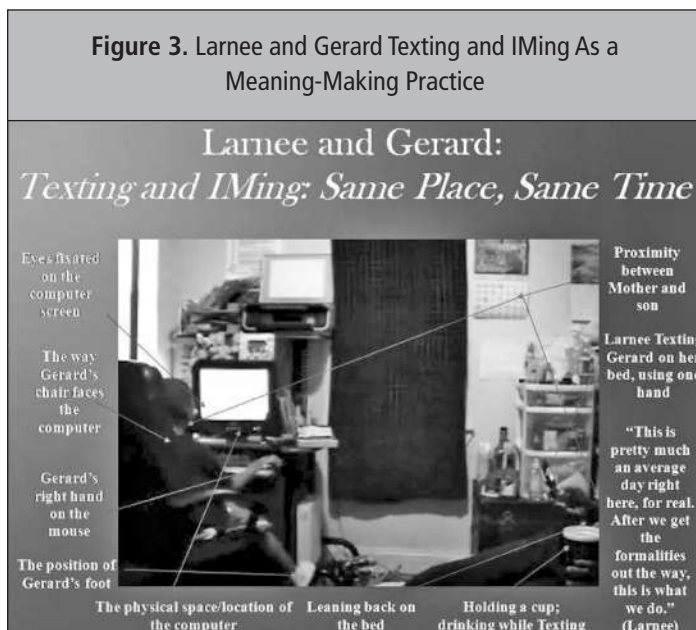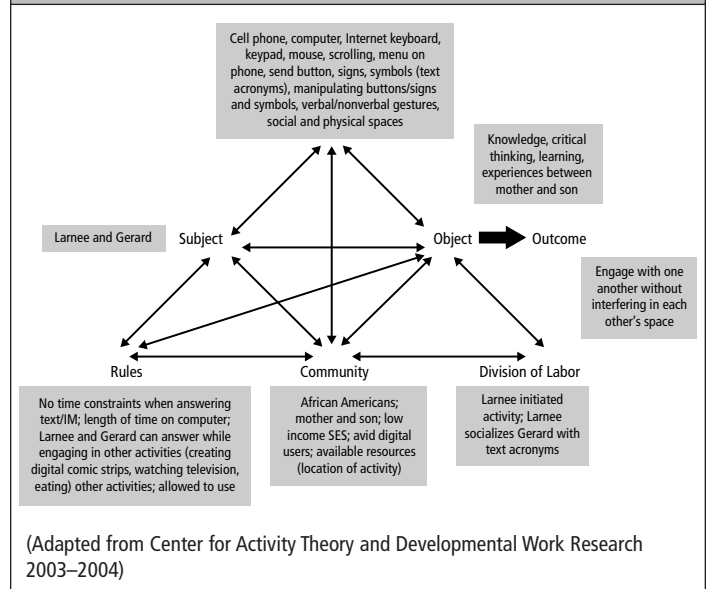
Figure 3. Larnee and Gerard Texting and IMing As a Meaning-Making Practice

Figure 4. Larnee and Gerard's Activity Theory System

(Adapted from Center for Activity Theory and Developmental Work Research 2003–2004)

modes (linguistic and nonlinguistic) during texting and IM to create, interpret, produce, and make meaning. The typing on the keyboard, the beeps from the cell phone with overlapping exchanges, second delays, and proximity gave them the agency to create new ways and new activities that gave them a sense of self.

The video still in Figure 3 suggests that the idea of *semiotic resources* ("the resources of and for making meaning") (Jewitt, 2006, p. 16) is also central to the interpretation of how Larnee and Gerard connected with each other on computer and phone screens, what they did with images, how ideas were expressed and displayed with images, and what they did in practice (Jewitt, 2006; Jewitt & Oyama, 2001). Larnee and Gerard became transformers of what, how, and why they used texting and IM to communicate with each other. They were able to understand the same code in order to connect signs and meanings. They selected from a range of semiotic resources that expressed meaning in the way they communicated from screen to phone and connected meanings to the sounds (e.g., sound indication when each received a text or IM) or graphic designs/patterns in order to understand each other online. In addition, Gerard often engaged in creating his digital comic strip and chose to respond to Larnee after he switched/changed a screen or found a sprite for his comic strip. The activity theory chart below highlights Larnee and Gerard's structure of human activity in the home.

In this diagram I represent Larnee and Gerard as the *subjects* of this interaction. I highlight the *objects* as the motive of the activity (physical or mental), the knowledge, learning experiences, and the critical thinking skills that were developed during their interaction. I chart the *artifacts/mediating tools* as the cell phone, computer, social and physical spaces, keyboard, nonverbal/verbal gestures, and text acronyms that were mediating the activity and assisted in achieving the outcome of their interaction. The *division of labor* or roles helped to shape the activity by the subjects and the

community in which they are practiced. For instance, Larnee was the initiator of most of the digital literacy practices in the home; therefore, she had a primary role in managing the practices. Gerard also had a role in deciding to participate by answering the text or not. The *rules* positioned Larnee and Gerard in a communal space in which they created norms in which to engage in texting and IM. For example, Larnee supported the activity in her bedroom, where the only computer was located, but at any time she could impose rules on the length of time Gerard spent on the computer and in her bedroom. She chose how long to engage in texting and IM, which acronyms she chose to introduce to Gerard, and required that his homework be completed before working on the computer. It was the unwritten, unspoken discretions and norms that she afforded to Gerard that could be carried out in the activity (e.g., freedom to take his time to respond to her text or choosing to engage/disengage in the activity). Thus, the overall *outcome* from this digital literacy practice was engaging with one another without interfering in each other's physical spaces.

The study of texting and IM as a meaning making and activity theory system explored the various modes used, practiced, and interpreted beyond talk, resources, and contexts. The relationship between these two entities, meaning-making and activity theory, became central approaches to understanding how Larnee and Gerard, as transformers and sign makers, made choices regarding how and in what ways to respond to each other. Aside from creating a fluid practice of "*I text and IM the way/when I want to*," Larnee and Gerard engaged in the unwritten and unspoken norms that caused me to look at the meaning making practice 'beyond' the individual and concentrate on how the practice was situated within a social activity system (Kress & Jewitt, 2003).

DISCUSSION AND CONCLUSIONS

This study describes how an African American mother and son communicated with each other via texting and IM that helped to shape their family relationship, draw on multimodal meaning-making resources, and change the dynamics of family structures. Texting and IM were 'normal' practices for Larnee and Gerard, and reinforced Barton and Hamilton's (1998) argument that "people learn new literacies throughout their lives and incorporate new technologies into their everyday activities" (p. 263). These practices were vital to how Larnee related to and with Gerard. She initiated a social network to foster further discussions and enhanced communication skills and interactions between her and Gerard using tools that were of interest. This is not to suggest that Larnee and Gerard favored digital literacy practices over other forms of communication with each other, but the study offers insight into various ways of communicating using digital tools.

Having digital tools in the home may shift families' relationships toward more cyber connections (and possibly fewer face-to-face communications). Families like the Ali's may also unconsciously displace traditional practices such as conversing over dinner together and expand opportunities to engage in discussions throughout daily activities. These literacy practices tie into Taylor's (1983) argument

that there is no single definition for family literacy because it is based on the collective literacies that occur in family members' everyday lives.

As researchers we are compelled to make sense of how digital literacy practices speak to a larger interpretation of multimodal semiotic approaches. The use of digital tools offered the Ali family alternative channels for communication. Larnee and Gerard's digital literacy practices relate to 21st century skills of communicating information through multiple modes of meaning (Kress & van Leeuwen, 2001). Further research is needed to examine what is lost and what is gained in terms of nonverbal cues from communicating via phone or Internet, versus direct personal contact generated by what families say and do (e.g., facial expressions, emotions in tone).

Larnee and Gerard's interaction with texting and IM suggests that a mother and son's individual and collective knowledge and learning were not constrained, unlike other homes where some families may not utilize the new literacies and digital technologies that extend the family structure. The practice of texting and IM acknowledged the nonverbal and verbal occurrences, which presented new ways of communicating in homes and schools in the 21st century. More specifically, Larnee encouraged and initiated her own and Gerard's funds of knowledge (Moll, Amanti, Neff, & Gonzalez, 1992) by acknowledging their digital literacy practices and unnoticed spoken, written, and gestural nuances as salient in their household. They were able to introduce and learn beyond the practice of texting and IM but accomplish this through simultaneous use of various modes of representation and communication, which offer substantial contributions to enhancing learning in academic settings.

Yet, this study also revealed evidence of the power relationships that impacted Larnee and Gerard's interactions in areas of awareness, apprenticeship, and agency (Lewis, 2011). However, it was clear that digital literacies were central to the relational bond between Larnee and Gerard and to the ways the mother created an awareness of digital tools that revealed her role as initiator and communicator in her online community. Unlike the uneven relational power of some shared storybook reading in families, by using digital literacies this family's relationships became more symmetrical in terms of expertise.

Apprenticeship and guided participation were evident when Larnee helped Gerard with his digital comic strip. Rogoff (1990) reminds us that apprenticeship occurs when individuals are involved in a social activity that supports a child's "understanding of [a] skill [by] using the tools of culture" (p. vii). When Gerard received an IM from his mother, he responded to her in the midst of completing his digital comic strip. Since Larnee offers strong support for her children's learning, she allowed Gerard the responsibility of using the computer on his own, but she also recruited Gerard to join and manage his participation in IM as he was apprenticed into these engagements for communication and social transformation (Tierney, Bond, & Bresler, 2006). Maneuvering back and forth between texting and IM gave Gerard authority and agency at home.

Larnee showed evidence of agency in how she used her knowledge and skills to engage in and understand these digital literacy practices despite the fact that she had not obtained her G.E.D. Outside of the relationship she had with Gerard, she also had a "relationship" with the digital tools that was the result of her traumatic past. By initiating digital literacy practices in her home she felt empowered, giving her the agency she never received as a child. These practices reinforce Turkle's (2005) concept of *second self* and the importance of considering not only what the digital tools do *for* us, but also what they do *to* us. Thus, Larnee's agentic roles were demonstrated in how she made and remade herself, created a learning space, introduced new practices and skills, and engaged in varying discourses with Gerard. Given the complex and unique practices that were demonstrated in Larnee and Gerard's home, further research is needed to explore how family literacy practices emerging from this study can help shape other families' digital lives. In the section below, I revisit some of the major points explored in this article to consider implications of new insights into family's digital literacies and respond to how we need to make sense of these practices in families like Larnee and Gerard within broader family and research contexts.

New Insights into Family Digital Literacies

Larnee and Gerard's histories, experiences, values, and belief systems surrounding digital literacies reflected their everyday practices and were constantly constructed and reconstructed as they used digital literacies as mediating tools to help make sense of their lives. With only one computer in the home, they collaborated by texting and IM as a normal literacy practice. Their interactions with one another around digital literacies not only encouraged and supported family relations but also, afforded them unique learning relationships.

While researchers have provided substantial information regarding family literacy practices, the increasing technological advances in society have changed how today's family members communicate and interact with one another. Digital literacies have become increasingly important in the ways families communicate, disseminate information, read, write, learn, enjoy, and cope, as well as perceive literacy. Within this vein, I reflect on and offer types of insights for exploring family's digital literacy practices in this space and time: *families' digital literacies as ecologies, families' digital literacies as deictic,* and *families' digital literacies as an emotional factor*. Each category responds to the ways families' digital literacies have shifted over time and suggests how researchers can position and study digitally-literate families.

Families' digital literacies as ecologies. For twenty-first-century families, being literate means engaging in digital literacies. Today's families have welcomed digital tools (i.e., texting/Facebook) and accompanying literacy practices into their homes and lives, so a substantial amount of some families' time is now mediated through the Internet. As a result, digital literacy practices are evolving and shaping some families' daily practices and the context for family interactions. Such practices inform families' digital identities that extend over time.

Just as Larnee and Gerard engaged in a plethora of digital literacy activities such as texting and IM, practices like these would not have been possible if Larnee resisted the opportunity to create a hub for digital tools and practices in her home and thus, in the lives of her family. Families' digital literacies need to be thought of as larger literacy ecologies within social and cultural contexts. For instance, Steward (1972) described a cultural ecology approach through the relationship and adaptation between nature and culture in human societies. Cooper (1986) argues that an ecological framework situates literacy as "an activity through which a person is continually engaged with a variety of socially constructed systems" (p. 367). In addition, Brooke (2009) explores "ecologies of practice" as a "conscious, directed activity" (p. 6) that explores how new media serves as interface rather than object. For instance, Brooke suggests how the study of social network sites, through ecologies of practice framework, relies on continuous literate activities that occur on the sites rather than the actual text created through them (Buck, 2012). Pahl and Rowsell (2012) depict ecologies as multiple literacies, tools, and resources that exist and take root by individuals' actions that accumulate and relate to other practices. The analytical attention to ecologies provides us with a greater understanding of how families' digital literacies are no longer traditional, but viewed as ecologies that are fluid and continually circulating across a range of spaces. This understanding fortifies the importance of families' uses and purposes of digital literacy practices in the digital age. In this vein, examining families' digital literacies as ecologies also reveals the multiple ways family members communicate, engage, and relate in the home through deictic styles and forms.

Families' digital literacies as deictic. As Larnee and Gerard texted back and forth with each other in Larnee's bedroom, they drew on a range of modes, outside the traditional, to make meanings and establish these practices as "typical" in their home without interfering in each other's physical spaces. However, they engaged and welcomed each other in their digital spaces. This is one example of the evidence that suggests that literacy practices are changing. Thus, there is a need to identify, redefine, and reshape the concept of literacy because of the social demands, roles, and functions of the new kinds of digital technologies that are accessible and influential (Leu, 2000; Lewis & Fabos, 2005). Thus, literacy becomes deictic (Leu, 2000); according to Leu (2001), "literacy is increasingly deictic—the definition of what it means to be literate continuously changes as new technologies of literacy rapidly appear in an age of information, creating both new opportunities and new challenges for literacy educators" (p. 54). Families create deictic relationships that are developing between literacy and digital literacies and practices in the ways they choose to communicate verbally and virtually. Studying only face-to-face conversations becomes limited when other multimodal modes (linguistic, auditory, visual, gestural, and spatial) blur the boundaries of how we examine literacy in this age. These newer practices open up spaces for family members to extend their communication practices and discussions via digital tools in new ways. Through these investigations we can begin to

answer inquiries regarding the affordances and disaffordances of what is lost and gained when families communicate via digital tools versus personal contact.

It is important, as well, to help families to recognize and own their digital literacy practices that are embodied and supported in their homes as everyday literacy practices. In the future these practices will maintain extended family traditions, as well as intergenerational, multilingual, and multimodal literacies. However, it is important to recognize that engagement in digital literacies, for some family members, extends beyond the deictic literacy practices to fulfill an emotional need or desire in order to cope with past struggles.

Families' digital literacies as an emotional factor. Larnee had an attraction to and reliance on digital literacies/tools. She felt comforted when she connected with Gerard on her cell phone. She slept with her cell phone next to her, and she embodied certain digital tools within herself and as parts of her body (e.g., computer motherboard as self; C drive as the brain) (Lewis, 2009). She used these tools as a means to survive her past abuse or as an exchange between the digital tool and the members of her family. In addition, during my first interview with Larnee and later when she blogged with Gerard, she said *"technology is emotional for me"* stating, *[we]* *"intertwine, interact, and join with one another and become unified as one. If that is not what you would call emotional then..?"* Larnee also admitted her passion for texting as *"personal and emotional."* She explained this need:

> Ooh, texting is personal. I think it's more personal than an IM because not too many people use your phone to view your text messages, only to make a phone call. Text messages are something that people normally do to get emotional with the person. (Semi-structured interview, 7/24/07)

Viewing a family's digital literacies as *emotional* can play a significant role in their understanding of how digital literacy practices influence the ways they make sense of themselves. In an NPR interview (Gross, 2012), Turkle (2012) argued *"it's a way of life to be always texting."* Referring to her 2012 book *Alone Together: Why We Expect More from Technology and Less from Each Other*, Turkle added the fact that there is an emotional dependence on digital devices that individuals cling to that affects how they communicate with one another. Turkle stated, *"What is so seductive about texting, about keeping that phone on, about that little red light on the BlackBerry, is you want to know who wants you"* (Gross, 2012). Larnee's choosing to engage in, and create digital literacy practices with her son in order to interact with him stemmed from her history of physical and sexual abuse and past experiences that motivated her to create agency and ownership in her current situation (Barton, Appleby, Hodge, Tusting, & Ivani , 2007; Moje & Lewis, 2007). Thus, this information calls attention to the ways digital tools influence and shape what individuals do with them and suggests how individuals influence and shape digital tools to become a part of their agentic and identic selves. As a result, family members who create emotional attachments to digital tools affect their social relations and practices (Lewis, 2009, 2011).

These categories, *families' digital literacies as ecologies, families' digital literacies as deictic,* and *families' digital literacies as an emotional factor*, describe significant shifts and insights from traditional literacy practices. A family's digital literacy practices can make it possible for members to compete in a society with increasing technological demands as well as secure family relationships and structures in the home. As a result, I classify these categories as distinct ways in which a family's engagement with digital literacies will continue to change family dynamics and relationships in the home.

LIMITATIONS

Studying Larnee and Gerard's rich digital literacy practices, such as texting and IM, offered a detailed and situated representation of the implications of a family's digital literacies. However, there is no indication of how widely this family's practices represent any larger group or how they relate to another family's practices. Rather, the work is presented as an initial inquiry and an important area for future research. In addition, because some documentation from Larnee and Gerard's texting and IM activities were unfortunately deleted as a result of their computer crashing, I relied on the live interactions during the data collection and observations to gather the data that were analyzed. A subsequent study could reverse the effects of this problem.

Some of the constraints relate to ethnographic insights regarding methodological procedures. For instance, my identity as an African American and a former reading specialist at Gerard's after-school program affected the dynamics of our in-home and in-school interactions, and heightened my role as a researcher because I had rapport with them from various perspectives across their lives. I did not examine Gerard's learning practices in the mainstream classroom, although I acknowledge that they might have had an impact on his learning at home, as well as his identities, apprenticeship models, and agentic roles. Although I was aware of possible affinity spaces/groups and communities of practice, I chose to focus on the context of home since studies such as the one I conducted on a family's digital literacies surrounding texting and IM, in particular for a family of color, are rare in the literature.

Although Gerard had three male siblings, I chose to profile Larnee's and Gerard's texting and IM roles separately. As explained earlier, Gerard's digital literacy practices were the impetus that first drew me to consider him as a participant for the study. Extending the study over a year or two would possibly have allowed me the opportunity to examine more interactions with the entire family and their friends to fully explore how the family's digital literacy practices influenced their relations with other members of the family and community. My decision to limit the study to the observation of a single dyad allowed me to gain a deeper understanding that will inform future inquiries in more extended contexts.

In summary, this study represented family literacy in unique and complex ways as it reveals how an African American mother and son used texting and IM, how they drew on multimodal meaning making resources, and how their interactions changed the dynamics of their family's structure. Larnee and Gerard's digital literacy practices suggest how meanings are made over time in digital and non-digital contexts, revealing how these family members communicate in the rapidly changing literacies of the twenty-first century. One future research goal is to explore larger samples of families' digital literacy practices in order to understand how other families interact with digital literacy practices in their home. Finally, it is important to broaden this understanding by investigating digital literacy interactions between parents, students, and teachers in order to provide critical insights for researchers and educators who seek to enhance and explore digital learning environments.

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