

## ABSTRACT

HAMILTON COBB, FREDESSA DENISE. "I Wanna Text, Too!" Examining How Low-literate Adults Use New Communication Technologies and Applications. (Under the direction of James Kiwanuka-Tondo.)

We hear or read the following phrases often: "Everybody spends so much time on their smartphones that they never look up." "Just send me an email and we'll work out the scheduling." "You'll find all the job application materials on our website, where you can submit your application online." However, adults with low literacy skills, who represent more than 30 million Americans (Kutner, Greenberg, Jin, Boyle, Hsu, Dunleavy, & White, 2007), have not been able to take full advantage of any of these options, and without the ability to read and write, they are unable to utilize communication technologies and applications that others take for granted. The issue is not that these adults choose not to use these applications. In the words of one adult literacy student observed in 2007 as she watched two younger GED students texting with the greatest of ease, "I wanna do what they're doing. I wanna text, too!"

As more daily functions move toward text-based electronic communication, reading literacy becomes even more important for adults who are non-readers or who exhibit low literacy levels. Important questions must be raised regarding how this group of adults uses cell phones, whether they can communicate in an increasingly text-based society, and if they can successfully move toward electronic commerce, online employment application processes, and information seeking via the Internet.

This qualitative ethnography uses the analytical principles and tools of grounded theory (Glaser & Strauss, 1967, 1994) to look at the extent of use of communication technologies and applications, such as those listed above, among low-literate adult learners. I conducted the study while serving as a literacy tutor for adult literacy programs in two community colleges in the southeastern U.S. I collected data from interviews, participant-observations, post-interview field notes and other sources to provide detailed descriptions of the behaviors discovered in this interdisciplinary study encompassing the disciplines of communication and adult learning, two fields with separate theoretical legacies.

The study addresses questions such as how low-literate adults learn to use communication technologies while integrating them into their lives, what reasons they provide for desiring to learn them, and the challenges and obstacles they face while learning technology. The research reveals that low-literate adults enrolled in adult basic education classes significantly underutilize new communication technologies outside of class. They are also not sufficiently exposed to this technology within their classes.

This group of learners relies heavily on traditional media, specifically radio and television, for information and entertainment, but rarely for education; they learn of 21<sup>st</sup> century communication technologies from these media or from friends and relatives. The core concept of this research is the finding that low literate adults rely on others to access technologies for them, and do not find themselves in situations

or environments where others can take the time required to help them master these technologies to a level that meets the learners' satisfaction.

The study also indicates the need for even more research to better understand current uses, and also to work at introducing new and emerging communication technologies among these adults.

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“I Wanna Text, Too!” Examining How Low-literate Adults Use  
New Communication Technologies and Applications

by  
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## DEDICATION

This manuscript is dedicated to the memory of four extraordinary women who always believed I would achieve this milestone. My mother, Kathleen Bennett Hamilton, was my very first teacher. She instilled in me, her oldest, the love of reading, which still encourages me to pass on that love to others. Two of my greatest influences were my maternal and paternal grandmothers, Odessa B. Wall and Alice V. Hamilton. Odessa (Nanny) supported my academic success every day of my life. I always wanted to make her proud. Alice (Grandma), though grandmother to more than 25 grandchildren, gave me something special—the gift of poetry, the love of the Word of God, and the desire to teach. My late Ohio University roommate, Lolita Pazant Harris, and I shared a dream of achieving our Ph.D.s together and teaching at the university level. I dedicate this study to her and her family.

I also want to dedicate this work to my beautiful sisters, Kathy and Tanya, my brother-in-law Eric, and my nieces and nephews, all of whom have given me encouragement every step of the way. My mother-in-law, Gwender Cobb, has been a supportive influence, and a former teacher who empathized with my struggles in the classroom. My stepson, Julian, has made me very proud.

To my husband, Bobby L. Cobb, Jr., I owe my love, gratitude, and thanks for every single day that he has seen me through this journey that started long before my Ph.D. studies. He has seen my tears, watched my enthusiasm,

bolstered me in times of doubt, and always reminded me of the light at the end of the tunnel. He has helped me keep my eyes on the prize, and for that I will love him forever.

Finally, to the legacy of those who lost their lives simply for their desire to learn to read and write, I dedicate this manuscript.

To God be the glory for the things He has done!

## BIOGRAPHY

Fredessa Denise Hamilton Cobb is a Ph.D. candidate in the Communication, Rhetoric and Digital Media program at North Carolina State University. She earned her Master of Arts in Telecommunications from Ohio University and her Bachelor of Arts in Religion and English from Duke University. Prior to beginning her doctoral studies, she enjoyed a successful professional career for more than 25 years as a technology trainer, telecommunications program manager, and a community college instructor. Currently she is an adjunct professor at Shaw University in Raleigh, North Carolina. She has taught Introduction to Mass Media, Media Writing, Digital Audio Production, and a number of Telecommunications courses. As a teaching assistant at NC State, she earned a Certificate of Advancement in Teaching, an Outstanding TA award, and an Academic Achievement Award representing NC State's College of Humanities and Social Sciences. She has also been a broadcaster, sales representative, and technical writer/editor.

Ms. Hamilton Cobb's lifelong goal is to build a career in the professoriate, and she has had a long-standing desire to teach adults. Teaching at the collegiate level is an extremely rewarding pursuit, and she hopes to continue to practice community engaged scholarship. As an African American female from Washington, DC she was exposed to the encouragement of a supportive family and teachers who urged her to excel in academic study, and experienced a changing American society that began

to value and accept the benefits of diversity and social justice. She is the first in her immediate family to achieve a bachelor's degree, and to continue graduate studies.

Ms. Hamilton Cobb's research interests include mass communication, public broadcasting, new media studies, and telecommunications. She has presented papers at a number of conferences, including the National Communication Association (NCA), the Broadcast Educators Association (BEA), the Expanding Literacy Studies Conference, the Linguistic Circle of Manitoba and North Dakota, and the National Association for Equal Opportunity in Higher Education (NAFEO). From 2007-2010, she served as the Editorial Assistant for *Communication Currents*, an online publication of the National Communication Association (NCA). She has recently published an article in the *Journal of Media Education*, and currently has three papers under review in journals focused on adult literacy, rhetoric, and community engagement.

She is a poet with several published poems, two completed poetry collections, and a novel in progress. Ms. Hamilton Cobb also has a craft making telephone wire baskets, two of which were included in the 2010 "Hang It Up" exhibit at North Carolina State University's Gregg Museum of Art in Raleigh, North Carolina.

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# Chapter 1

## Dissertation Overview

As educators, we hear or read the following phrases often. “Everybody spends so much time on their smartphones that they never look up.” “Just send me an email and we’ll work out the scheduling.” “You’ll find all the job application materials on our website, where you can submit your application online.” Adults with low literacy skills, however, may not be able to take advantage of any of these technologies, and without the ability to read, they may be unable to utilize communication technologies and applications that others take for granted. The issue is not that these adults choose not to use these applications. In the words of one adult literacy student I observed in 2007 as she watched two younger General Educational Development (GED) students texting with the greatest of ease, “I wanna do what they’re doing. I wanna text, too!” As more daily functions move toward text-based electronic communication, reading literacy becomes even more important for those adults who are non-readers or who exhibit low-literacy reading skills (the equivalent of elementary school grades 0-2).

The proliferation of new communication technology devices and applications, such as text messaging, Facebook, Twitter, smartphones with cameras, the Internet, and global positioning systems, is occurring rapidly in developed countries, and communication scholars are attempting to address how these technologies are being used by literate populations, those who can read, write, and use computers.

However, there is a particular need to understand how low-literate populations are being exposed to, and use, these technologies. As Hawisher and Selfe (2004) tell us, we know little about how and why people have acquired and developed the literacies of technology, if they have at all.

The most recent large-scale survey of adult literacy, the landmark 2003 National Assessment of Adult Literacy (NAAL), defines literacy as “using printed and written information to function in society, to achieve one’s goals, and to develop one’s knowledge and potential” (Kutner, Greenberg, Jin, Boyle, Hsu, Dunleavy, & White, 2007, p. 2). This dissertation will use the NAAL definition of literacy, as it best describes the efforts of the participants in this study to achieve improved literacy levels. Adult literacy, in addition to computer literacy, is one of the most significant issues of the 21<sup>st</sup> century, affecting between 30-40 million people in the United States (Kutner et al., 2007). Although the number of adults who have low literacy skills seems high by 21<sup>st</sup> century standards, this is not a new problem, as Kozol (1985) informs us. In his groundbreaking book, *Illiterate America*, Kozol (1985) finds that one third of all adults who lived in the United States in 1984 were considered illiterate, and in 1983, the largest concentration of adult “illiterates” was in prison (Kozol, 1985). With so many low-literate individuals inside the nation’s correctional institutions, the 2003 NAAL survey was conducted with both households and prison inmates (Kutner et al., 2007), and led to the publication of a companion study, *Literacy Behind Bars* (Greenberg, Dunleavy, Kutner, & White, 2007).

## **Statement of the Problem**

With the rapid changes and developments in 21<sup>st</sup> century communication technology, recent research has not sufficiently focused on low-literate adult learners and their actual or potential use of these devices and applications. Important questions must be raised regarding how non-readers and low-literate adults use cell phones, whether they can communicate in an increasingly text-based society, and if they can successfully move toward electronic commerce, online employment application processes, and information seeking via the Internet. Health literacy, media literacy, computer literacy, and other literacies also hinge on whether or not adults have sufficient reading skills (Jayne, 1999). Increasingly, as more information, government and commercial resources, and entertainment move to online delivery, some exclusively, significant numbers of low-literate adults are prevented from taking full advantage of these developments. Scholars are now only beginning to focus on the technology use of this specific group of adults, which results in an incomplete picture of 21<sup>st</sup> century communication technology distribution. Since Knowles (1980) includes in his list of what defines an adult educator those who are involved “in the educational aspects of such mass media as newspapers, magazines, radio, and television” (p. 21), not to mention the 21<sup>st</sup> century technologies available today, adult literacy and communication technology are indeed legitimate issues to be considered by a communication scholar.

## **Purpose of This Study**

This dissertation research describes the effort to discover how low-literate adults who are participating in organized adult literacy programs are using communication technologies and devices in the absence of literacy skills. This research study helps us understand if they are using these technologies as part of their interaction with family, friends or work. Scholars need to know if this specific population is being excluded or prevented from utilizing the myriad resources and information that are increasingly being made available only online or in text-intensive environments. This effort is an extension and elaboration of an initial qualitative research study of adult education students conducted at a large community college in the southeastern U.S. in 2007, where I observed the use of communication technologies by learners who were not identified by literacy level. In that pilot study, an impromptu focus group provided answers to questions that have been further refined for this study.

I have undertaken this study to understand the role of communication technology in the lives of adult literacy students in the 21<sup>st</sup> century, and do so during a time when reading and writing literacies are being subsumed into what are being called multiple literacies or “multiliteracies” (Cazden, 2000; Cherland & Harper, 2007; Hobbs, 1997; Johaneck, 2004; Kalantzis & Cope, 2000a, Kalantzis & Cope, 2000b; Luke, 2000; Selber, 2004; Street, 1995; The New London Group, 1996). These multiliteracies may not be addressed, however, in current definitions and assumptions about literacy (Elish-Piper, 2007; Lemke, 1998; Purcell-Gates, 2007;

van Dijk, 2005; Williams, 2008). Norris and Conceicao (2004) find that “digital literacy and language literacy are significant issues affecting the learning experience of an adult” (p. 74), and Street (1995), among others, calls for more research to develop a new approach to literacy. He further points out that “The notion of multiple literacies is crucial in challenging the autonomous model” (p. 134), which focuses primarily on reading literacy to the exclusion of writing, computer literacy, and other literacies being identified as new communication technologies emerge.

I have conducted a qualitative study, and agree with Street (1995) and van Dijk (2005) that actual ethnographic data is essential for informed decision making in adult education and communication technology issues. This study is an interdisciplinary research effort, and encompasses the fields of communication and adult learning, two fields with separate and distinct academic and theoretical legacies.

I am also studying this issue because communication is one means of ensuring an educated public (Freire, 2000; Peters, 1999; Selber, 2004), and literacy has a particularly important role to play in fostering racial justice and a true democracy (Hirsch, 2006; National Commission on Adult Literacy, 2008; Mack, 2001; Prendergast, 2003). Literacy is a major concern when we consider its history as a forbidden activity for African American slaves (Baugh, 2001; Bennett, 1987; Franklin & Moss, 2004; Griffin, 1996; Mack, 2001; Moss, 2001), as a hurdle to overcome in underfunded schools (Bennett, 1987; Franklin & Schweninger, 2006;

Rogers & Fuller, 2007; Selfe, 2006), and as a litmus test for full citizenship in the United States (Baugh, 2001; Franklin, 1994; Franklin & Moss, 2004; Prendergast, 2003). In fact, during slavery, “Some states passed laws designed to keep black children illiterate and most slave owners opposed a literate black population” (Franklin & Schweninger, 2006, p. 26). Even after slavery, “the profound inequality in the allocation of educational resources meant that blacks were extraordinarily ill-prepared to take part in the burgeoning industrial revolution” (Mack, 2001, p. 64). This history and legacy must be considered, as their lingering effects may explain why a great proportion of low-literate, English-speaking adults are African American (Charmaz, 2005; Mack, 2001; Prendergast, 2003; Shore, 2004).

### **Significance of the Research**

A text-based society leaves out those who cannot read text, significantly hampering the communication abilities of those with low literacy skills (Hirsch, 2006; Kirsch, Jungeblut, Jenkins & Kolstad, 2001; Knowles, 1970; Norris & Conceicao, 2004; Qualls, 2001; Selfe, 2006; Sohn, 2006). Hirsch (2006) suggests that in the 21<sup>st</sup> century, one’s ability to gain new knowledge rapidly through reading and listening is central to achieving economic and political success. Particularly in the southern U.S., many who would have been able to work with low levels of education in the textile mills and factories in past years are now finding their earning potential reduced. A study on the State of the South by MDC, Inc. (2010) reveals that “Millions of low-skill, low-education jobs disappeared [in the last 10 years], probably for good”

(n.p). The types of jobs that are now available in the southeastern U.S., particularly, rely heavily on workers who are literate. Text literacy leads to other literacies, including information/computer literacy, health literacy, numeracy, etc., and proficiency in use of communication technologies opens the door to the electronic world of learning and employment (DeVoss, Hawisher, Jackson, Johansen, Moraski, & Selfe, 2004; Hull, 2001; Jayne, 1999; Landow, 2006; Norris & Kennington, 1992; Selber, 2004; Sohn, 2006). However, without more data on low-literate adults and their exposure to emerging communication technologies, we are unable to decipher how pervasive the lack of literacy skills may be, or how we may address and ameliorate the problem, particularly through use of the technologies themselves.

This study makes one contribution toward building a theoretical bridge between two previously unconnected disciplinary areas, adult literacy and communication. It differs from previous studies in either adult literacy or communication, as it focuses on communication technology use by low-literate adults, a population previously considered unlikely to be able to use text-based devices. The results of this study extend the body of knowledge in both fields, and potentially lead to new understandings of how low-literate persons use new technologies to communicate.

As a qualitative ethnography study using principles and tools of grounded theory (Glaser & Strauss, 1967, 1994), this research makes a significant contribution in terms of its methodology, since one objective of the study is to establish a bridge

between two disciplines. When there is no existing theory to explain questions such as those posed in this study, it is necessary to first understand the phenomenon from data collected in the field. Ethnography is the most appropriate method to provide an understanding of how low-literate individuals make sense of the world of new and emerging communication technology.

When I began this study, there was a lack of recent regional statistics on the literacy problem in the state, a problem noted by many adult literacy scholars in other locales. For instance, a research study discovered at the initiation of my field work measured literacy levels in North Carolina using data compiled in 1997. The Siedow study (1998) used synthetic estimates, which are “combined Census data elements known to relate to literacy (e.g. poverty, education level) and applied statistical formulas [which] produce estimates of literacy levels that are not available from any single source” (Siedow, 1998). North Carolina did not participate in the state portion of the 1992 National Adult Literacy Survey (NALS). Therefore, Siedow’s study, using these synthetic estimates, concluded that over 2.7 million North Carolina citizens performed at literacy Levels 1 and 2 in 1992. Adults reading at Level 1 are able to locate a piece of information in short text, enter information on a form, and perform a single, simple, arithmetic operation from numbers provided. Level 2 readers are able to make simple inferences, integrate easily identifiable information, integrate information from parts of a document, and perform single operations using easily located numbers (Siedow, 1998). This data suggests that

nearly 52% of the adult population in the state at that time required literacy instruction. The obsolescence of much of the available data is another indication of the need for this study.

The NAAL report (Kutner et al., 2007) seems to suggest that economic self-sufficiency can be enhanced through literacy, and there is increasing evidence ([www.monster.com](http://www.monster.com), [www.trianglejobs.com](http://www.trianglejobs.com), [www.CVS.com](http://www.CVS.com)) that employers have moved job application materials online. Employers are making the assumption that all prospective applicants have an email address and Internet access. The literature also suggests that earning potential may increase for those who are able to read and write (Coker, 2003; Gillespie, 2007; Hull, Jury, & Zacher, 2007; Kalantzis & Cope, 2000a; Thernstrom & Thernstrom, 2003; Williams, 2004) and are comfortable and proficient in online and electronic communication (Kennard, 2001; Mack, 2001; Selber, 2004). Higher education is a more accessible goal for those who are comfortable using communication technology than for those who have not developed this proficiency (McShane, 2005). Studying low-literate adult students, therefore, is one way to discover how important it is to these students to learn how to use these technologies and applications.

Seeger (2009), in his essay entitled, "Does Communication Research Make a Difference: Reconsidering the Impact of Our Work," issues a clarion call to researchers in the field, and concludes that communication scholars have an ethical obligation to target their work toward making a positive difference in the lives of

others. “Real problems are much more interdisciplinary and require expertise from multiple sources” (p.16), he goes on to say, and it is in this spirit that the research described in this dissertation has been conducted.

Beyond these motivations, it is important that scholars not only study issues of importance to our society, but also give back to the communities that are the object of our research in the form of community engaged scholarship (Bizios & Wakeford, 2009; Boyer, 1996; Bringle, Clayton, & Price, 2009; Cordasco, Asch, Bell, Guterman, Gross-Schulman, Ramer, Elkayam, Franco, Leatherwood, & Mangione, 2009; Fear, Rosaen, Foster-Fishman, & Bawden, 2001; Jameson, Clayton, & Jaeger, 2011; Saltmarsh, Hartley, & Clayton, 2009). Saltmarsh, Hartley, and Clayton (2009) tell us that our country is headed in the wrong direction, particularly “in the widening divide between rich and poor” (p. 3), and that few higher education institutions are embracing civic engagement to address these issues. As a qualitative researcher, I could not conduct a study without finding a way to also serve the community that opened its doors to me, and to make a positive contribution to the persons who opened their lives to my gaze (Angrosino, 2005; Jackson, 2005; Schuman, 2005). Community engaged scholarship, service-learning, and outreach are also essential to address the great challenges facing citizens of the nation and the world (Boyer, 1996; Bringle, Clayton, & Price, 2009), and instructors willing to embrace these pedagogies in the classroom are preparing our students for a future of service.

As a researcher examining an issue of social justice (Charmaz, 2005; Guba & Lincoln, 2005; Kozol, 1985; Prendergast, 2003), I understand that literacy helps promote an informed democracy (Hobbs, 1997; Selber, 2004). I wanted to both investigate and help ameliorate the skills gap that may prevent low-literate adults from achieving equity and social justice. With the prevalence of other research that combines community engagement and scholarship (Prendergast, 2003; Rogers & Fuller, 2007), this study continues in that spirit. As a participant-observer, I could not learn without also helping to teach; tutoring adult literacy students served as a way to better understand the behaviors I wanted to study while making a difference in the lives of these adults (Angrosino, 2005; Belzer, 2006a, 2006b; Franklin, 2005; Jackson, 2005; Prendergast, 2003).

The study of adult literacy and communication technology must address the disciplines of both adult learning/adult literacy [hereafter referred to as adult literacy] and communication, since literacy should be included with other forms of communication media (Street, 1995). Therefore, literature in each field helps form the backdrop to this study. This dissertation begins with a review of the relevant literature in the disciplinary field of adult literacy, as this body of work may be unfamiliar to the communication scholarly community, and provides the backdrop for the conception of this study. A review of the relevant literature in communication technology follows, and the combined scholarship helps to lay the foundation for the research questions that were investigated in this study.

## Chapter 2

### Literature Review

#### Adult Literacy Research

Adult literacy is an issue that has been significant and important around the globe for decades (Abadzi, 2003; Friere, 2001; Hamelink, 2000; Mojab, 2004; Snyder, Jones & Lo Bianco, 2005; Waterhouse & Virgona, 2005), and there are estimates that over one billion adults are illiterate worldwide (Mojab, 2004). Abadzi (2003) points out that adult literacy can lead to the elimination of poverty around the world because much of the information needed to make decisions and improve one's economic, personal, family, or political conditions is in written form. As Prendergast (2003) and Shore (2004) suggest, we must focus on national and international structures, and consider the historical origins of the literacy problem. In the debate regarding the United States' competitiveness in the global marketplace, adult literacy is regularly highlighted as a major issue (Alliance for Excellent Education, 2008; Johnson-Bailey, 2000; Rich, 2008; Zuckerbrod, 2007).

The National Assessment of Adult Literacy (NAAL) (Kutner et al., 2007), conducted for the U.S. Department of Education, a follow-up to the 1992 National Adult Literacy Survey (NALS), revealed that two out of five black adults "were either functionally illiterate or close to it" (Thernstrom & Thernstrom, 2003, p. 36). For the NAAL study, questionnaires were issued to over 19,000 adults in households and prisons, leading to an expansion of the prison survey in *Literacy Behind Bars*

(Greenberg, Dunleavy, Kutner, & White, 2007). Among the initial findings, the NAAL researchers discovered that average prose literacy of adults aged 25-40 declined between 1992 and 2003 (Kutner et al., 2007). The economic impact of low literacy skills, described in the report as “Below Basic” (Kutner et al., 2007), is also apparent. Adults with Below Basic literacy range from the nonliterate, to those who are able to locate easily identifiable information, follow written instructions in simple charts or forms, and use numbers to perform simple mathematical operations. Those with Basic literacy are able to read and understand information in short and simple documents, and use easily identifiable quantitative information to solve one-step problems. The authors found that “a higher percentage of adults with *Below Basic* prose, document, and quantitative literacy lived in households with income below \$10,000 than adults with higher levels of literacy” (Kutner et al., 2007, p. v). In a more detailed discussion of the relationship between literacy and income, the authors note,

26 percent of adults with *Below Basic* prose literacy lived in households with incomes below \$10,000 compared with 14 percent of adults with *Basic* prose literacy, 5 percent of adults with *Intermediate* prose literacy, and 2 percent of adults with *Proficient* prose literacy (Kutner et al., 2007, p. 31).

The definition of adult literacy suggested by the NAAL researchers is one of an infinite number of definitions found in the literature, and Selfe and Hawisher (2004) tell us that the existing research “suggests that the definition of literate is far from stable across time...it changes dramatically and sometimes rapidly;

and...specific forms of literacy may have cultural life spans, half-lives, determined by their congruence with, and influence on, current social forces; available communication environments; and political and economic formations that function at the macro-, medial, and micro-levels” (p. 213). Other researchers urge us to include computer literacy, visual literacy, numeracy, and media literacy in the general definition of adult literacy (Demetrian, 2005; Huff & Rogers, 2001; Johaneck, 2004; Pfeffer, 2004; Rosen, 2007; Selfe & Hawisher, 2004; Yancey, 2009). Qualls (2001) suggests that adults must possess the ability to speak, read, write, calculate, and solve problems to be considered literate, and that proficiency is necessary to compete in the 21<sup>st</sup> century information society. Hull (2001) supports the belief that literacy is a set of skills rather than one skill, and adults perform differently at reading or writing in different situations.

The field of New Literacy Studies (Street, 1995, Williams, 2006) urges us to embrace the term “multiliteracies.” Led by the research of The New London Group (1996), the movement toward multiliteracies acknowledges that literacy no longer consists of “page-bound, official, standard forms of the national language,” (p. 1), but instead incorporates “information and multimedia technologies” (pp. 1-2). More importantly, The New London Group (1996) finds that

...new communications media are reshaping the way we use language. When technologies of meaning are changing so rapidly, there cannot be one set of standards or skills that constitute the ends of literacy learning, however taught (p. 4).

Cazden (2000) tells us that “[t]he Multiliteracies framework stresses the importance of opportunities for learning new discourse skills, oral and written, through a lifetime of changing social and employment contexts” (p. 261). As a means to demonstrate this type of learning, Luke (2000) proposes a lesson in multiliteracy that can be developed by “conducting a group project with senior secondary or adult literacy students on, for instance, a hypothetical class trip to Thailand” (p. 89), including web searches and reliance on cultural knowledge of the students. Another approach offered by Kalantzis and Cope (2000b) is demonstrated when an English teacher asked students to “bring in CDs of some of their favourite songs. They play some of their songs, relating the music to their own interests and life experience” (p. 243). As innovative as these suggestions may be, the adult literacy literature does not indicate that literacy programs are following these approaches. In spite of the need for multiliteracies, decontextualized, book-based learning styles abound.

Heller (2008) calls the term literacy “an ideologically loaded term” (p. 53), and Prendergast (2003) summarizes how today’s scholars look at literacy, concluding that it is “a context-specific phenomenon characterized by a range of cultural practices around the use of print, rather than a universal and quantifiable cognitive skill” (p. 9). Prendergast (2003) goes on to say that literacy researchers believe that “the abilities to read, write, and memorize are highly contextual and task dependent” (p. 29). A position statement from the National Council of Teachers of English (NCTE), adopted in 2008, reinforces the need to revisit the definition of literacy, and

embrace the concept of “many literacies” (NCTE, 2008). Among the recommendations, 21<sup>st</sup> century readers and writers need to “develop proficiency with the tools of technology...manage, analyze and synthesize multiple streams of simultaneous information...[and] create, critique, analyze, and evaluate multi-media texts” (NCTE, 2008). Scholars are finding that educational formats, settings, and concentration on textbooks do not allow today’s adult literacy students to develop such proficiency.

Research suggests that low literacy skills impact employment prospects and earning potential for millions of Americans (Alliance for Excellent Education, 2008; Merriam, Caffarella & Baumgartner, 2006). Kutner et al. (2007) estimate that “some 30 million American adults had *Below Basic* prose literacy, 27 million had *Below Basic* document literacy, and 46 million had *Below Basic* quantitative literacy” (Kutner et al., 2007, p. 12). As might be expected, adults who did not complete high school and were not currently enrolled in school were more likely to have *Below Basic* prose, document, and quantitative literacy (Kutner et al., 2007). Furthermore, Kruidenier (2002) suggests that “Many non-ESOL ABE [Adult Basic Education] students are reading disabled” (p. 117), implying that there may be a link between low-literacy in adults and undiagnosed learning disabilities. Hamelink (2000) is concerned about the training provided to adult learners, concluding that modern society depends on citizens with the basic skills of literacy. This basic level of literacy is becoming an expectation of employers, service providers, government agencies, and the media.

## **Theories of Adult Learning**

Extensive literature is available to assist us in understanding how adults learn best, and scholars in adult learning and adult literacy have developed and refined a number of learning theories that might be applicable to low-literate individuals.

Andragogy (Isenberg, 2007; Knowles, 1980; Merriam, 2001) is defined as the art and science of helping adults learn. Knowles (1980) finds that adult learners have very specific learning styles and needs that are markedly different from children. He suggests that there are systematic ways to help adults learn, and andragogy is where learning strategies specific to adult learners can be developed. Experiential learning (Kolb, 1984) suggests that adults learn from life experiences. For example, an adult may gain the skills and desire necessary to become a chef from observing his parents and grandparents cooking family meals. Transformational or transformative learning (Merriam & Clark, 2006; Mezirow, 1990, 1991; also see Baumgartner, 2001; Comings & Cuban, 2007) proposes that adults enter into a learning situation, such as ABE, due to a traumatic, life-changing circumstance or event. An application of this learning theory would be one where an adult enrolls in literacy classes to fulfill the dream of a deceased family member who always prompted the adult to “get an education.”

Other adult learning theories include staged self-directed learning (Grow, 1991; Merriam & Clark, 2006), which suggests that adult learners progress from instructor-led learning to learning experiences they design and pursue on their own.

An adult student could begin learning to read in an organized classroom setting, then move on to select and read materials of their own choosing. Context-based learning (Hansman, 2001; Hase & Kenyon, 2001; Jarvis, 1983, 1987; Terry, 2006a, 2006b) theorizes that adults seek out learning experiences that supplement their stored knowledge, as they need it, to accomplish tasks or complete work-related or personal objectives. Another adult learning theory which focuses on adults' motivation to learn (Wlodkowski, 1999) posits that adults must be motivated to seek out adult learning programs and experiences, and that motivation is one of the main determinants of their persistence in achieving learning outcomes.

The research of Paolo Freire (2000, 2001) is foundational to many studies of low-literate populations, particularly those who are poor, oppressed, and disenfranchised. Freire (2000) believes that oppressed people should be encouraged to oppose the oppression brought on by low-literacy and poverty, advocating "praxis: reflection and action upon the world in order to transform it" (p. 51). He believes that educational projects should be conducted with the participation and cooperation of the oppressed, and that oppressed persons should assist in designing and executing such projects. Well-meaning though they may be, adult literacy educators and administrators talk about the people, but they do not trust them (Freire, 2000), which would be a precondition to allowing low-literate adults to help design their own literacy programs. Freire (2001) further condemns the banking concept of education which was the predominant pedagogy of the 20<sup>th</sup> century, and

is characterized by teachers, who believe they represent the repository of knowledge, pouring knowledge into their students, and then expecting those students to retain and repeat that information. These instructors rarely acknowledge or draw out the knowledge their students have accumulated over the years, and the students may even distrust their own knowledge gained through life experiences. The students instead defer to their instructors as the only legitimate teachers. Such behavior sustains the position of the oppressor, who seeks to maintain the status of the oppressed for various reasons, including the desire to perpetuate a low-wage, less educated workforce, along with a persistent welfare state (Freire, 2000, 2001). Many believe that this prediction has come true for many citizens in the Southern United States.

Freire (2000, 2001), Cazden (2000), Cope & Kalantzis (2000), Demetrian (2005), Hayes (2007), Kunjufu (2010), Lytle (2001), McShane (2005), Norris and Kennington (1992), Selber (2004), and The New London Group (1996), along with numerous other scholars, strongly support the involvement of adult students in the conceptualization and development of instructional programs. For instance, Lytle (2001) finds that,

When adults who enter programs are given the opportunity at the outset to explore a range of possibilities, they typically go beyond a general interest in “becoming better readers” to name particular reading and writing tasks they hope to accomplish, often for specific purposes and audiences (p. 395).

McShane also believes that educators must work together with students to design learning plans, in order to “consider individual goals and interests if you want to maintain [students’] motivation to learn and participate in your program... Adults’ real-life needs can’t be put aside completely while they develop reading skills” (p. 46).

Freire (2000, 2001) also urges researchers to engage in decoding the embedded community knowledge by using what are, in essence, ethnographic and grounded theory research methods, that involve listening to, and observing, these adults. Finally, Freire acknowledges the need for an interdisciplinary approach to modifying educational programs that that have remained unchanged for decades.

The theories and approaches of andragogy, experiential learning, transformational learning, self-directed learning, context-based learning, and adults’ motivation to learn can easily be applied to adult learners who already possess reading and writing skills (MacKeracher, 2004; Merriam, Caffarella, & Baumgartner, 2006), and especially those who enroll themselves in higher education courses. However, these theories may not be applicable to low-literate persons (McShane, 2005) because most of these theories are typically used to study adult learners who have sufficient reading and writing skills that allow them to seek advanced education beyond high school. Many low-literate adults have not completed high school, and others are pursuing reading literacy because state social service agencies have begun to make participation in organized education programs a requirement to

continue receiving public assistance or satisfying probation orders. Low-literate adult readers are also difficult to categorize, and Norris and Kennington (1992) remind us that these adults are diverse, multitalented, and function well in their communities. Hull (2001) goes on to say that “there are literate traditions other than school-based ones, and...these promote different practices with print” (p. 670). The reasons that low literate adults enroll in formal ABE programs also vary, suggesting intrinsic motivations to meet their educational and personal goals, and extrinsic motivation, such as governmental or correctional system requirements (Crowe, Byrne & Hale, 2001; Jenkins, 2006; Johnson-Bailey, 2001; Kruidenier, 2002; Kunjufu, 2010; Norris & Kennington, 1992; Petersilia, 2003).

**Learner persistence.** Those adults who are enrolled in such programs may already be motivated to learn, and welcome the requirement to improve their literacy skills. Even more relevant than adults’ motivation to begin formal instruction, however, may be these individuals’ persistence in continuing their learning, both in and out of classroom settings. Comings and Cuban (2007) define persistence as “Adults staying in programs for as long as they can, engaging in self-study or distance education when they must stop attending program services, and returning to program services as soon as the demands of their lives allow” (pp. 125-126). Learner persistence (represented as class attendance in ABE programs) is often viewed by adult education administrators as a measure of students’ progress toward the GED, as well as an indicator of the learner’s determination to stay enrolled. It is

this type of persistence, particularly the self-study aspect that may help us most in understanding how adults in these programs use communication technology outside of the classroom environment (Reder, 2007). Smith and Smith (2008) and Reder (2007) also point out that adults enrolled in ABE or General Educational Development (GED) programs engage in more informal learning compared to nonparticipants. However, “A reader’s motivation may...vary according to context, function, and text. And even motivation itself is varied: one may be moved to read by nostalgia, ambition, boredom, fear, etc.” (Szwed, 2001, p. 423). Adult basic education students may persist in their learning efforts for years, both inside and outside of organized programs, because they are personally motivated to improve their reading and writing skills. Additionally, today’s ABE students who are dedicated to the goal of improving their skills must commit to a long learning timeline (Comings & Cuban, 2007; Kozol, 1985; McShane, 2005), which in some instances may stretch to 10-12 years of continued enrollment.

Other research acknowledges that low-literate adults are not often queried regarding the type of learning that would be most meaningful to them (Churchill, Clark, Prochaska-Cue, Creswell, & Ontai-Grzebik, 2007; Demetrian, 2005; Flannery, 1994; Freire, 2000; Hayes, 2007; Kunjufu, 2010; Lytle, 2001; McShane, 2005), and educators may be unaware of students’ learning goals. In fact, in urban settings, Norris and Conceicao (2004) find that “there appears to be a grassroots demand for training and education even if it is coming at the expense of offering noneducational

information technology services to the community as a whole” (p. 76). Corder (2002), Norris and Kennington (1992), and The New London Group (1996) acknowledge the value of finding out what learners want, telling us that this is a way of indicating respect for these learners. These adults may not be clear about how they want to use literacy, but they know that gaining literacy skills is vitally important to their own well-being and that of their families (Cazden, 2000; Cope & Kalantzis, 2000; Maddox, 2007). Customized lessons and learning strategies may be the means to involve learners in the design of more personalized curricula.

In spite of the prevalence of theories and approaches applied to adult learners, low-literate adults are often excluded from this research. These learners do not fit the criteria of adults who are extending their education beyond high school, or those who are seeking continuing education for workforce development. The methodologies employed to study adult learners focus on those with advanced reading and writing ability, which leaves out low-literate adult populations who are unequipped to successfully pursue higher education. It is therefore difficult to apply existing adult learning theories to the specific group of learners profiled in this study.

**Studies on adult learners and technology use.** Research on adult learners and communication technology use is increasing (Blair & Hoy, 2006; Brown, 2002; Kruidenier, 2002; Milheim, 2007; Rosen, 2007), but previous studies were focused primarily on access to computers in instructional settings or for use in employment tasks (Berger, 2005; Frenette, 1996; Kotrlik & Redmann, 2005; Schmit, 2007; Scott &

Timmerman, 2005; Silver-Pacuilla, 2006; Snyder, Jones & Lo Bianco, 2005; Turner, Thomas & Reinsch, 2004). For instance, Frenette (1996) studied the introduction of three computer consoles in literacy classes, which were mainly used to play “videogames in the *beginner* classrooms” (p. 384). Frenette (1996) suggests that literacy students may have had difficulty using the computers individually, and the students’ limited reading skills were only sufficient to permit group lessons. Silver-Pacuilla (2006) looked at the use of computers in literacy instruction, particularly among adults who had been diagnosed with learning disabilities in the past. The author suggested that the computers were “assistive technology” (p. 114) that required a “coach” to focus on problem solving and function as a “frustration buffer” (p. 120).

In an application of Rogers’ (2003) diffusion of innovations theory, Berger (2005) studied ABE instructors’ likelihood of adapting and using computers in their classrooms. Instructors noticed that their students were excited about learning to read with computers, but also acknowledged that students moved off-task repeatedly, seeking out other Internet services. Again, as with Silver-Pacuilla’s (2006) study, instructors in these classrooms began to function as facilitators or guides, in an attempt to tailor their students’ learning; however, instructors were frustrated by the different reading levels of the students, making some group lessons impossible (Berger, 2005). Kotrlik and Redmann (2005) also found that instructors are not “experimenting with the use of technology...and they have not been

innovative in integrating technology at the advanced level” (p. 215). Although it is viewed by administrators as imperative that college level instructors, including ABE teachers, both use and teach with technology, these instructors may not have enough experience with technology themselves outside the classroom to learn enhanced computer features and functions that they can introduce to the students. Furthermore, these instructors may feel anxious and underprepared to incorporate multiliteracies (specifically computer literacy) into their pedagogy when their students are potentially more technologically competent than the instructors (Selber, 2004). Selber (2004) suggests that teachers adopt the stance of colearners, and “learn about, respect, and value the backgrounds and interests that have come to shape the literate practices of their students” (p. 201), a recommendation that may be even more relevant for adult basic education instructors.

The study that may be most relevant to the research effort discussed in this dissertation was conducted in Australia by Snyder, Jones and Lo Bianco (2005). These researchers sought to “investigate the implications for adult literacy education of the changing communication practices associated with...literacies” (Snyder et al., 2005, p. 20). Their objective was to analyze the role of technology in literacy programs in five sites (Snyder et al., 2005). The researchers interviewed students and their instructors, and found that the most effective teaching and learning involves human interaction, even when technology is used (Snyder et al., 2005), a finding confirmed by Adger, Wolfram & Christian (2007). Though technology use

was widespread, it proved not to be as effective and valuable when used without defined purpose, goals, and outcomes. The researchers also encountered an age disparity, finding that older adults, some in poverty and with debilitating health issues, were less amenable to, or comfortable with, technology use. Meyer, Talbot, Poon and Johnson (2001), Rosen (2007), Salkowitz (2008), and van Dijk (2005) also address generational differences and cognitive declines in older learners, and those with disabilities that would have to be accommodated to facilitate their use of communication technologies. Older adults also had less experience with basic computer commands and keystrokes (Luke, 2000; McCauley & Rice, 2007; Salkowitz, 2008). The Snyder et al. (2005) study differs from the research described in this dissertation, however, as the authors focused on technology use within an adult literacy education setting with a non-U.S. population.

Kamil and Lane (1998) acknowledge that there is plenty of existing research on the use of traditional communication technologies like film, audio and video recordings, television, and radio, but there is not a great deal of literacy research on the use of these technologies by low-literate adults. The call for continued research in traditional and new media technologies is growing, especially as new applications emerge. Smith and Smith (2008) agree that we need more research on the informal learning activities of ABE/GED participants (National Commission on Adult Literacy, 2008), and that we must investigate how adults' informal learning activities contribute to their formal learning (Findsen & Carvalho, 2007; Schreiner, 2007;

Weber, 1999; Wiley, 2005). Szwed (2001) sums up our dilemma with understanding literacy, and asserts that “the stunning fact is that we do not fully know what literacy is” (p. 422).

Despite this body of research, there is a significant gap in the scholarship regarding out-of-class technology use by low-literate adults (Reder, 2007; Rosen, 2007). We do know from the research that a great deal of the access to communication technology, especially for minorities and the economically disadvantaged, occurs outside of formal educational settings, and often happens through informal means (Churchill et al., 2007; Hull, Jury & Zacher, 2007; Reder, 2007; Smith & Smith, 2008; Williams, 2005). For instance, Churchill et al. (2007) found that rural families perceive computers both as learning tools, and as a way to have fun with their families. This research also identifies electronic media including television and computer games as sources of rural family entertainment (Churchill et al., 2007; Rosen, 2007). Many of these families valued having a computer in their home so much that one family reduced its junk food consumption to save for a computer (Churchill et al., 2007).

The digital divide, which will be discussed in more detail later in this dissertation, continues to surface as a major impediment to literacy achievement. In their chapter on gateways to technology, Selfe, Hawisher, Woodbeck, and Walikainen (2004) tell us that

Educators have also been aware that access to computers in this nation has remained aligned, in persistent and embarrassing ways, along the related axes of race and class. The statistical data documenting this trend indicate that students of color and poor students have been much less likely to have access to computer technology during the last two decades of the 20<sup>th</sup> century, both at home and at school, than have White students or students from families of privilege. (p. 83)

Huff and Rogers (2001) also discovered that higher levels of educational attainment, more than race, determine who will use computers in the workplace. Badagliacco (1990) and van Dijk (1999) suggest that computer-related jobs and activities are viewed as primarily being European American and male, so that minorities are discouraged academically from seeking careers that require high-technology skills.

In summary, most of these studies have generally focused on adult learners who possess at least the ability to read and write, or on their instructors, but have not specifically examined adult literacy students at the lowest levels, those students who read at the equivalent of the 0-2 grade level. Furthermore, previous studies have focused almost exclusively on computer-based communication technologies, but not on newer technologies that have emerged in the last five years, including mobile communication devices, iPads, and social networking applications. Kamil and Lane (1998) concur, pointing out that "...we know relatively little about the processes involved in reading hypertext. Are those processes the same [as reading

conventional text]? Are they different?...If the processes are similar, our current research methods may be sufficient. If not, we may need to ask new and different questions and to develop different methods for answering them” (p. 329). The study described in this dissertation represents one effort to use different methods to analyze these processes among low-literate adult students.

We are just beginning to understand how learning can be enhanced through video games, symbols, icons, emoticons, and other non-text based online resources (Detheridge & Detheridge, 1997; Hayes, 2007; Kalantzis & Cope, 2000b; Merriam, Caffarella, & Baumgartner, 2006). However, pertinent to the study discussed here, we also know that researchers have not collected and investigated many of the narratives of these students (Hawisher & Selfe, 2004). We know very little about the access and exposure to new communication technology that low-literate adults have at home (Carter, 2006; Rosen, 2007), or how restrictions on use of public computers assist or hamper use by these adults. For example, a young African American man interviewed by Selfe and Hawisher’s (2004) team actually looked forward to having online opportunities at home that he could not get at school, due to the access restrictions and limited software options on school computers. He emphasized that his ability to read and write gave him the skills to use computers both at home and at school, options that his low-literate family members and friends did not have. He told the researchers, ‘If you don’t know how to read and write then you are going to have trouble using computers, but they can help you read and write better’” (DeVoss,

Hawisher, Jackson, Johansen, Moraski, & Selfe, 2004, p. 199). This young man's comments suggest that, with a minimal ability to read and write, one could use computers to enhance literacy learning.

Adult learning theories and research efforts also have shortcomings, since most are designed to collect short-term, quantitative data that is typically used for planning, assessment, and reporting to oversight agencies, legislators, and nonprofit organizations to solicit funding (Demetron, 2005; Lyon, 2001; Norris & Kennington, 1992; Shore, 2004). Not only that, but there is a need for more qualitative research on what low-literate adults bring to the adult learning situation (Demetron, 2005; Selfe & Hawisher, 2004; Street, 1995). We also need to understand the desire of these learners to obtain knowledge that is immediately relevant and contextually appropriate (Askov & Bixler, 1998; Harreveld, 2004; Kalantzis & Cope, 2000b; Norris & Kennington, 1992; Purcell-Gates, 2007; Quigley, 1992; Selber, 2004; Sohn, 2006, Street, 1995). Additionally, more long-term, follow-up assessment of reading and writing program effectiveness for these adults is crucial data for instructional designers (Crowe et al., 2001; Gillespie, 2007; Prendergast, 2003; Street, 2001).

In addition to using a qualitative approach to studying low-literate adults, we should also look at the role of volunteer tutors in, and outside of, the adult literacy classroom, which is an aspect of community engaged, participant-observation research underrepresented in the literature (Belzer, 2006a, 2006b). Tutors are often used in ABE classrooms under the assumption that they can supplement instruction

and provide a real-world perspective on learning. However, there is insufficient data on the effectiveness of this strategy. Szwed (2001) believes that “assumptions are made in educational institutions about the literacy needs of individual students which seem not to be borne out by the students’ day-to-day lives...this relationship between school and the outside world...must be observed, studied, and highlighted” (p. 427).

We must also look at low-literate adult learners’ role models, both those who influence their learning, and those they may influence, such as grandchildren, other family members, neighbors, and acquaintances (Bishop, 2003; DiPardo, 2007; Donehower, Hogg & Schell, 2007; Kozol, 1985; Ogbu, 1999; Oliver, 2006; Terry, 2006a). For instance, one of Sohn’s (2006) students recognized her contribution as a role model.

I have influenced my siblings, though they won’t admit it. I was the first of all of us to graduate from high school, and then I graduated from college! Since then, two brothers and two sisters got their GEDs, and one sister went on to nurse’s aide training. (p. 91)

Huff and Rogers (2001) believe that grandparents who use different types of technology around their grandchildren can also serve as role models, and suggest that older African Americans who use computers and new types of technology directly influence their grandchildren, a phenomenon that also demands additional research (Brown, Hawisher & Selfe, 2004; DiPardo, 2007). It is important for us to learn how communication technology use can spread both upstream and

downstream in families (Kop, 2007; Qualls, 2001; Selfe & Hawisher, 2004), and how such use in literacy instruction can, in turn, help others in the family (Kozol, 1985). For instance, Kozol (1985) suggests developing a literacy plan tying the learning of parents and grandparents to the needs of preschool children, a proposal he made nearly 30 years ago. The study of literacy is particularly urgent when considering the potential adverse effects of low literacy and the inability to comply with health care directives (Bernhardt & Cameron, 2003; Cordasco et al., 2009; Duff, Singhal & Witte, 2005; Freire, 2001; Jayne, 1999; Kozol, 1985; Jibaja-Weiss & Volk, 2007; Ratzan & Parker, 2006; Rudd, 2007; Smith & Gonzales, 2005; Young, 2005). This represents a situation that threatens to diminish the level of health care these adults receive.

As “technological advances create new forms of illiteracy that frustrate and isolate individuals and groups of individuals” (Qualls, 2001, p. 6), it is imperative that researchers examine how low-literate adults are being affected by these developments (Hull et al., 2007; Kalantzis & Cope, 2000a; Selfe, 2006; Williams, 2006). Although the 2010 U.S. census could have been used to uncover some of this data, the designers of the basic census form appear to be repeating the procedures used in 1980, when Kozol (1985) found “spectacular miscalculations” (p. 15) by the Census Bureau, when it mailed printed forms to ask low literate respondents about their reading levels.

Based on this comprehensive review of the literature in adult literacy, a number of assumptions can be made about the population of low-literate adults in

this study. First, this population may have an over-reliance on traditional one-way communication technologies (Bernhardt & Cameron, 2003; Duff, Singhal & Witte, 2005; Jibaja-Weiss & Volk, 2007; Ratzan & Parker, 2006; Rudd, 2007; Smith & Gonzales, 2005; Young, 2005). They watch television and cable, listen to radio, use landline and mobile phones for voice, and converse by word of mouth (Kirsch, Jungeblut, Jenkins, & Kolstad, 2001; Young, 2005). In turn, these mainstream media sources have the potential to educate low-literate individuals. In a 2005 article in *The Wall Street Journal*, Young (2005) cited research that shows that Hispanics and African Americans embrace mobile technology at higher rates than whites, and that these groups may not have computers at home, leading to increased marketing of mobile phones and ring tones to minority buyers. Recent research by the Pew Internet and American Life Project bears this out (Rainie, 2010; Smith, 2010; Spooner & Rainie, 2010), and the data suggest that this technology may facilitate a new learning approach for low-literate adults. Applications designed to reduce and alleviate low literacy may now be in development, but they may not yet be available to adult literacy instructors.

We also find in the literature that informal learning occurs among those who use television, computer software, or the Internet to learn about a subject of interest, or for skill development (Donehower et al., 2005; Oliver, 2006; Reder, 2007; Rogers & Fuller, 2007; Smith & Smith, 2008). However, among mainstream populations, broadcast radio use is declining, while use of newer technology devices, such as

iPods, streaming media, etc., is increasing (Rose & Rosin, 2006; Selber, 2004). Low-literate adults are often reminded that they have access to the Internet at local and regional libraries and community technology centers (CTC's); however, those who cannot read may not frequent libraries or CTC's, or use the technologies and applications they find there. In addition, CTC's are typically not eligible for the E-rate which subsidizes information technology procurement and access in public schools (Servon, 2002), and therefore these facilities may have fewer resources than those available in schools. Even though these locations are the most logical places to offer digital skills to low-literate adults, most centers are not equipped with software, hardware, or trained personnel to address their specific needs (van Dijk, 2005), leading these adults to seek out the classes available from local community colleges and literacy councils.

There is also a stigma attached to being unable to read, and individuals who demonstrate low literacy may not readily admit to their lack of reading and numeracy skills (Bernardt & Cameron, 2003; Hull, 2001; Kunjufu, 2010; Lytle, 2001; Parker, 2000; Qualls, 2001; Quigley, 1992; Rigg & Taylor, 1979; Roman, 2004; Smith & Gonzales, 2005; Snyder et al., 2005; Wolf et al., 2007). As Kozol (1985) tells us, "Illiterates find it painful to identify themselves. In a print society, enormous stigma is attached to the adult nonreader" (pp. 30-31). Low-literate individuals may also be afraid of being taken advantage of by merchants and others who discover their low-literate status (Marbley & Ferguson, 2005), and they have become adept at

disguising their current literacy state (Ozanne, Adkins, & Sandlin, 2005; Purcell-Gates, 2001; Qualls, 2001). These adults may also resist registering for ABE classes where their lack of literacy skills would be obvious to classmates.

Low-literate adult students face many obstacles in their efforts to become literate, in part because it is more difficult to learn to read after age 15 (Abadzi, 2003). Beyond this, low-literate adult learners have problems recognizing different words with related sounds (Curtis & Kruidenier, 2005). The lack of reading fluency is also an issue with adult learners (Curtis & Kruidenier, 2005; McShane, 2004). Adults who perceive that they are unable to learn may exhibit shame regarding their situation (Freire, 2000; Rigg & Taylor, 1979; Van Vliet, 2008), and they may be reluctant to seek formal or informal learning opportunities, which, once enrolled, may take them years to achieve literacy (Comings & Cuban, 2007; Kozol, 1985; Kutner et al., 2007; Lévy, 1997). Street (1995) reinforces this concern, explaining that “Misconceptions about their own ‘illiteracy’, for instance, continue to debilitate many adults in situations where the stigma derives from a mistaken association of literacy difficulties with ignorance, mental backwardness and social incapacity” (p. 23). It is important, therefore, to conduct research efforts with sensitivity regarding these students’ perceptions of their reading ability (Brookfield, 1995), while also endeavoring to discover new knowledge about this underserved, invisible population.

Finally, it is crucial that we understand adults' desire to become literate as a separate issue from GED testing and employment readiness. As Carter (2006) and Hirsch (2006) conclude, tests have been presented as assessments of formal comprehension skills, making them unfair because they favor those who have prior knowledge of the test subjects. For instance, Dunbar-Odom (2007) expressed shock when she learned how her undergraduate students felt about standardized testing in Texas intended to help them complete high school. The students were angry that so many years of their schooling were spent being drilled and trained to take tests, and felt that such tests controlled their fate and future prospects. This reliance on tests to measure comprehension finds its way into employment application processes that low-literate adults encounter when seeking jobs (Appleby & Bathmaker, 2006; Hull et al., 2007). Other scholars (Hayes, 2007; Hull, 2001; Kozol, 1985; Sabatini, 2001; Weber, 1999) concur regarding this focus on preparing literacy materials that are job-related, and based on employer needs. Hull (2001) tells us, "basing instructional materials for literacy training on texts that are used on the job—application forms, brochures, warning signs, manuals, memos—is now almost an axiom for designing workplace literacy programs" (p. 666). This approach is readily apparent when reviewing the student workbooks used by ABE instructors (*Contemporary's Achieving TABE [Test of Adult Basic Education] Success in Reading, Level E*, 2006; *Contemporary's Reading Basics, Intermediate 1 and 2*, 2001; Fry, 2000; McNemara, 2003; Steck-Vaughn *Language Exercises*, 2006).

Such a focus relies on decontextualized theory and materials (Kalantzis & Cope, 2000b; Kozol, 1985; Kress, 2000; Prendergast, 2003; Purcell-Gates, 2007; Rogers & Fuller, 2007; Shore, 2004) that are unrelated to the lives of adult literacy students. This makes learning uncomfortable for both the students and their instructors, which could ultimately lead to students dropping out of programs (Bell, Ziegler, & McCallum, 2004; Comings & Cuban, 2007; Demetrion, 2005; Harreveld, 2004; Hull, 2001; Lytle, 2001; Williams, 2004). In typical literacy classrooms around the country, instructors must rely on GED-level workbooks to provide individualized instruction, which are often written above the level of low-literate adults, and far too few tutors are available to provide assistance (Belzer, 2006a, 2006b; McShane, 2005). Furthermore, some programs may even exclude students who do not fit the profile of those that administrators believe will succeed (Hallet, 2006; Johnson-Bailey, 2001; Rogers & Fuller, 2007). Expulsion from adult literacy programs may convince these fragile adult learners that they should discontinue their attempts to learn to read and write.

Since “industrial-model, print- and book-based practices of schooling will become less relevant in the age of virtual classrooms, hypertext, and online communities of learners” (Luke, 2000, p. 81), we are cautioned to design literacy instruction that benefits learners holistically, in ways that help individuals meet personal and professional goals, instead of creating courses and instructional materials with the objective of creating more workers (Freire, 2000; Williams, 2004).

As Freire (2000) tells us, “authentic thinking, thinking that is concerned about *reality*, does not take place in ivory tower isolation, but only in communication” (p. 77).

Discovering how low-literate adult students learn to use new and emerging communication technology will provide invaluable data for educators, program planners, technology and application developers, and others as we seek to address the continuing problems of low literacy in the United States. This review of the literature in adult literacy reveals that there is a gap between the existing theories, concepts, and approaches and the knowledge that is required to address 21<sup>st</sup> century challenges. If we do not address the issues of low-literate adults in our country, including questions about the role of communication technology, Kozol (1985) and others warn of dire consequences for our nation and our world.

This discussion of adult literacy literature is an important first step in understanding how low-literate adults receive instruction in the adult basic education system, and alerts us to the failures inherent in that system to assist those adults who have the greatest need to enter the 21<sup>st</sup> century communication environment. However, this understanding is incomplete without an overview of the relevant communication technology research, another important facet of the phenomenon described in this dissertation.

### **Communication Technology Research**

Craig (1999), in his overview of the field of communication theory, suggests that communication theorists should pursue “socially important goals, questions, and

controversies that cut across the various disciplinary traditions, substantive specialties, methodologies, and schools of thought that presently divide us” (p. 120). When considering the question of adult literacy and communication technology use, some scholars believe there should be a theoretical bridge between the two fields. Hobbs (1997) infers this connection, reminding us that “[t]he ability to *communicate* messages is at the heart of the traditional meaning of literacy, and the skills of writing and speaking have been highly valued by educators” (p. 167). This review of the literature suggests establishment of a theoretical bridge by examining the communication theories, concepts, and approaches that are most applicable to discovering how low-literate adult students use communication technology.

This research effort is most easily situated in the sociocultural and critical theory traditions, as defined by Craig (1999), since it seeks both to “acknowledge cultural diversity and relativity, [and] value tolerance and understanding” (p. 146) from the sociocultural tradition, and also to reflect “commonplace values of freedom, equality, and reason” (p. 147) in the critical theory tradition. However, since no single tradition of communication theory can be applied to the research questions, this section contains a review of the most relevant communication theory.

Communication technology research that focuses on media use is typically grouped into two areas: Theories, concepts, and approaches focused on the individual, and those focused on society as a whole. This section looks at each of these theoretical traditions.

## **Communication Theories Focused on the Individual**

There are a number of theories, concepts, and approaches focused on the individual that may be relevant to this study. The uses and gratifications theory (Blumler, 1979; Blumler, Gurevitch, & Katz, 1985; Katz, Blumler, & Gurevitch, 1974a, 1974b; Katz, Hass & Gurevitch, 1973; LaRose & Eastin, 2004; Lin, 2002; Papacharissi & Rubin, 2000) describes how the choice of media and its uses serve gratification purposes. Social presence theory (Fulk, Schmitz & Steinfield, 1990; Hwang, 2005; Lombard & Ditton, 1997; Lombard, Reich, Grabe, Bracken & Ditton, 2000; Rice, Chang & Torobin, 1992; Short, Williams & Christie, 1976; Tu, 2002) explains the appeal of phenomena that allow individuals to feel that far-away others are nearby. The diffusion of innovations approach (Atkin & Jeffres, 1998; Leung & Wei, 1999; Lin, 2001, Rogers, 2003) provides a framework for explaining innovations in technology. Each of these theoretical approaches has a rich history, a portion of which is relevant to this dissertation research.

**Uses and gratifications theory.** The uses and gratifications theory (Blumler, 1979; Blumler et al., 1985; Katz et al., 1974a, 1974b; Katz et al., 1973; LaRose & Eastin, 2004; Lin, 2002; Papacharissi & Rubin, 2000) is used extensively in communication research to explain the needs many individuals cite in their selection of communication media, along with the outcomes of their media selection. The approach suggests a typology of four needs for which individuals use most traditional media: diversion, personal relationship, personal identity, and

surveillance. The initial research efforts by Blumler et al., Katz et al. and others focus on what are now referred to as traditional mass media, including newspaper, radio, television, cinema (theatre movies), and books.

The uses and gratifications theory tells us that audience members are active, that they are able to discern the content of various media, and that they can make informed choices on the specific technology or technologies that will meet their needs (Blumler, 1979; Blumler et al., 1985; Katz et al., 1974a, 1974b; Katz et al., 1973). Uses and gratifications studies often use quantitative methodology, specifically surveys, to assess the needs and uses of individual media and technology users, and how those needs are satisfied (Dimmick, Chen & Li, 2004; Katz et al., 1973; LaRose & Eastin, 2004; Leung & Wei, 2000).

Research in the uses and gratifications approach is relevant to this study because, in previous studies, low-literate adults have been shown to use traditional communication technologies such as radio, television, and movies (Bernhardt & Cameron, 2003; Duff, Singhal & Witte, 2005; Jibaja-Weiss & Volk, 2007; Ratzan & Parker, 2006; Rudd, 2007; Smith & Gonzales, 2005; Wade & Schramm, 1974). These technologies are primarily non-text-based, are often one-way, sender-to-receiver media, and present content to an “audience.” The term “audience,” as it is referred to in the uses and gratifications literature, suggests that media users are active consumers who make conscious choices in program content and delivery technology (Blumler, 1979; Blumler et al., 1985; Dimmick et al., 2004; Katz et al.,

1974a, 1974b; Katz et al., 1973; LaRose & Eastin, 2004; Lin, 2001, 2002; Papacharissi & Rubin, 2000). Therefore, the uses and gratifications theory, when applied to traditional media, may help illuminate the question of low-literate adults' communication technology use.

**Social presence theory.** Social presence theory (Biocca, Harms & Burgoon, 2003; Fulk et al., 1990; Hwang, 2005; Lombard & Ditton, 1997; Lombard et al., 2000; Rice et al., 1992; Short et al, 1976; Tu, 2002) contains concepts that could be relevant to this study. The capabilities of some non-text-based, traditional communication technologies (such as telephones and photographs) do provide the illusion that another person(s) is nearby (Fulk et al., 1990). Television, radio and movies provide the sensation of “being there,” and, historically, “the more any medium triumphed over distance, time, and embodied presence, the more exciting it was” (Marvin, 1988, p. 194). Social presence theory also represents “the sense that one is together with another” (Biocca et al., 2003, p. 472). Landline and mobile phones, and web cams, particularly, blur the sense of distance and provide the sensation of physical closeness with a loved one, friend or colleague (Lombard & Ditton, 1997; Lombard et al., 2000; Short et al., 1976).

Among other definitions of social presence, Lombard and Ditton (1997) describe it as a “you are there,” “it is here,” and “we are together” transportation phenomenon (p. 3). Low-literate adults are very familiar with using phones and photographs in this manner, simulating the physical presence of others (Bernhardt &

Cameron, 2003; Duff, Singhal & Witte, 2005; Jibaja-Weiss & Volk, 2007; Ratzan & Parker, 2006; Rudd, 2007; Smith & Gonzales, 2005). Other social presence studies indicate that electronic media may provide a stronger sense of social presence than static, written media (Lombard & Ditton, 1997), and these media are characterized by “sensory richness or vividness” (p. 6). However, if “social presence should be conceptualized as a transient phenomenological state that varies with medium, knowledge of the other, content of the communication, environment, and social context” as Biocca et al. (2003, p. 469) suggest, then we clearly have much more research to do on the use of emerging technologies, such as Skype and texting, on non-traditional populations like low-literate adults. Social presence is most often assumed to occur when a person is using a communication medium (Lombard & Ditton, 1997; Lombard et al., 2000), and is characterized by the sensation that there is no medium between users of communication technology (Lombard & Ditton, 1997). Most important and relevant to this study is the fact that using 21<sup>st</sup> century text-based communication technology to evoke the highest levels of social presence assumes that the users are text literate, able to read, write, and type text.

**Diffusion of innovations.** Rogers’ (2003) diffusion of innovations theory (Atkin & Jeffres, 1998; Leung & Wei, 1999; Lin, 2001) defines diffusion as the interaction of four basic elements: an innovation, communication channels, time, and a social system (“interrelated units engaged in joint problem solving to accomplish a common goal”) (p. 23). Diffusion of innovations, and its familiar S-curve adoption

graph demonstrating the course of an innovation over time as it is adopted from innovators to laggards, is a highly regarded theory, and is often applied to the dissemination of new communication technology. Rogers (2003) identifies five categories of innovation adopters: innovators (those who desire to be first to adopt a new idea and accept risks), early adopters (opinion leaders, role models for the average individual), early majority (those who deliberate for some time before adopting an innovation), late majority (who adopt technology due to economic necessity after almost everyone else has used the innovation), and laggards (last to adopt an innovation, often due to limited economic resources).

Despite these separate categories of innovation adopters, Rogers (2003) tells us that there are commonalities among all the individuals who adopt an innovation. Rogers (2003) assures us that we can force people to adopt certain innovations through social marketing, using marketing channels including the media, to communicate and promote nonprofit issues, services, and desired behavior changes. The author refers to seat belt and anti-cigarette campaigns as examples of such innovations. More recent examples would be the move of a southeastern county school system to shift all student assignment information to the Internet, in a move toward efficiency. Parents with inadequate computer access were unable to participate in the first-come, first-served process, and only later received assistance from the school system in the form of neighborhood on-site registration days. Ultimately, all parents will have to participate in the assignment process online.

Diffusion of innovations is relevant to this study, as low-literate adults possess characteristics similar to late majority and laggards, described in the literature as individuals who delay or resist adopting an innovation until system, peer, or economic necessity require that they proceed to technology adoption. According to this research, late majority and laggards become poorer because they cannot afford to participate in early adoption, and are in a race to catch up to others who have previously adopted the innovation (Lin, 2001). Additionally, the pro-innovation bias cited by Rogers (2003) and others (Norris, 2001; van Dijk, 2005) as a shortcoming of diffusion research is a characteristic of Western and developed countries, Pro-innovation bias assumes that everyone wants and needs an innovation, and social systems are set up to support and promote the innovation. The Facebook and Twitter appeals on television news programs are examples of this phenomenon. Rogers (2003) acknowledges that because of pro-innovation bias, we have more research on the successful adoption of an innovation than we do about its rejection, and more data on rapidly spreading innovations and their users than on those who slowly adopt innovations.

Rogers (2003) also points out that diffusion researchers and “change agents generally give little attention to consequences” (p. 436), and disadvantages of an innovation are rarely highlighted. Nonadoption is also rarely studied, as Leung and Wei (1999) found in their research on nonadoption of mobile phones. Surveys and other quantitative methods predominate in the study of innovation (Atkin & Jeffers,

1998; Dupagne & Selwen, 2005; Rogers, 2003; Whitacre, 2010). Moreover, in the 21<sup>st</sup> century technology environment, an innovation is not just one, singular media product, but may be a multifunctional device (van Dijk, 2005), such as the iPhone or tablet computer. It is possible that many low-literate adults desire to be early adopters of the iPhone, for example, but they may not have the literacy skills or economic means to evaluate, purchase, and use the devices (Lin, 2001; Rogers, 2003; Scott & Timmerman, 2005; van Dijk, 2005). Rogers (2003) suggests that adopters “want to participate actively in customizing an innovation to fit their unique situation” (p. 17), and when they do so, the innovation diffuses more rapidly. For example, use of cell phone ring tones is not restricted to those provided in the phone, but can also be selected and downloaded to fit the taste of the user. Rogers also stresses the influence of interpersonal channels in an individual’s acceptance of a new idea. For instance, low-literate adults may hear alternative ring tones or see an application (app) on their acquaintances’ phones, and may then be persuaded to choose to download the app for themselves, especially when they learn that they are not confined to simply using the default ring tones, for instance.

The related area of communication technology adoption research (Atkin & Jeffres, 1998; Dupagne & Selwen, 2005; Lin, 2001, 2003) indicates that the factor of ethnicity has not been sufficiently studied to determine its effect on technology adoption. In fact, studies by Atkin and Jeffres (1998), Lin (2001, 2003), and Scott and Timmerman (2005) focus on populations that come from a higher

socioeconomic status and clearly possess advanced reading skills. These scholars optimistically believe that we are experiencing “declining technology costs and a rapidly growing ‘technological culture’ influencing the entire social spectrum” (Lin, 2003, p. 360), and suggest that, once users adopt one group of technologies, they will adopt other related technologies (Lin, 2001), despite having had negative experiences with technology (Scott & Timmerman, 2005).

### **Communication Theories Focused on Society**

Other communication theories, concepts, and approaches focus on society as a whole. The digital divide concept (Katz & Rice, 2002; Rice & Katz, 2003; Rice & Katz, 2008; van Dijk, 2005) speculates that lack of Internet access is generating adverse social consequences, particularly for those who do not have the economic means to obtain digital technology, or who find the technology too complicated to use. The New Media Theory concept (Castells, 2000; Cover, 2004; Hamelink, 2000; Jenkins, 2007, 2008; Keren, 2006; Landow, 2006; Lévy, 2001; Manovich, 2006; Poster, 1995; van Dijk, 1999) addresses the proliferation and effects of the newest communication technology and networks. The knowledge gap hypothesis (Eveland & Scheufele, 2000; Kwak, 1999; Tichenor, Donohue, & Olien, 1970) suggests that those with higher socioeconomic status are likely to have benefitted from greater dissemination of mass media information which increases knowledge acquisition. Here I will discuss how each of these theories and concepts may apply to this dissertation research.

**Digital divide concept.** Regarding the concept of the digital divide (Hamelink, 2000; Katz & Rice, 2002; Kuttan & Peters, 2003; Mack, 2001; Mossberger, Tolbert & Stansbury, 2003; Norris, 2001; Rice & Katz, 2003, 2008; van Dijk, 2005), research has been conducted that is relevant to this study. The digital divide is often referred to as the division of the “information haves and have nots” (van Dijk, 2005), representing those who have, or do not have, access, skills, and experience in using computers and communication technology (Kuttan & Peters, 2003; Mack, 2001; Rosen, 2007; Servon, 2002). For instance, the characteristics of those on the “losing” side of the divide correspond with the description of low-literate adults, and Norris (2001) tells us that “basic literacy...reading and writing skills...are currently essential to using this media” (p. 59). The research confirms lower use of the Internet by those who are less educated, have lower income, and who are older (Rice & Katz, 2003; Roman, 2004; Salkowitz, 2008; van Dijk, 2005). In fact, Rice and Katz (2003) find that “large gaps in Internet usage associated with respondents’ education level are consistently found in various studies” (p. 599). Moreover, van Dijk (2005) asserts that “[t]he most serious problem in regard to educational participation and ICT [information and computer technology] access is adult education” (p. 171), and he recommends that adult education programs expand their curricula to include learning digital skills.

These studies also acknowledge that the digital divide is an international problem that is multifaceted, and is not specifically based on single characteristics

such as race, age, gender, income, etc. (Bugeja, 2005; Hamelink, 2000; Katz & Rice, 2002; Kawamoto, 2002; Norris, 2001; Rice & Katz, 2003; Servon, 2002; van Dijk, 2005). Digital divide research also suggests that two of the main reasons for Internet dropout by low income users with less education are first lack of access, and second, that the Internet is too hard to use. Both of these responses mirror the experience of low-literate adults who are seeking literacy skills (Katz & Rice, 2002; Kawamoto, 2002; Rice & Katz, 2003; van Dijk, 2005). Interestingly, the disconnected who do not own cell phones or computers, and lack Internet connectivity, are more likely to be black, older, living in smaller households, and without a college degree (Kalantzis & Cope, 2000a; Katz & Rice, 2002; Rice & Katz, 2003; van Dijk, 2005).

There is also a growing body of literature that identifies a digital divide in terms of mobile phone use, though definitive studies of this emerging phenomenon are limited (Rice & Katz, 2003). Studies by Rice and Katz (2003, 2008) and the Pew Internet and American Life Project (Rainie, 2010) indicate that use of mobile phones with wireless Internet features by African Americans (59% wireless Internet) and Hispanics (62% wireless Internet) actually exceeds that of whites (52% wireless Internet) (Rainie, 2010). This may be explained because many low income persons and minorities often have cell phones in lieu of landline phones or home Internet connectivity. This wireless usage “has not attracted the attention of the scholarly community or policy-makers to a significant degree, unlike the Internet” (Rice & Katz, 2003). In addition, those who drop their mobile phone service have not been studied

sufficiently (Rice & Katz, 2003; van Dijk, 2005), but these former users cite the complexity of using cell phones and their features as reasons to discontinue their mobile phone service (Rice & Katz, 2003).

Many low income and minority users are just now beginning to use their mobile phones for more than the basic features of voice service, cell phone camera, and texting (Smith, 2010). Today's mobile phones offer much more than voice service, potentially adding to the difficulty for some low-literate adults to use these technologies. As van Dijk (2005) finds, "[t]he smaller a device with computer functionality becomes, the more problems it poses" (p. 98). However, there are indications that younger minorities are using mobile phone Internet connectivity to text, email, send Twitter messages, and update Facebook status (Katz & Rice, 2002; Smith, 2010). African-Americans and 18-29-year-olds, in particular, lead the way in the use of cell phone data applications (Smith, 2010).

Despite efforts by municipalities and school systems to increase access to computers and the Internet, van Dijk (2005) finds that "the digital divide is deepening where it has stopped widening" (p. 2), particularly in developed countries where hardware costs have gone down, but lack of training and high costs for software and connectivity persist (Servon, 2002; van Dijk, 1999). The most recent study on African American Internet use by the Pew Internet and American Life Project (Spooner & Rainie, 2010) finds that

The gap in access between African-Americans and whites is closing, but African-Americans still do not have the same level of access to the Internet as whites. African-Americans with access to the Internet do not go online as often on a typical day as whites do. And online blacks do not participate on a daily basis in most Web activities at the same level as online whites. (p. 4)

There are also information “want nots” (van Dijk, 2005, p. 27) who decline to use newer communication technologies for a number of reasons, including cost and lack of training (Hamelink, 2000; Rice & Katz, 2003, 2008; van Dijk, 1999, 2005). In fact, 20% of online blacks surveyed in the Pew Internet and American Life Project say they would not miss the Internet at all if they were to lose access (Spooner & Rainie, 2010).

Specifically, van Dijk (2005) suggests that “more perceptual and creative skills are required [to use computers] than just reading and writing” (p. 73), and he argues that we “should not underestimate the problems many senior, disabled, low-educated people and manual workers have in performing even the simplest operations on keyboards” (p. 75). Hamelink (2000) concurs, pointing out that we do not know if access to more information will lead to “the social empowerment of disenfranchised individuals and to the creation of a more egalitarian society” (p. 19). In fact, Selwen (2002) suggests that “the government presence online may create a wider gap than that which already exists” (p. 15). The “‘experience gap’ between the races” (Spooner & Rainie, 2010) may explain why we do not have sufficient

longitudinal data, particularly on African American use of the Internet to achieve personal improvement and social change.

**New media theory.** New media theory scholars, beginning with Mark Poster (1995), and including Castells (2000), Lévy (1997, 2001), Jenkins (2007, 2008), Manovich (2006), and others (Hamelink, 2000; Keren, 2006; Landow, 2006; van Dijk, 1999) study the proliferation of new communication technology, networks, and effects on technology users. Poster (1995) heralds the era of new media, correctly predicting that “with the incipient introduction of the information ‘superhighway’ and the integration of satellite technology with television, computers and telephone, an alternative to the broadcast model, with its severe technical constraints, will very likely enable a system of multiple producers/distributors/consumers, an entirely new configuration of communication relations in which the boundaries between those terms collapse” (p. 3). Manovich (2006) concurs, suggesting that “we are in the middle of a new media revolution—the shift of all culture to computer-mediated forms of production, distribution, and communication” (pp. 5-6). Higgins (1999) even suggests that creators of new television programs develop a form of “‘media literacy’ as individuals learn how to ‘read’ and ‘write’ media codes” (p. 625). Inevitably, though, as we have seen with Twitter, Facebook, and blogs, as well as online pornography, hackers, and hate group websites, the open systems model on which the Internet was developed instead allows “fringe groups opportunities to conjure up new modes of communication that continue to surprise us” (Sawhney & Lee, 2005).

The “new configuration of communication relations” (Poster, 1995, p. 3), and the “computer media revolution” (Manovich, 2006, p. 5) may indeed have positive results for significant numbers of citizens, but may also threaten to adversely affect those who are delayed in making the shifts these authors describe.

Jenkins (2006) informs us that consumers will have the ability to bring disparate formats together and remix them to make new forms of communication products and applications. Lévy’s (2001) view of new media touts the availability of information online, and informs us that “the most recent information will be easily and directly available through on-line databases and the World Wide Web...Education will become a driving force of the collective intelligence for which it is responsible” (p. 151). He goes on to predict that “the new possibilities for distributed collective creation, cooperative learning, and networked collaboration provided by cyberspace challenge the way our institutions operate and conventional methods for the division of labor in business as well as education” (p. 152). However, Lévy (1997) also tells us that, in the future world of collective intelligence, even the unemployed, impoverished, and illiterate among us are resources of knowledge, and that new communication systems should support a “virtual universe of knowledge” (p. 14). He later acknowledges that new communication technologies can accomplish this “if available to every citizen” (pp. 60-61), including those with the least education and income.

We find, therefore, that this world of new media may come at a cost to those who cannot read and write to function successfully in a network environment, and who do not receive the education and training to use the new technology (Poster, 1995; van Dijk, 1999). Castells (2000), for instance, issues a word of warning for those who may not be able to accumulate sufficient skills in information and communication technology, pointing out that, “a new production system requires a new labor force; those individuals and groups unable to acquire informational skills could be excluded from work or downgraded as workers” (p. 281). Just as important, those who are familiar with and comfortable using technologies with single functions, such as radio, now find themselves in a world of “multi-functionality” (Lehman-Witzig & Cohen-Avigdor, 2004, p. 718), where several technologies and applications are packaged together and exhibit interdependence, leading to the phenomenon of multitasking (Ball, 2004; Lehman-Witzig & Cohen-Avigdor, 2004). In this new world, we are more likely to encounter “new media text [that] might include sound, graphics, video, animation, and/or written words” (Ball, 2004, p. 405). Not only that, but content producers and developers of new communication technologies make the assumption that they will produce content for multiple platforms, and specialization in broadcasting, for instance, will no longer be acceptable (Jenkins, 2007), further limiting information sources for low-literate adults.

Several studies of new media that may be relevant to the research described in this dissertation suggest that by grouping technologies under the mantle of “new

media,” researchers may, in fact, actually mask the usage of individual technologies among certain cultures (Cover, 2004; Lehman-Witzig & Cohen-Avigdor, 2004; Leonardi, 2003; Lievrouw, 2004). Leonardi (2003), for instance, used focus groups of Latino adults to discuss their use of cell phones, computers, and the Internet, collectively considered as information and communication technologies (ICT). The study revealed that persons of Latino descent readily adapted to the use of cell phones, as these devices facilitated interpersonal communication that was important in their culture. However, Latinos in the study believed that computers and the Internet lead to isolation and may damage efforts to maintain positive communication (Leonardi, 2003). It is possible that the text-based nature of computers and the Internet inhibit what Latinos see as a more intimate, acceptable means of communicating.

Sawhney and Lee (2005) provide some insight into adoption of new media by pointing out that arenas of innovation are created by fun-seekers who are not looking for commercial gain. This may explain the greater use of texting and web-based cell phone applications by literate minorities (Rainie, 2010; Smith, 2010; Spooner & Rainie, 2010), as well as the growth of Facebook pages among this group. Instead of seeing the Internet as a commerce-generating technology, or as an educational tool, many of these users simply seek to connect with others quickly and easily for entertainment purposes. Although Sawhney and Lee (2005) find “the barriers to entry for joining the community are low” (p. 405), this may apply more to

the financial cost of the media than the learning curve required to use these text-based technologies.

In his study of the world of blogging, Keren (2006) finds that the phenomenon is best understood in terms of “life writing research” (p. 7) that focuses on the creation of autobiographical works. The same individuals who tend to blog are also those who use text to create journals, write memoirs and personal essays, and produce travelogues. This mode of self-expression in the public sphere is particularly available to those who are able to write, and who also are able to read and respond to text in the replies of their blog readers. Unlike those for whom reading and writing is a struggle, Keren (2006) tells us that “life in cyberspace is an escape for many Internet users” (p. 23), and that many bloggers are engaged in “cult-like behavior” (p. 26), believing “that they are part of a complex system generating a higher intelligence” (p. 27). However, Keren (2006) acknowledges that use of the Internet remains limited by the digital divide. Furthermore, instead of the blogosphere becoming a place of “higher intelligence” (p. 27), others find that bloggers may be the sources for spreading ridiculous ideas, “unsubstantiated rumors and...irresponsible statements” (p. 69) that may not be vetted or correctly interpreted by those with limited reading and writing skills, or access to other clarifying sources.

Critical theorist and new media scholar Landow (2006) goes further, suggesting that hypertext, Internet language that represents linked text, images, graphics, and files, will change the role of teacher and student, along with the role of

writer and reader. Past assumptions of what constitute readers, writers and texts must now be reconsidered in a new world where “hypertext systems promise—or threaten—to have major effects on literary education” (p. 272). As hypertext heralds a newer means of obtaining and processing knowledge, it also has the potential to build even more distance between those learning to read and write using traditional tools, and those who have mastered basic computer operations that now include the production and use of hypertext (van Dijk, 1999). Hypertext assumes that the student is more engaged, self-paced, and self-directed, but those who are not active seekers of information may be deprived of instructional support in the learning environment (Hamelink, 2000; Landow, 2006; van Dijk, 1999).

Despite Landow’s (2006) optimistic view of the ways hypertext will assist the “unconventional student” (p. 282), low-literate adult students may not be the most likely candidates to choose their own reading paths. We may also be some distance away from the point where adult literacy instructors and their classrooms are equipped to prepare and present hypertext-based lessons. Landow (2006) is correct, however, in pointing out that adult basic education (ABE) has yet to take full advantage of the benefits of the Web and hypertext because so many instructors and institutions “still think in terms of the book” (p. 314).

New media scholars suggest that we must revisit and revise traditional theories and perspectives to address the phenomena brought about by emerging technologies (Cover, 2004; Craig, 1999; Lin, 2003; Röhle, 2005). Cover (2004)

reminds us that “New media is defined by non-linearity, whereas the range of media theories and their subsequent research tools and methodologies that have developed during the twentieth century...continue to presume a linearity to the process of media communication that relies on a fixed idea of authorship, text and audience” (p. 174). Clearly, we are at a point in the evolution of communication technology where we must develop new theoretical approaches to describe and explain these phenomena.

**Knowledge gap hypothesis.** Finally, early research on the knowledge gap hypothesis (Eveland & Scheufele, 2000; Kwak, 1999; Tichenor et al., 1970), focused primarily on differences in political knowledge and participation gained from media use between those of high and low socioeconomic status (SES). These early studies reflect the use of one-way communication technologies in information dissemination, and conclude that those with higher SES acquire information faster than those with lower SES (Tichenor et al., 1970). Those with higher communication skills also have better reading and comprehension ability to access political information, public affairs information, and science knowledge (Tichenor et al., 1970).

Researchers have only recently begun to study the knowledge gap hypothesis as it applies to the Internet (Curran, Iyengar, & Salovaara-Moring, 2009; Jeffres, Neuendorf, & Atkin, 2003), and studies of the newest digital media technologies and their effects on recent political campaigns are most likely being conducted now. Other knowledge gap studies extend the focus of this hypothesis to

include participation gaps (Cho & McLeod, 2007; Thorsen, Jan, & Beaudoin, 2003), finding that nonreaders were less participatory; readers' education level is a "strong predictor of political knowledge" (Cho & McLeod, 2007, p. 219); and there is a persistent knowledge gap between social groups (Curran et al., 2009) and those with lower education levels (Liu & Eveland, 2005).

As the existing literature in both adult literacy and communication technology relevant to this study demonstrates, there is no one theory that can be applied to explain low-literate adults' use of new and emerging communication technologies. Even using existing measurement tools from these theories, concepts, and approaches is problematic, since most of the data collection instruments were not developed with low-literate adults in mind (Röhle, 2005). Furthermore, quantitative methodologies do not allow us to hear in detail from the individuals themselves, and leave us with insufficient descriptive information to fully understand their motivations for using or not using new communication technologies (Lyon, 2001). New interdisciplinary studies, such as this dissertation research, are required to provide explanations for these adults' behaviors and uses of communication technology that have not been examined in the past (Cope & Kalantzis, 2000; Craig, 1999; Denzin & Lincoln, 2005; Lievrouw, 2004; Röhle, 2005).

## Bridge Between Adult Literacy and Communication Technology Theories

Although there is not an established theoretical bridge between these two previously unconnected disciplinary areas, some linkages between the disciplines are apparent. For instance, as shown in the following table, several adult literacy

Table 2.1.

### *Suggested Bridges Between Adult Literacy and Communication Theories*

<u>Theories, Concepts and Approaches</u>		<u>Potential application</u>
<u>Adult literacy</u>	<u>Communication Technology</u>	
Staged, self-directed learning	Uses and gratifications theory	Student decides how to text in 3 steps
Transformational or transformative learning	Social presence theory	Student's relative communicates with deployed soldier via Skype
Context-based learning	Digital divide concept	Neighbor teaches parent how to choose public schools online
Adoption of computer technology in adult literacy classrooms	Diffusion of innovations	Rollout of tablet computers for use in adult literacy classes

theories and concepts may share common characteristics with communication theories and approaches, and may be represented in several potential applications.

Another way of portraying the bridge between adult literacy and communication

technology can be seen in Figure 2.1., where theories from each discipline are shown on opposite sides of the bridge. The girders shown below the bridge represent theoretical approaches that could be shared between the disciplines, potentially leading to a newly constructed curriculum for adult literacy students.

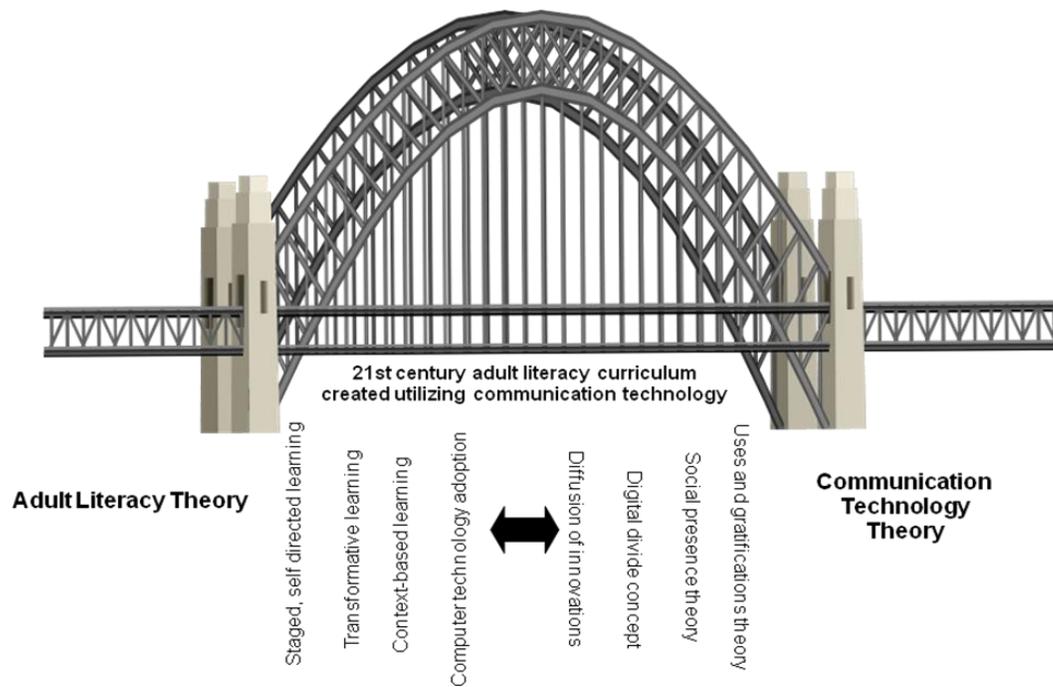


Figure 2.1. Theoretical approaches of adult literacy and communication technology exist on opposite sides of the bridge.

The aims of this dissertation research are to identify the ways low-literate adults use existing and emerging communication technologies, to develop an understanding of the challenges these adults face in negotiating new technology, and to document their self-identified aspirations for learning how to use new

technology. By studying these issues, I hope to provide a foundational study that will encourage communication researchers, application developers, adult literacy instructors and students to design studies of technology adoption by this unique group of learners, potentially leading to new curriculum development.

### **Research Questions**

In order to learn how new communication technologies are being used by low-literate adults, it is necessary to discover how much individuals in this population have been exposed to and use these devices. To uncover the behaviors I wished to investigate, I developed the following research questions. The interview guide was derived from these questions (Appendix A), which is modeled from questions included in the interview protocol developed by Selfe and Hawisher (2004).

RQ1: How does communication technology function in the everyday lives of low-literate adults enrolled in adult literacy programs?

RQ2: What challenges do low-literate adult students face when learning to use communication technologies?

RQ3: What do low-literate adult students hope to gain from their imagined future uses of technology?

These questions form the basis of the study and include queries to elicit data on familiarity with communication devices and applications, such as basic mobile phone, text messaging, I-pods or mp3 players, Internet, streaming media, and online

job applications; whether the participants use any of these technologies to communicate with family and friends; and if they ever ask friends or family members to do things on the computer for them. Additionally, it is important to learn if these low-literate adults are required to use any of these technologies for work, when, where and how they learn to use these technologies, and if they use these technologies for fun.

Qualitative methodology, using the principles and tools of grounded theory in an ethnographic framework, provides a means for scholars to more fully comprehend the issues faced by low-literate adults. As Tedlock (2001) tells us, “Since we can only enter into another person’s world through communication, we depend upon ethnographic dialogue to create a world of shared intersubjectivity and to reach an understanding of the differences between two worlds” (p. 67). This methodology allows for new theoretical concepts to emerge that combine existing adult learning and communication theories described previously, along with new insights into communication technology use by adult learners in general.

This study follows qualitative research design principles consistent with dissertation preparation, which includes development of a research question(s); conducting a literature review(s); selecting a methodology to collect data; moving to field research; performing data analysis, including intercoder reliability; and presentation of results.

## Chapter 3

### Method

This research study is a qualitative ethnography which uses a methodological approach based on grounded theory principles and tools (Glaser & Strauss, 1967, 1994). Grounded theory provides flexibility in data collection, and its ability to support emergent design and iterative data collection and analysis allows the data itself to describe the phenomena observed in the field. This approach provides the opportunity for the study subjects to speak for themselves (Glaser, 1992). When combined with a qualitative approach, featuring ethnographic data collection techniques (Haddan and Lester, 1994), data from interviews and observations provide thick description of the behaviors under study (Arnett, 2007; Heath & Street, 2008; Lincoln & Guba, 1985; Miles & Huberman, 1984; Patton, 2002; Spradley, 1979; Van Maanen, 2001). This research approach more closely identifies and illuminates communication technology uses among this population.

I argue that the use of grounded theory principles and tools is appropriate for studying “basic social processes” (Starks & Brown Trinidad, 2007, p. 1373; also see Giske & Artinian, 2007; Thomas & James, 2006). This method helps us “in investigations of relatively uncharted waters, or to gain a fresh perspective in a familiar situation” (Stern, 1994, p. 116). A grounded theory approach in qualitative research relies strongly on ethnography (Haddan & Lester, 1994; Lindlof & Taylor, 2011; Timmermans & Tavory, 2007), in contrast to “the traditional inquiry

characteristic of quantitative research which posits a deductive approach (one begins with a theory and then tests or examines it)” (Chesebro & Borisoff, 2007, p. 10; also see Bryant & Charmaz, 2007a). The flexibility of the qualitative method and grounded theory principles and tools assist the researcher in dealing with “the difficulty of getting credible accounts from site informants” (Miles & Huberman, 1984, p. 19) by incorporating data such as documents and observations, that help to triangulate data from interviews.

Ethnography, as conducted in this study, is defined as the collection of data while immersed as part of a culture and social system, resulting in thick description of people and their environment (Heath & Street, 2008; Lincoln & Guba, 1985; Lindlof & Taylor, 2011; Lyon, 2001; Machin, 2002; Patton, 2002; Poindexter & McCombs, 2000; Reinard, 1998; Singer, 2009; Spradley, 1979; Tedlock, 2001; Timmermans & Tavory, 2007). Szwed (2001) points out, “ethnographic methods...are the only means for finding out what literacy really is and what can be validly measured” (p. 427), and he suggests that field observations, “writing autobiographies,” recorded personal statements, and content analyses of reading materials are effective methods for understanding “one American sub-community’s literacy needs and resources” (p. 429). Hull (2001) concurs, suggesting that “We need...to seek out the personal stories of workers...and to learn what it is like to take part in a vocational program or a literacy class and what effect such an experience has, really, on work and living” (p. 682).

Use of grounded theory tools ultimately leads to the development of “theory that emerges from the researcher’s observations and interviews out in the real world rather than in the laboratory or the academy” (Patton, 2002, p. 11), which is particularly applicable to studies of the beliefs and goals of participants as they engage in, and reflect on the questions under study. The use of grounded theory principles and tools ensures that results contain “empirical material [that] is rich and luscious, thickly and luminously described” (Timmermans & Tavory, 2007, p. 507) through the use of constant comparative analysis techniques (Bryant & Charmaz, 2007a, 2007b; Charmaz, 2005; Glaser & Strauss, 1967, 1994).

The ability to present research results that are accessible to non-academic and non-governmental audiences is another appeal for using this approach (Green, Creswell, Shope, & Plano Clark, 2007). Using such an approach in an interdisciplinary, qualitative study is ideal when existing theories, such as the separate theoretical traditions in adult learning and communication, may not be applicable to more than one discipline (Glaser, 1992; Charmaz, 2001; Denzin & Lincoln, 2005; Lincoln & Guba, 1985; Seaman, 2008).

Grounded theory methodological principles and tools were used in this study because it is an effort encompassing the fields of communication and adult learning, two fields with separate and distinct theoretical legacies. These two academic fields have rarely been combined in a research effort, and therefore using measurement instruments from existing communication theory and adult learning theory in isolation

would not be able to account for phenomena investigated in this study. Street (1995) suggests that such an approach is necessary to fully address the issues of adult literacy. He tells us that “the teacher, the curriculum designer and the programme developer, whether in industrialized societies facing ‘new times’ or in ‘development’ programmes, need to have an understanding not only of educational theory, but of linguistic theory, of literacy theory and of social theory” (p. 136). I suggest that communication theory must also be included to obtain a clearer picture of low-literate adult technology use. This study follows Street’s suggestion to provide a more comprehensive view of emerging technology use by this unique group of individuals.

At the end of my field research, I performed a typological analysis of all collected data using the grounded theory tools of simultaneous data collection; open coding; development of codes and categories; conceptual memos; development of a core category; theoretical sampling; constant comparative analysis techniques, and axial coding of the results, as outlined in Charmaz, (1994), Glaser (1992), Glaser and Strauss (1967, 1994), and Miles and Huberman (1984). Intercoder reliability provided a further verification of findings, and, although not required in grounded theory, ensured that findings support the core themes and categories.

### **Research Protocol**

I obtained approval of my research prospectus from my dissertation committee, as well as NC State University’s Institutional Review Board (IRB) before entering the

field. This approval was particularly important since dealing with low-literate adults required that all informed consent literature and materials had to be read to participants. Since data collection and interviews took place in two different locales with possibly divergent communication technologies and policies, flexibility was required throughout the research process (Corbin & Strauss, 2008; Glaser & Strauss, 1967, 1994; Strauss, 1994; Thomas & James, 2006). Letters requesting site access (Appendices B & C) were provided to the appropriate college ABE administrators after IRB approval, prior to beginning data collection on site.

### **Researcher Role**

In order to conduct the ethnographic portion of this study, I became a participant-observer while serving as a reading tutor for 10 low-literate adult students in two pre-GED reading classrooms. Once a week for more than 18 months I attended class sessions, worked one-on-one with students on reading fluency, reading comprehension, and writing. I also prepared and led mini-lessons for the low-literate students I tutored, and often for entire classes. I became a volunteer tutor because I wanted to develop a relationship with the individuals enrolled in these classes, and to become competent in the culture of adult basic education (Kozol, 1985; Morse, 2007). Furthermore, during the two summers that occurred over the course of this research, I was employed as an instructor for the same pre-GED class level where I

began tutoring in Brandon County before the study. This allowed me to further observe and converse with many of the study participants from the beginning reading class. In fact, some of the participants from that class later tested into the pre-GED class over the subsequent summer. However, no data was collected during these summer sessions when I was not officially conducting research.

The following is a detailed description of the processes I followed in this research study.

### **Description of Research Locations**

In order to understand technology usage by low-literate adults, I chose to study students enrolled in adult literacy programs in two community colleges in a mid-Atlantic state in the southeastern U.S. Using criterion sampling (Draucker, Martsof, Ross, & Rusk, 2007; Patton, 2002), I selected research locations in this state by counties, community colleges, and literacy classes. I chose Brandon and Crayton counties (pseudonyms) in an attempt to provide a representative sampling of two different geographical areas, income levels, regional variations, and employment prospects for adult literacy students. One county is urban and the other rural, and together they are home to high school dropouts, Native Americans and other ethnic minorities, low-income citizens, incarcerated persons, and others who are actively seeking literacy. I selected two community colleges that offer adult education courses, one at Brandon Technical Community College (Brandon Tech) and one at

Crayton Community College (Crayton). This is because a high concentration of verified low-literate students are enrolled in their adult basic education (ABE) programs, and because it is more difficult to identify low-literate individuals in the general population.

Brandon Technical Community College (Site 1) is located in the county where the state capital is situated. The county is mostly urban, with a fairly large metropolitan downtown area, city and suburban neighborhoods, and public transportation. Many ABE day students take a city bus to and from class, while evening students either ride the bus or use personal transportation. Since there are several ABE sites throughout the county, some students move from one site to another as their residences change.

Crayton County, where Crayton Community College is located (Site 2), is primarily a rural county that is economically impoverished. It is home to members of a southeastern Native American tribe, and over 63% of the county's residents were estimated to function at literacy levels 1-2 in 1998. Crayton Community College reports that its adult basic skills program was the second largest in the state as of FY 2006-07.

### **Rationale for Site Selection**

Although almost 85% of citizens in the state where this study took place have earned high school diplomas ([www.census.gov](http://www.census.gov), 2007), the state also has a large

population of citizens who cannot read. The most recent study measuring literacy levels in that state in 1997 used a “synthetic estimate” derived from the 1992 NALS (Siedow, 1998). This synthetic estimate was created by combining census “data elements known to relate to literacy (e.g. poverty, education level) and applied statistical formulas to produce estimates of literacy levels that are not available from any single source” (Siedow, 1998, p. 4). Since the state where this dissertation research was completed did not participate in the state-level literacy survey, these synthetic estimates were used. The estimates indicated that over 2.7 million citizens of the state performed at literacy levels 1 and 2, which means that nearly 52% of the adult population required literacy instruction. Statistics from the state’s literacy resource center study support the finding that adult literacy is a growing problem for this state. According to this report, 18% of adults in 1994, and 22% of adults in 1997 performed at Level 1, indicative of those who would be likely to have serious literacy difficulties and to need significant literacy instruction. Those performing at Level 2 included 32% in 1994 and 30% in 1997 (Siedow, 1998). Siedow suggests that these adults may do very well in everyday literacy tasks, but they could benefit from literacy instruction, concluding that the statistics indicate “that the need for the most basic literacy instruction is growing” (Siedow, 1998, p. 5). Technology developments and employment prospects are among the reasons why basic literacy is even more important today.

In 1997, more than half of the citizens of the state were unable to “locate [a] single piece of information stated in short text; locate or enter specific information on a form; perform [a] single, simple, specified arithmetic operation from numbers provided; make simple inferences, integrate easily identifiable information; cycle through or integrate information from parts of a document; [or] perform single operations using easily located numbers” (Siedow, 1998, p. 5). In counties with demographics similar to Crayton and Brandon counties, between 36-63% of citizens perform at literacy Levels 1 or 2. The following table summarizes data on the two counties and the statewide numbers from the state’s 1998 Literacy Resource Center study:

Table 3.1.

*Literacy Levels for Brandon and Crayton Counties and State Overall*

County	County Seat	Percent at Level 1	Percent at Level 2	Percent at Levels 3-5
Brandon	Sewell	17	19	64
Crayton	Crayton City	27	36	37
State overall		22	30	48

*Note.* Adapted from “Literacy in North Carolina, 1998 edition,” by M.D. Siedow, 1998, NC Literacy Resource Center.

The lack of more recent regional statistics on this state's literacy problem is another indication of the need for this research, particularly since data from the 2010 U.S. census was still being processed at the time this study began.

### **Site Descriptions**

Brandon Tech offers adult basic education (ABE) classes at its Basic Skills Center (BSC) in Sewall during the day and at alternate sites throughout the county during the day and evening. This research effort began at one of those evening alternate sites, the public services headquarters, which is a county government facility, in September 2009. A second round of data gathering began at this location during a day class in January 2011.

Brandon County has a primarily urban population, yet, according to the most recent state literacy study (Siedow, 1998), 36% of the citizens in the county functioned at literacy levels 1-2. I had established a relationship with the Brandon Tech program administrators, having served as a volunteer literacy tutor at this site for the prior three years, and as a paid instructor for pre-GED reading classes during the summers of 2009 and 2010.



Figure 3.1. Photos of Site 1, the Brandon County computer-equipped classroom. This was the first tutoring location in Brandon County.

The initial research effort took place during an evening class in the facility usually designated for job search and placement services. Therefore, the room was equipped with approximately 20 computers arrayed around the walls and in the center of the large room. The reading classes, however, were held in a small area of the room that was walled off a bit from the other areas. This area contained a large table with seating for up to 10 students, with kids' chairs moved against a wall. Although most group lessons were conducted at the table, ultimately I moved some students to computer desks to do one-on-one tutoring sessions. There was another tutor present, who had been working at the site for many years. He, too, began moving individual students to computer workstations for additional one-on-one work. Although the grouping of students at the table facilitated group lessons, it also made it very difficult for some of the older adult students to concentrate during individual work sessions. Several students eventually moved to the computer workstations on their own after group lessons were completed. Seven of the participants in this study

attended classes in this room. There was a rarely used flip chart in the room, but no other whiteboard or classroom display equipment was available.

Upon my return to the facility for the second semester of fieldwork, I was assigned to tutor up to 20 reading students during a day class. This class was held in a small, seminar-style room, with 4 tables and seating for 6 at each table. There were no computers in this room, and students could only enter the locked classroom area when instructors, building staff, or other students opened the access doors. One additional student from this classroom participated in the study.



Figure 3.2. This building housed both of the classrooms at the Brandon County research site.



Figure 3.3. Photos of Site 1, the Brandon County classroom. This was the second tutoring location in Brandon County.

In contrast to Brandon Tech, Crayton Community College (Site 2) offers ABE classes during the day and evening at its main campus in Crayton City and at alternate sites throughout the county. Site access was delayed for over one year after the approval of my research prospectus, but in October 2010, the administrator of the ABE program identified a location for tutoring, which took place one day a week, beginning in January 2011. The site where my weekly tutoring activity took place was in a very small town in Crayton County, nearly 180 miles from Site 1.

Classes were held in a traditional classroom setting in the town's community center. Inside the classroom were 5 computers for student use under the supervision of the instructor. The remaining space contained 6 tables with chairs, and sufficient space for at least 15 students.



Figure 3.4. Photos of Site 2, the Crayton County classroom, showing student work tables and two of the computer workstations.



Figure 3.5. (Left) First place awards for Crayton Community College Internet-based geography research project earned by the students in Miss Nancy and Mr. Windham's class. (Right) The ruins of a textile manufacturing plant located just behind the Crayton County (Site 2) classroom facility.

In the following section, I will describe the sampling procedure, data collection procedure, and interview protocol, and provide brief introductions of the study participants from each research site.

### **Sampling of Participants**

I tutored students in one adult literacy class in each county (Goulding, 2005; Ogbu, 1999). The number of students varied, with as few as five to sixteen (5-16)

students attending during any given class period. All of the participants who were recruited for the study were enrolled in ABE (literacy) classes, and tested at literacy levels equivalent to grade levels 0-2.

### **Data Collection**

In order to address the research questions, data collection involved interviews and unobtrusive observations of the sample population (Poindexter & McCombs, 2000), allowing the individuals to explain their use of communication technology in their own words (Lindlof & Taylor, 2011). The two community colleges were sites where I was able to obtain a diverse data set of interviews, observations and other research materials. I performed the following data collection tasks:

- participant-observation once each week during tutoring sessions at both sites, beginning with the 2009 fall semester (addresses RQ3);
- post observation field notes (addresses RQ3);
- one (1) open-ended oral interview, including demographic information, with each volunteer participant (Spradley, 1979). I conducted at least one interview each class day, usually during breaks or after class, and used a digital audio recorder if the participant agreed. Each interview lasted approximately one hour (addresses RQ1 and RQ2);
- informal interviews with participants and instructors (Spradley, 1979) (addresses RQ1);
- conceptual memos completed weekly (Glaser & Strauss, 1967) (addresses RQ1, RQ2 & RQ3).

**Data collection sequence.** After an initial period of attending classes to become familiar with the students and instructor (approximately 2 class sessions), I asked each instructor if I could recruit volunteers for the study. My observations occurred during the class sessions, but I was not able to take notes or record during the class. Approximately two weeks later, I read a script to solicit volunteers (Appendix D). All eligible students who met the criteria for the study did not choose to participate. After arranging interview times, I prepared informed consent forms (Appendix E) for each participant which I read to them and had them sign before each interview.

### **Interview Protocol**

Adult literacy instructors are opposed to interruptions within the instructional day, so I conducted interviews on site before and after class sessions. Prior to the interview, I asked a few brief demographic questions to capture descriptive information, and alerted the participants to let them know when the remaining study questions were to be asked. Some of the demographic questions included:

- In what racial category would you identify yourself?
- Which of the following age ranges would apply to you? (18-28, 29-38, 39-48, 49-58, 59 and older)?
- What is the last grade level in school (childhood) you completed before enrolling in an adult education class?

Several students did not wish to be recorded, so I took notes of our conversation and transcribed them later.

The interviews included questions from the interview guide (Appendix A), designed to elicit general information on communication technology use. Some of the questions included:

- Describe how familiar you are with some of the following communication technologies. (I selected and described 2-3 devices, including basic cell phone, text messaging, and cell phone camera);
- Please describe how you use older technologies like landline (home) phones, broadcast radio, or television;
- What technologies do you wish you knew how to use? Which one(s) would you most like to learn how to use?

These questions were not asked in sequence to allow respondents to expand on their answers at their own pace (Charmaz, 2001; Duffy, Ferguson, & Watson, 2004). Follow-up questions were asked as appropriate (Charmaz, 2001; Glaser & Strauss, 1967). I found that this flexibility was particularly important with these respondents, as their answers were very multifaceted, providing a wealth of rich data in response to several questions.

The rationale for conducting interviews on site was threefold: 1) for the convenience of the participants, who did not have to travel to another site; 2) to isolate the behaviors under study in a setting that was familiar to the participants; and 3) to reduce travel time and transportation costs. Interviews were the most reliable way to obtain the desired data on out-of-class behavior, as observations

were limited to classroom activities. Students were not allowed to use personal communication devices in class, and were usually asked to step outside the classroom to use cell phones and other technologies. This study was intended to allow each participant to describe their use of communication devices, which might occur at any time during the day or evening, and in a non-predictable fashion. This behavior is not observable in a laboratory setting, as it is important to obtain data on normal, daily activities that may vary each day, and could occur spontaneously. As an incentive to participate, each of the participants was offered \$10.00 cash-equivalent compensation, in the form of gasoline cards, gift cards for food purchase, bus passes, or cash if requested, each of which was provided after the interview.

I asked participants if I might conduct follow-up interviews, posing questions for theoretical sampling (member checks) near the end of my research study (Glaser & Strauss, 1967; Glaser, 1992; Green, Creswell, Shope, & Plano Clark, 2007; Jackson, Drummond and Camara, 2007; Lindlof & Taylor, 2011). This sampling/member check process took no longer than 20 minutes. In total, more than 150 hours were spent on site. Of these, 6.5 hours were spent interviewing, while the remaining time was focused on tutoring activities. It was important for me to spend a prolonged period of time in the classrooms for the sense of comfort and familiarity it provided to the participants (Rogers & Fuller, 2007), and the students I worked with were eager to return for individualized assistance.

## Description of Site 1 Participants

Eight (8) participants were interviewed from Site 1, seven (7) females and one (1) male. All but one of the Site 1 participants were African American; the remaining female was Caucasian/Hispanic. Demographic data on the participants from Site 1 is shown in Table 3.2., using pseudonyms to protect the participants' anonymity.

Table 3.2.

*Participants from Site 1*

Participant	Race	Age Range	Gender	Last grade completed in school
Brenda Nelson	African American	49-58	F	8 <sup>th</sup>
Mrs. J.	African American	59+	F	12 <sup>th</sup>
Alice Ngomo	African American	18-28	F	HS graduate
Wanda Bledsoe	Caucasian	18-28	F	6 <sup>th</sup> (home schooled)
Crystal Brown	African American	49-58	F	6 <sup>th</sup>
Karen James	African American	29-38	F	6 <sup>th</sup>
Gregory Davis	African American	49-58	M	9 <sup>th</sup>
Sharon Patterson	African American	39-48	F	9 <sup>th</sup>

**Brenda Nelson.** Brenda Nelson was the first participant in the study. She was a friendly, engaging, single African American woman in her early fifties, who usually sat in her night class working hard to concentrate. Eventually, she moved to the day class and continued her studies. Brenda's persistence in attending class

was an indication of how much she wanted to learn and achieve her GED, a topic she often discussed with me during our tutoring sessions. I later learned that Brenda was the mother of one daughter and a grandmother of three who dotes on her grandchildren at every opportunity. Brenda had completed the eighth grade in school, and was unemployed at the time of the study. She described her income as “in the middle,” and she wished “it was high.” I often saw Brenda with workbooks that were several levels higher than those used in the beginning reader class, and encouraged her by telling her that she was using “the same books they use downstairs” in the pre-GED class. She read aloud fluently, and seemed to enjoy learning.

**Mrs. J.** Mrs. J. is an elderly African American woman in her sixties who arrived in class walking with a cane, very slowly and with a limp, toward the elevator for her night class. Married with three grown stepchildren, Mrs. J. was still employed at a national chain department store. On many evenings, Mrs. J. arrived in class after having worked a full day on her feet at the store. Needless to say, she was noticeably tired by the start of the 6 p.m. class, which she felt adversely affected her ability to comprehend and retain the material.

I learned that Mrs. J. dropped out of public school in a nearby county just as she was about to enter the 12<sup>th</sup> grade, and she said, “I could just kick myself for not finishing, because I was so close.” Another reason why Mrs. J. was tired was because she was also caring for her ill husband, and often cooked meals and

cleaned the house while still trying to maintain her work schedule and class attendance. Invariably, she also had her own health challenges, with hypertension, bad hips and knees, and occasional poor eyesight. Even though she was personally motivated to complete her GED, she found, after testing into the summer pre-GED class I was teaching, that she could not keep up the pace, and quietly asked me how she could withdraw from the program and preserve her prior attendance hours. That evening, she seemed ill herself, and very exhausted, and she acknowledged that her husband's health had declined even further. Sadly, I prepared a packet of worksheets for her to complete in her spare time, and wished her the best, while encouraging her to return to school as soon as she could.

**Alice Ngomo.** Alice Ngomo was a student in the beginning reading class. Born in Congo in Africa, Alice had graduated from the equivalent of the 12<sup>th</sup> grade in her native country, and her primary language was French. She self-identified as African American. She spoke and wrote English reasonably well, but struggled with longer English words, often substituting a French accent for the English equivalent. Alice was single, in her mid-twenties with no children, and unemployed. She believes that the GED is necessary to improve her prospects for earning a living. In class, she worked almost exclusively with the longtime tutor, Mr. Booker.

**Wanda Bledsoe.** Wanda Bledsoe was the only self-identified Caucasian/Hispanic female to participate in the study from Site 1. Wanda chose to be interviewed together with Crystal Brown, the next participant to be interviewed,

because despite their age differences, they had formed a fast friendship in the beginning reading class. Wanda was single, in her early 20's, and was a product of home schooling which her parents provided until she was in the equivalent of the 6<sup>th</sup> grade. Wanda said that her parents did not feel that the public schools in her hometown of San Diego, CA would provide her with the education she needed. Ultimately, once her family moved to Brandon County, Wanda was enrolled in the pre-GED class. However, her reading TABE scores were so low that she was eventually moved "upstairs" to the beginning reading class where I was tutoring. Wanda was not employed full-time and described her income from babysitting as "low."

**Crystal Brown.** Crystal Brown was an African American woman in her early 50's from my hometown of Washington, DC. Some of our early discussions revolved around our shared history and schooling. She attended class regularly, and moved from the night beginning reading class to the day class for convenience. Crystal completed the 6<sup>th</sup> grade in DC, but often mentioned how little she learned in public school. She was unemployed, and had expressed the opinion that she had a learning disability. In fact, Crystal's reading tested at a 2<sup>nd</sup>-3<sup>rd</sup> grade level, allowing her to obtain a reduced-fare bus pass for the disabled after conferring with her physician.

Although Crystal's reading level was very low, she was a verbally expressive person who enjoyed answering questions during class discussion, especially if she

felt she had learned enough about the topic. To fully participate in these discussions, she frequently asked for help from the instructor, Zelda Stein, from the tutors, or from a nearby classmate. Crystal was very forthcoming and quite conscientious about her coursework. She did not hesitate to share her assignment grades with me, and I spent a great deal of my tutoring time with her. Ultimately, Crystal developed a hunger for picture books that she could read at home, and her friends purchased several books that would interest her.

**Karen James.** Karen James was a single African American woman in her mid-thirties who, like Brenda Nelson, attended the night class regularly and aspired to test out of her class, and ultimately earn a GED. Karen was employed at a cafeteria-style restaurant where she described her income as low, supplemented by the miniscule tips she earned at work.

Karen worked hard on her lessons, often sitting beside Brenda, but she was easily distracted. She told me that she was afraid of not being able to learn. Her slow, halting reading style made it difficult for her to complete some lessons. Ultimately, at the end of my second summer session teaching the pre-GED class, Karen came to my class distraught and told me that she had been asked to leave the program by the site manager. The explanation given to her was that she had been enrolled in the program for a long time, but she did not seem to be making sufficient progress on TABE tests. I could not help but to be overwhelmingly disappointed for her, as well as for her teacher, and myself, for not working harder to

help her improve her reading level. Since I was leaving my duties as an instructor, I asked for her contact information, gave her some copies of work to do at home, and urged her to keep at it. On the note she gave me, she included her home and cell phone numbers, and provided me with an “E-mel” address where I could reach her.

**Gregory Davis.** Gregory Davis was the only male who agreed to participate in this study. An African American man in his mid-fifties who had worked in highway construction for 36 years, he was married and the father of four children in their 20’s and 30’s. Greg attended public school in Brandon County until the 9<sup>th</sup> grade, and he professed to know “a little Spanish” which he picked up in his construction work. At the time of this study, Greg was employed but was experiencing a lull in his work as a heavy machine operator. No jobs had come in recently, so he took the opportunity to enroll in ABE classes. He tested into the beginning reading class, but clearly had reading skills that exceeded that class level.

Gregory was the only participant who described his earnings as “upper income,” and he admitted that he made a great salary in his work. However, he was frustrated that he had not achieved his high school education, and believed that this would lead to further career advancement and personal satisfaction. Gregory only stayed in the class one semester because his work picked up again. The long, irregular hours and strenuous work prevented him from attending classes regularly, and his contact hours would be significantly reduced. So he reluctantly dropped out of the program and, ironically, he could not attend class because he had to maintain his high income.

**Sharon Patterson.** Sharon Patterson was the last participant interviewed from Site 1, and she spoke with me late in the study after class in the building lobby just outside of the daytime classroom. She was not one of the students who were enrolled in the previous night classes, so my first time tutoring her occurred during the time I was also doing theoretical sampling/member checks with several of the earlier participants. Sharon was a single African American female in her late 40's who was born in New York City. Her last grade completed in public school was the 9<sup>th</sup> grade, when her daughter, now in her thirties, was born. She had one grandchild, was not employed, and described her income as "low."

Sharon's responses in class and during tutoring were often mumbled, and she was hard to hear and understand. However, she was very persistent when seeking help, which she required constantly throughout her lessons. Her instructor, Zelda Stein, noted that it was hard for Sharon to participate in group lessons because she spoke so quietly. Ms. Stein noted that "she usually has the right answers, but she has a problem breaking in when other students are talking."

### **Description of Site 2 Participants**

At Site 2, two (2) female students participated in the study, one (1) African American and one (1) Caucasian. Table 3.3. contains demographic data on the participants from Site 2, using pseudonyms to protect the participants' anonymity.

Table 3.3.

*Participants from Site 2*

Participant	Race	Age Range	Gender	Last grade completed in school
Debra Kennedy	African American	18-28	F	HS graduation certificate
Sue Jackson	Caucasian	49-58	F	10 <sup>th</sup>

**Debra Kennedy.** Debra Kennedy was an African American in her mid 20’s who was a single mother of an 11-year-old daughter. Debra and her daughter lived with Debra’s mother. Though she was born in Crayton City, the county seat of Crayton County, at the time of the study she and her family lived “in the country.” Debra finished high school with a “certificate,” which is usually awarded to students with special needs, and her instructor, Miss Nancy, discretely informed me that Debra and one other beginning reading student had learning disabilities. After working with her for several weeks, I realized that Debra’s reading level was very low, and in subsequent lessons I read to her while she followed along.

Debra was unemployed when I first met her in our tutoring sessions, and she said she had not worked “in a long time.” However, near the end of my time in the field, she quietly whispered that she had a job. She was concerned because her

work schedule conflicted with school, but she postponed making a decision on whether to continue school until “later.” On a subsequent visit, I learned that Debra had taken the new job and no longer attended classes. Mr. Windham, the testing coordinator, told me, “She unpacks boxes at a company.”

**Sue Jackson.** Sue Jackson was a Caucasian woman in her late fifties, who had attended public schools until the 10<sup>th</sup> grade. She was single and the mother of one daughter in her 20’s. Sue was the primary caregiver for her elderly mother who had Alzheimer’s disease. Most of Sue’s other siblings lived some distance away, so she often found herself alone in providing care to her mother. Unemployed, Sue previously spent more than 30 years working in textile and manufacturing plants in the county, and had not perceived the need for more education. However, in order to receive state funding to work as a paid caregiver for her mother and others, the state required that individuals pass a medical assistant certification test, necessitating that Sue return to school. When I met her, she mentioned that she missed the certification cutoff score by only four points, and that she knew she could pass with just a few more hours of class. Sue reported that she considered herself as a “middle income” resident.

Shortly before my field work at this site was completed, Sue stopped attending on the days of my site visits. Miss Nancy and Mr. Windham informed me that Sue had been scheduled to take another placement test for the caregiver certification, and that she would probably not be back. Several weeks later, I asked

them if she had been successful. They mentioned that she missed passing the test, this time by three items, but that she now had an itemized list of things to work on in her upcoming classes. I never had the chance to see her again, but asked them to convey my best wishes for her success, and that I wanted to encourage her to continue her learning despite the setback.

### **Data Analysis**

On the first day of field research, I utilized the grounded theory tools described previously (Glaser & Strauss, 1967, 1994) to initiate analysis of the data beginning immediately after the first interview. I began to tally demographic data and transcribe audio recordings within a day or two of data collection. Open coding of data and constant comparative analysis were initially done simultaneously with data collection (Bryant & Charmaz, 2007a; Charmaz, 1994, 2001; Corbin & Strauss, 2008; Dey, 1999; Glaser, 1993; Glaser & Strauss, 1967, 1994; McGhee, Marland, & Atkinson, 2007; Morse, 2007; Strauss, 1994). As categories of data emerged, subsequent data were analyzed and adjustments in data collection methods were made as needed (Allan, 2003; Dey, 1999; Thomas & James, 2006). Data collection continued at both Site 1 and Site 2 until category saturation was achieved (Dey, 2007). I conducted theoretical sampling (member checks) midway through the data collection and near the end of the study in June 2011. All participants and locations are identified with pseudonyms, and all key data points were coded. This study includes quotes from interviews, coded to protect anonymity (Rogers & Fuller, 2007).

Additionally, other relevant data was examined to further inform the research questions and achieve category saturation (Dey, 2007; Glaser & Strauss, 1967, 1994; Patton, 2002), including official national and state statistical data such as the NAAL (Kutner et al., 2007); published reports on adult literacy available in newspapers, online articles, and other news sources; communication technology penetration data as available from telecommunications service providers; documents provided by the state's Community College System; interviews with instructors, administrators, and other relevant "slices of data" (Glaser & Strauss, 1967, p. 65). As sources of data came to my attention throughout the study, I reviewed and coded them (Glaser & Strauss, 1967; Goulding, 2005). In addition, the conceptual memos that I created over the course of the study were also coded and incorporated into the analysis (Charmaz, 1994; Glaser, 1992; Glaser & Strauss, 1967; Holton, 2007; Miles & Huberman, 1984).

As the core concept and supporting categories began to emerge (Glaser & Strauss, 1967) at Site 1, I conducted theoretical sampling at both sites (Dey, 2007; Glaser, 1992; Glaser & Strauss, 1967, Morse, 2007). For instance, after reviewing and coding several conceptual memos following the fourth interview at Site 1, there was an indication that I needed to know more about the texting behavior of two of the participants. Open coding of all data was initiated beginning with the first interview, and constant comparative analysis techniques were applied (Bryant & Charmaz, 2007a; Charmaz, 1994, 2001; Corbin & Strauss, 2008; Dey, 1999; Glaser,

1993; Glaser & Strauss, 1967, 1994; Strauss, 1994). Theoretical sampling and member checks were conducted to further define and strengthen the core concept and clarify the results. Constant comparative analysis continued until all categories and their properties were saturated, and were analyzed for fit and relevance.

After my field research was completed, I conducted a typological analysis (Lincoln & Guba, 1985; Miles & Huberman, 1984; Patton, 2002; Spradley, 1979) consisting of the following steps:

1. open coding of data for each research question
2. development of categories
3. refinement of categories
4. intercoder reliability
5. axial coding
6. preparation of results

Intercoder reliability produced a Cohen's Kappa of 0.439, and the strength of Kappa was 0.101 for RQ1. The strength of agreement is considered to be moderate. For RQ2, intercoder reliability produced a Cohen's Kappa of 0.259, and the strength of Kappa was 0.113. The strength of agreement is considered to be fair for RQ2. RQ3 intercoder reliability produced a Cohen's Kappa of 1.000, and the strength of Kappa was 0.000. The strength of agreement is perfect for RQ3.

Using grounded theory methodological principles and tools for the typological data analysis, I was able to triangulate the data and ultimately produce more robust

categories. The results of this dissertation research are discussed in detail in the following chapter.

## Chapter 4

### Results

In this section, I will describe the results of the typological data analysis. Initial data analysis began in September 2009 with selective coding (Charmaz, 1994, 2001, 2005; Glaser, 1992; Glaser & Strauss, 1967, 1994), which allowed several themes and concepts to emerge from the interview notes and transcripts, post-observation field notes, conceptual memos, and artifacts collected from the sites. The initial research question that prompted this study, how do low-literate adult students, who are enrolled in formal adult basic education classes, use new and emerging communication technologies, necessitated the development of the three specific research questions presented at the end of Chapter 2. The results for each of these research questions are described below.

#### **RQ1: How does communication technology function in the everyday lives of low-literate adults enrolled in adult literacy programs?**

This research question yielded five categories of data, which are:

- ◆ Familial bonding
- ◆ Escape
- ◆ Inspiration
- ◆ Social connection
- ◆ Work-related tasks

The operational definitions for each category of RQ1 are shown below, along with findings that provide insight into uses described by the study participants.

### **Familial Bonding**

The participants in this study use communication technology as a way to bond with, and stay connected to, their families. Cell phones and home phones are the principal means they use to do so. More than any other activity, the adults in this study are avid phone users, and voice telephone services are crucial to helping these students stay connected. Low-literate participants in this study are very reliant on cell phones primarily for voice communication, and most talk on them constantly and not just for emergencies, as Brenda Nelson reported, When asked which technologies they use most often, the participants consistently respond that they use their phones the most, and they use them daily. Gregory Davis echoed many of the respondents when he said that he uses his mobile phone to connect with his family, recognizing their phone numbers on caller ID in spite of his limited reading skills. Brenda uses her cell phone “from morning, to the evening, into the night.”

Not only do these adults spend a great deal of time on the phone, but their family members do also. Following Brenda’s example, her granddaughter

...walks around with the phone up to her ear, 24/7. It never comes down until it’s time for her to go to bed at night...And my grandson [a toddler], he got to the point where he would pick up the house phone, and talks on the house

phone, and don't want to give nobody else a chance to talk. And as soon as you take it away from him, he's hollerin' 'cause he wants to talk too.

Alice Ngomo uses her mobile phone to stay in contact with her family, some of whom live outside the U.S., and Wanda Bledsoe uses her phone to talk to her parents. Mrs. J. uses her phone to stay in contact with her stepchildren and their kids who live several states away. Debra Kennedy also says she is on the phone "a lot." Sue Jackson stays in touch with her family by phone, as they all live in other parts of the state. Since Sue is the primary caregiver for her mother, she relays information about her mother's condition to her siblings by phone. Sharon Patterson may be an exception to the theme echoed by the other participants. She mentioned that the only reason she uses her cell phone is to occasionally check up on family members. Sharon avoids using her mobile phone for any other purposes.

When asked where they use their phones, most participants responded that they primarily use their phones at home, while others report using their cell phones in other locations. Crystal said, "I use my cell phone everywhere." On the other hand, Sharon says she uses her cell phone while she's in transit, but that she "absolutely" does not use her phone while driving.

Another use of phones is for emergencies, which Brenda talked about during our interview.

But also out too, like if it's an emergency. Like if I'm waitin' on the bus or something and it don't show, I might have to call my daughter and tell her where I'm at so she can come pick me up.

Mrs. J. also explained that her family would not call her at work, “unless it’s something that they really need to,” most likely in a situation when they need to reach her quickly. Other participants mentioned that having a cell phone was particularly helpful when their younger children arrived home from school, or to alert family members when the participants were delayed in arriving home from errands or appointments.

Many of the participants learned how to use their phones with the help of family members, but Sharon learned to use her phone “by trial and error,” and Sue reported that “others showed me how” to use her phone. Karen James, an African American woman in her 30’s, has owned a cell phone since 2006, and she uses it frequently during the day. She said that learning how to use the cell phone to make voice calls was “a piece of pie,” and was a lot like using a phone at home.

Since cell phone use in the class is banned at both research sites, most students would wait to use their phones outside the classroom during breaks. However, during the study, I had the opportunity to observe the participants and other students when a cell phone would ring inadvertently in class. Most students who forgot to turn off their phones would quietly answer the voice phone call, ask their party to hold, and leave the classroom without further disruption. For example, I witnessed Sue and Brenda receiving calls in class, and watched them promptly leave the class to talk to the calling party. On the other hand, I encountered students at the Brandon County site who were not part of the study using phones inside the

classroom. These more advanced reading students, sitting in the same classrooms with the study participants and other students, sent and received text messages in spite of the restrictions.

Although some of the participants' mobile phones were equipped with cameras, it was usually other family members who took pictures with the camera. Wanda used her own cell phone camera and Crystal showed me pictures of her boyfriend's new truck which she had stored on her phone. It was unclear whether Crystal actually took the pictures herself, or if someone else used the phone cam to do so. Debra's 11-year-old daughter uses her grandmother's cell phone to take pictures and to send texts.

Other examples of how the participants use communication technology for familial bonding were experienced by Gregory and Mrs. J. who have played video games on gaming consoles with their kids and grandkids. Debra watched movies on the VCR with her mother and daughter, Brenda watched TV with her grandkids, and Mrs. J. said her family watched all the Tyler Perry "Madea" movies together. "Yes, we've got all his movies. We sit there and go to his [her son's] house, or they'll come to mine," she said. For entertainment, Sue watches television, and TV serves an important role in helping her with her caregiver tasks. She mentioned that the TV is on almost all the time because "the sounds help to keep my mother calm and occupied. She doesn't like it when it's quiet at the house. She gets agitated," Sue concluded. Brenda's observations of her young grandson's phone play also offered

her a chance to guide and model proper phone use. Familial bonding through communication technology use also led to further use as a means to escape their daily routine, as we see in the next section.

## **Escape**

Participants describe using some communication technologies to get a laugh, achieve comic relief, or to relax. Most often this is accomplished by watching comedy shows on television, movies at home, or TV soap operas. Overwhelmingly, participants in this study obtained their comic relief and relaxation from non-Internet based technology. Brenda says that “I love to sit around and watch them [TV programs] sometimes. I’ll just sit around and watch with the grandkids, then sit back and have a fun time with them.”

Escape is usually obtained by simply turning on the television, a task all of the adult participants had done for years. The VCRs, DVDs, and remotes were another matter. Debra learned how to use the VCR from her Mom and daughter. The participants often spoke of needing their kids and grandkids to turn on, program, and use DVDs, DVRs, VCRs, and remotes, and Gregory Davis admitted that he has problems reading the TV program listings. Gregory and Mrs. J. still have not mastered using the remote to select TV programs, and they usually handed it over to other family members. Greg’s main method for watching TV is to use the remote to flip through channels to see what is being broadcast. Alternatively, Mrs. J. and her

husband struggled to use the TV remote so often, they simply resolved to keep the TV off. Other participants, like Brenda and Sue, use television as background. When I asked Brenda how she decides whether to watch TV or listen to radio, she replied, “Well, I might get up and run if I hear a song on the radio that I like. I’ll run to the radio and I’ll stand there and listen to it until it’s gone and then I’ll go back to the TV.” When I asked if they are both running at the same time, she answered, “Yes.”

These students watch mostly soap operas, talk shows, and, to a lesser extent, comedy shows, and most of the participants love soap operas. The programs most often mentioned included *The Young and the Restless*, *The Oprah Winfrey Show*, *The Jerry Springer Show*, *Family Guy*, *Meet the Browns*, *Dr. Phil*, and movies. Some participants have converter boxes for over-the-air TV, and others order movies on demand via cable or satellite TV. In many cases, shows are chosen virtually at random. Karen says that “it’s easy to cut on the TV whenever I want,” and Wanda checks listings to verify when her favorite shows will be broadcast.

Few participants mentioned playing video games as a means of escape, and saw this entertainment more as a familial bonding activity. Furthermore, only one participant reported gaining any personal enjoyment or escape using Internet-based sources. Crystal said she knew friends who downloaded music and viewed YouTube videos. Wanda wanted her own iPod, presumably to download music, and Gregory’s observation of his son watching movies on his phone represented most of the participants’ exposure to these technologies as a means of escape.

## Inspiration

Participants seek out specific inspirational programs, such as gospel music on the radio, and most acknowledged this use of communication technology. They predominantly prefer gospel music programs, and tend to listen to gospel everyday. Gospel radio stays on almost all day (and night) in many houses. Brenda Nelson emphatically said, "I love my gospel," and provided an example of her listening patterns.

Yes, I listen to it all night long. I have that on [10]1.5, I mean 1.3 all night and all day, until it's time for me to come to school. It'll be playin', but I may be in there watching TV, but it'll still be playing...

Brenda is among those participants who indicated how important and integral gospel music is to their daily lives. Three other participants from the Brandon site, Mrs. J., Gregory Davis, and Sharon Patterson reported that they, too, primarily use radio to listen to gospel music. Mrs. J. particularly expressed her love of gospel music on radio.

Yeah, I love the radio because of the gospel music...it comes on in the morning. I listen to 103.9... Sometime I just listen at...you know, I love the Word, it's like, sometimes 'specially since all the problems are happening with the economy and everything. Sometimes I just listen, I'll be so down that I'll just listen to the radio. And it seems like God just puts certain songs there to pick up my spirits.

Hearing songs that “pick up” their “spirits” was extremely meaningful for these adults as they went about their day. Gospel music was, by no means, the only music these adults accessed for inspiration, encouragement, and enjoyment. Sharon listened to oldies on the radio, Wanda and her family listened to country and classical music, and Debra listened to hip hop music while riding in the car with her sister. Crystal had a CD player, but she did not indicate if it was portable or a home model. The other Brandon Tech participants, and Debra Kennedy and Sue Jackson, the two students from rural Crayton Community College, also listen to other styles of music on the radio during a significant part of their day.

In addition to music programs, several students who were either study participants, or part of the reading classes, talked about how they were inspired or challenged by the topics covered on a number of talk radio shows. For instance, Peter, a low-literate African American student I tutored early in my research who was not a study participant, entered class one evening very distraught. He complained that he had just heard a radio host on a show aimed at an African American audience fielding calls on the subject of “illiteracy,” and that the host’s and callers’ comments were very hurtful and disparaging. “They were making fun of people who can’t read good,” Peter told me. He recounted part of the discussion that accused low-literate adults of being “stupid,” and “dumb.” Peter was very upset and emotionally consumed by this, and vowed never to listen to the program again. Peter told me, “I listen to [radio host]’s program all the time, but I’ve never heard anything

like that.” I mentioned to Peter that he could call the show to protest the next time he heard the phone number. I also agreed with him that it was unfair to condemn those who have problems reading and writing, especially since the callers were not familiar with the details of a low-literate adult person’s life, or with the effort these students make to learn to read.

Those who used communication technology to access inspirational programs were using one-way, broadcast technology. However, other participants are beginning to go further and seek to build connections using social networking.

### **Social Connection**

Those participants who are familiar with, or use, social networking technology associate it with establishing and maintaining connections with friends. Although most of the participants do not use 21<sup>st</sup> century social networking tools as a means to connect with others, many had heard of Facebook and Twitter, either from television and radio programs, or from relatives who use the technology. One of the youngest participants, Wanda Bledsoe, and one grandmother, Brenda Nelson, have attempted to set up Facebook profiles, but the majority of the participants did not have their own Facebook pages or email accounts. Wanda wanted to learn how to use Facebook, which is something her siblings access regularly, and Brenda told me, “I have tried on Facebook, but my granddaughter did it,” meaning that her granddaughter created a profile for her. I was surprised at this, and asked, “So you have a profile?” Brenda responded, “I didn’t never get my picture on it. [Laughs] I

never got my picture put in there, but she was thinkin' about doing it. But I did gain a lot of friends on it."

Alice Ngomo used a social networking application known as Hi Five, which she said was "just like Facebook." In response to a question about Facebook and Twitter, Mrs. J. said,

[I] hear about it all the time. The guy that sits out on the...the young man that tells his Dad...you've probably seen that on the...But he's sitting out on the porch, patio...You've seen that commercial... [she goes on to recount a recent Verizon commercial]. But I don't know none of those things. My nieces and nephews...even my grandkids, they got it, they know how to do it. My son has set up a room for his TV. Oh, he's too much. He's the one that has helped me with what I know.

Wanda told me, "My brother and sister do Facebook," and Crystal Brown added, "My friends can text, they chat on the computer."

Text messaging is another way that some of the participants maintain their social connections. Only four of the study participants, all from Brandon County, reported that they were able to send texts in a limited fashion, and they can read most incoming texts. Neither of the Crayton County reading students reported sending or receiving texts. Crystal Brown, the African American woman in her 50's who I interviewed with Wanda Bledsoe at Brandon Tech, was one of the lowest level readers that I tutored throughout the study. Having taught her in a summer class, I

became more aware of her self-disclosed learning disability. She told me in October 2009 that she sends text messages “all the time.”

I was skeptical of Crystal’s texting ability, after having worked with her intensively and watching her struggle with even the simplest words in her literacy class. So late in the study when doing theoretical sampling (member check) with Crystal, I asked her to show me how she sends text messages while we were both waiting for a bus. Once class was over, we headed to the bus stop while Crystal showed me a picture of her boyfriend’s recently purchased truck she had saved on her cell phone. I noted that she had a full QWERTY [standard] keyboard and screen on her phone, and she said, “I’m sending a text now.” I told her I did not want to read her text, but just watch her doing it. She slowly typed a few letters, and pressed the “Send” button. “That was quick!” I exclaimed. She replied, “I just said, ‘Call me.’” I have no doubt that this is the extent of her ability to send text messages. In fact, she probably needed her correspondent to call her rather than send a reply text, because she would have had difficulty reading it.

Regarding the way the low-literate study participants access news, if these students get news at all, it is usually top-of-the-hour newscasts on radio. The participants rely on FM radio for news as well as for entertainment and inspiration. Only two of the participants mentioned watching either local or national televised news. Alice specifically mentioned that she enjoys watching news on television. She is very interested in international news, but also feels that watching the news helps

her to better understand, and feel connected to, her adopted country and local area. For those participants who were employed, catching the news on radio or television helped them prepare for their workday.

### **Work-Related Tasks**

Some participants use technology at work, or for seeking employment by completing online job applications. Only three of the study participants were employed, and of those, only two used a computer or other communication device at work. Karen James worked in a cafeteria-style restaurant, but said that she does not use any technology on her job. Mrs. J. was the only participant who needed to use computers at her retail store job, using the computer to clock in and out, look up merchandise for customers, and assist them with shopping online.

Well, I have to use the computer 'cause I have to clock in on the computer and I clocks out on the computer. And if a customer wants to find something on the computer, I have to help them...Online shopping? No more than...mostly for the store, you know, 'cause a customer comes in. I don't really know how to do it. I can put my numbers and what I have to put in it on there.

Mrs. J. was trained on the computers by younger co-workers.

Well, so, you know how they first train you. I had young girls that taught me. I had to sit them down and tell them to slow down. And this was about 15 years ago. When I first started with them...But the girls would wear you out...Oh,

but because you know how you have to do the sale [tapping on the table simulating someone using a keyboard]. And they would go...I'd say, "Honey, can you teach me how to do this?" And they'd say, "Oh, it's so easy, Mrs. J." They'd just go zip, zip, zip. And I'd say, "Honey, what did you do?" But then once I got used to it, it got much easier.

Gregory Davis uses a global positioning system (GPS), equipped with video screen, as part of his work using heavy equipment. For instance, the GPS will indicate the site where he will operate his machinery, and the work screen will pinpoint the sections where he will work. He uses this device on a frequent basis, but he does not have a personal GPS. Interestingly, when I asked Brenda Nelson if she had used any technology when she worked in the past, she replied, "Well, I used a meat cleaver." She explained that the meat cleaver, though automatic, had to be set to the correct thickness, and she needed to know numbers and letters to use the machine.

Other participants used computers in their job search. Alice Ngomo had attempted to submit job applications on the Internet, but said her biggest source of frustration was trying to complete the applications quickly. Since she was still a novice computer user who needed to read each item slowly to understand the required information, she was delayed in entering her responses and the applications often "time out" before she could complete the process. Wanda Bledsoe told me she had submitted online job applications, and Brenda Nelson said she had submitted "about two or three." Interestingly, Crystal Brown also said she has

submitted job applications online, but she did not confirm whether she filled out the information herself, or if someone else filled it out on her behalf. None of the participants who indicated they had filled out online job applications distinguished between in-store kiosks or home-based PC applications.

To summarize the findings for RQ1, we find that the low-literate adult participants use primarily 20<sup>th</sup> century communication technologies for familial bonding, escape, inspiration, social connection, and work-related tasks. Telephones, radio, television and, to a lesser extent movies, are the predominant technologies these participants turn to as a means to fulfill their purposes. Their use of new and emerging communication technologies is limited to the most basic functions, while their younger, more tech saavy relatives and friends embrace Facebook, text messaging, music downloads, and other 21<sup>st</sup> century applications and devices.

The challenges participants encountered as they attempted to learn how to use communication technologies and devices were explored in the following research question.

**RQ2: What challenges do low-literate adult students face when learning to use communication technologies?**

The data for RQ2 revealed that the participants faced numerous challenges in their quest to learn how to use a number of technologies. The data identified four categories of interest.

- ◆ Fluency

- ◆ Fear of complexity/unknown
- ◆ Access
- ◆ Negative stereotypes

The operational definitions for each category of RQ2 follow, along with descriptions of the participants' challenges and obstacles discussed during the interviews and tutoring sessions.

### **Fluency**

The participants in this study reported that they were able to use basic features of some communication technologies, but they had not achieved fluency, or a level of comfort and ease, in using more advanced features. Using features on cell phones beyond making phone calls appeared to be the dominant challenge, since all the participants owned and used cell phones. For most participants, using a cell phone to make calls was easy to learn because, like Crystal Brown and Karen James, they have had phones for a long time. Others learned how to use basic features after persistent attempts to simply place or answer phone calls.

Accessing, using, and manipulating cell phone camera images were issues for Brenda and Crystal specifically. Brenda's cell phone camera "don't work," and Crystal desperately wanted to know "how to get pictures off of your cell phone, you know, to make prints." Caller ID also posed a dilemma for some of the participants. Either their phones lacked a caller ID function, like Brenda's, where "the message

'No Name' comes up," or the participants did not recognize the names by sight. For instance, Greg saved some names in his contacts list which he recognized. I did not ask if he entered these names in his phone himself or if one of his family members entered them. If others call him and caller ID is activated, he said that he "sounds out the names," similar to the way he pronounced words he was not familiar with. Sue and Wanda also mentioned they would like to know how to use more features on their mobile phones, such as entering contact information.

Text messaging presented even more of a challenge for these cell phone users. Alice said that she had to ask for help typing and sending text messages. She could usually read incoming messages, but asked her sister or friends to help her send text messages from her phone. Reading and understanding texting language was also frustrating for Brenda. During our interview in September 2009, I continued an ongoing conversation with her that I had started in class about texting. I asked, "You told me you tried to text..." "Yeah, I tried," she responded. Later in the interview she told me that reading texts was just as challenging for her.

Sometimes learning how to read the texts [is a problem]. I mean, sometimes they put "r" in it, and you be sayin', well what in the world is this? But you be thinkin' they're supposed to fill out the whole word. It's all about an "r" here, or an "a" here. You're trying to figure out what's goin' on.

She went on to tell me that she wanted her granddaughter to teach her how to send text messages.

She do it, but sometimes I want her to show me how. Just like textin', I want her to show me how, you know, to use the big letters in there, instead, because when I do it, it's the little small letters...I want to learn how to start using the capital letters.

Almost two years later, on the last day of the study, I met up with Brenda at the bus transfer station, and used the opportunity for more theoretical sampling. I asked if she had ever learned how to text. "Naw, naw, I never did," she replied. After a heartfelt hug, she ran off to catch her connecting bus. Interestingly, although Wanda Bledsoe was in her 20's and the youngest of the participants, she also does "not really" send text messages.

Regarding the challenges of computer use, several of the participants expressed concerns that they could not do things on a computer on their own. For example, Alice made calls on her cell phone and used her computer without assistance, and she shopped online, but to do so she initially received help from her sister, who was very computer literate, along with her friends and relatives. Her earliest challenges using computers involved trying to understand the instructions, since French is her native language, and most computer instructions are typically in English. Wanda's parents taught her how to use a computer, but they only showed her the "basics," word processing, PowerPoint, Excel, and how to access information on the Web. Even though she was not fluent with computers, she took the opportunity to use computers at the community college site, the library, and church.

Although five of the participants live in homes where there is a computer, almost none of those interviewed had any experience with using a computer completely on their own. They typically must ask others, like their kids or grandkids, to complete typing projects and other things for them. It is the children (youths and adults), grandkids, younger siblings, and other relatives who access websites, build Facebook pages for them, and open pictures and PowerPoint slides sent to the few participants who had email accounts. Several participants stated that their grandkids are the “experts.” Mrs. J., the student in her sixties and the oldest study participant, actually has an aunt who did all of Mrs. J’s typing for church projects. Mrs. J’s grown son may also have assisted her, but her aunt and son would ultimately complete these projects elsewhere. Mrs. J. could have opted to complete her own work, however.

Well, right now ‘cause I needed to have done some typing and stuff, and I was gonna cut it [the computer] back on. I might end up cutting it back on. You know, ‘cause you just cut it back on. But I haven’t done that yet...Oh yeah, my aunt [who does the typing]...now she has a problem with her eyes, so she cannot do my typing and stuff, ‘cause see we work together in church. Homecoming is coming up. She would’ve...typed everything out, and then I would go on and make copies. So I had to get somebody else to do that.

Mrs. J. was not the only student to depend on relatives to accomplish a computer-based task. Brenda was one of those who relied on her granddaughter to introduce her to Facebook.

I have tried on Facebook...and then it's another one, what they call it? MySpace. But I never did get a chance to go on MySpace, but [my granddaughter] did MyBook, I mean the other one...

I wanted to learn more about the issue of fluency in the participants' use of basic computer technology, Microsoft Word, PowerPoint, and the Internet, and was given permission to conduct a tutoring session at Brandon Tech. Although I did not ask the Brandon Tech participants about their keyboarding skills, it was obvious during the 2009 tutoring session, conducted in the computer-equipped classroom at Brandon Tech, that seven of the students in the class struggled with typing, keyboard navigation, and computer terminology. Before this session, there had been few opportunities for the low-literate students I tutored in the Brandon Tech computer-equipped classroom to use the devices for instruction. On this occasion, the beginning reading students who were not TABE testing gathered around the computers for an introductory session on using Word and PowerPoint, and accessing websites. The group included study participants Karen James, Alice Ngomo, Mrs. J., and Gregory Davis. I opened Microsoft Word, indicating icons on the desktop for each of the programs. As I expected, none of the students were familiar with using a keyboard, and they spent most of the short session searching

for individual letters on the keyboard. Several times they stopped me, saying, “I don’t know what to write about.” Ultimately, each student wound up with about two lines of text.

I moved on to PowerPoint, and instead of having each student open the program, I opened one blank presentation and demonstrated how a person could create their own flyer by using clip art, designs, fonts, borders, and pictures that I had available on my personal flash drive. This activity elicited “oohs” and “aahs” from the students, who agreed that they would like to know how to do these things on their own. In the summer pre-GED class I taught later during the summer of 2010, my co-teacher and I revived this activity to help our more advanced students design an autobiographical slide show with personal pictures and clip art, musical selections, and colorful fonts. They also created resumes, some for the first time. Students in the beginning reading class shared the room with other students, who were openly curious about the computer activities the students were doing, but they were not released from their studies to join us.

Finally, in the Internet introduction exercise, I had each student click on the browser icon and showed them how to type in different websites. These included National Geographic, Discovery, National Public Radio, The Weather Channel, and Mapquest. I moved from student to student to encourage them to click on different portions of the websites, open new pages, and view materials. In spite of their low reading ability and lack of keyboarding skills, they were intrigued by the pictures,

videos, motion graphics, and variety of information they were able to access. This was the only time that I worked on computers with the Brandon Tech beginning reading students. For the remainder of my stay in the Brandon Tech computer classroom, only two of the participants attempted to access the computers on their own, or with assistance from myself, the instructor, or the other tutor.

Even though Brenda Nelson did not use a computer on her own, she was a very observant grandmother, who closely monitored what her grandkids were doing, especially if they were using a computer or cell phone. She told me,

Yes [I watch my granddaughter]. And if it ain't right I'll look over there and I'll tell her, say, "How you do that?" And then she'll start laughin', and then we all start laughin' together, just like it's a little community thing.

Brenda used humor to defuse her granddaughter's forays into undesirable material encountered on the Internet or on television. Brenda may not have known how her granddaughter located the offensive material, but she knew the power of reminding the child that she was being monitored.

By far, the biggest computer-related challenge to fluent use of communication technologies mentioned by the participants was encountered when attempting to complete online job applications. Because the applications were very long and time-consuming, others willing to help the participants would lose patience before the applications were complete. Wanda Bledsoe said employers "didn't follow up with me. It's like it goes up in the air." Greg often asked his family to complete tasks for

him on the computer, and admitted that, since “reading the instructions would be hard,” he would have difficulty applying for jobs online. Brenda had applied for “2 or 3” jobs online, and experienced significant frustration with the process.

Even using communication technology at work was challenging for Mrs. J., who struggled to achieve a sense of fluency in her use of the department store computer. Mrs. J. mentioned that she would “like to get some training, but the young girls [her co-workers and nieces] just don’t know how to slow down,” and take their time to show her how to use computer features and access programs. Gregory, one of the other students who were employed, told me that the GPS did not necessarily make his job easier, since he had done the same work without it for 25 years. Gregory was fluent in his use of the construction skills and instincts he learned over the years, but the addition of the camera, monitor, and GPS alerted him to the new developments in communication technology he could expect to encounter in his work.

### **Fear of Complexity/Unknown**

The participants perceived that some communication technologies were simply too complex for them to master. They expressed fear, hesitation, and reticence regarding technologies they had not used before, and believed they would require significant assistance to learn how to use them. By far, the participants thought that computers would be the hardest things for them to learn, understand, and use, even

as tablet computers and smart phones are simplifying computer use for many others. They felt that some devices and applications were extraordinarily complex, and were afraid that they would never be able to learn them. This concern extended beyond computer hardware to also include mobile phones, DVD players, camcorders, Facebook, text messaging, and online job applications.

Gregory's approach to using any new technology reflected that of other participants, with his willingness to "get in and tinker" with a new technology. In a similar fashion, Karen said she learned how to use her first cell phone on her own. Both Wanda and Crystal told me that they would try to make a device work first, and then, if they were not successful, they would seek assistance. However, other students were concerned that activities like accessing the Internet would be overly difficult or significantly complex. Sue believed that the hardest technology for her to learn how to use would be the Internet. Mrs. J. was another student who had to tackle the difficulty of learning a complex technology on the job. When she talked about having to tell her younger co-workers to slow down during her store training, she was concerned that there would be a lot of information that she would not know, or be able to remember, while she was under pressure to complete a transaction. She often called her colleagues over to help her in the early days at the store.

When I asked other participants what they would do if they needed to get something done on a computer without having the skills to do it themselves, almost all of them responded that they would ask a family member to do it for them, rather

than the “try it first” approach. Often, these adults felt that the tasks they needed to accomplish were either too complicated and difficult for them to do on their own, or they had no idea where to start. Debra said that if there was something that she needed to do on a computer or other device, “I don’t know, so I’d ask my [11-year-old] daughter,” while Wanda’s Mom and Crystal’s cousin were called on to accomplish computer tasks.

Using the Internet, and using it safely, caused concern and fear because the participants were not sure about how they could ensure this security. Sharon Patterson was extraordinarily concerned about “how to use the Internet safely,” and Karen was even concerned about “just logging on the computer and the Internet.” She went on to say,

I think it would be hard to use a computer in school, or doing searches. I would probably just take my time and try to learn it, just like my phone. But I think the phone was easy, the computer will be hard.

Since Karen did not have a computer at home, she had very limited experience in completing even basic computer operations.

Smart phones, and even features like voicemail, posed problems for these adults. Gregory had used his daughter’s smart phone, but found it had too many features and functions that he had no idea how to use. Debra found her cell phone’s voicemail feature complicated. She said the hardest thing for her to learn was how to set up her voicemail greeting and retrieve voicemails from her cell phone, and

added, "I couldn't work it at first." Several other participants mentioned that their mobile phones contained other, advanced features besides voice service, but that they simply did not know how to use them. Wanda had a cell phone equipped with enhanced features, including a camera and texting keypad, but she did not use these features. As previously mentioned, text messaging also seemed complex to some of the participants, and many, like Brenda, tried but later gave up. Even operating a camcorder was a challenge and was a foray into the unknown. As a grandmother, Brenda wanted to capture memories of her family, and told me,

I want to really learn how to make a home video or something. And I would like to learn how to work it. But you really have to have a lot of patience to really get someone to really help you on it. So I just backed away for a little while. Maybe one day I'll get it [Laughs].

Beyond learning how to operate computers, cell phones, and camcorders, most participants have had only a passing exposure to the terms Facebook and Twitter, and did not know or understand how the newest social networking applications work. When the students were asked how they felt when TV shows or news programs tell the audience to send texts or Twitter messages in response to a news report or programming, most of the participants admitted that they did not know what the announcers were talking about or how they could participate. When I asked Brenda Nelson about this, she replied, "What is Twitter?" She continued,

I'll be sayin', I mean, how do you get to Twitter? What is Twitter? That's the main thing I would like to know. What is Twitter? I just sit there and look like, in a daze...

When I asked Mrs. J. about this issue, she replied,

Well, I know I can't Twitter, 'cause I don't know what Twitter is. Lots of stuff they got on there. But I wish I knew how, you know, because I know it's out there. Because, see I can't set up my, my uh, whatcha call them things... I have to call my son or my granddaughter over to get, like I'm setting up a movie because I got the VCR and I got all that. But to set it up, I ain't learned all that. My husband used to could do that but now he can't see that good, I'm left-eyed Nicole, lot of things I wish I had did more.

Debra Kennedy, who lives in rural Crayton County, was an extreme case. When we discussed the issue of sending feedback to news outlets and communicating with friends through Facebook, she looked at me intently and said, "What, I never heard of no Facebook!"

As discussed previously, the adults in this study who attempted to apply for jobs online were frustrated with the complexities of the process, and they were afraid that they would not know the outcome. Brenda told me, "Yes, yes I did [try to apply online]. But I just really, really didn't get the hang of it." Alice's difficulty was because, she concluded, "you must read and understand the instructions and questions."

When I interviewed Karen James, she admitted that she really did not know much about computers or the Internet, but she had submitted one online job application. She described the process as “difficult and long.” Later, I asked her to tell me more about the process she went through to submit the job application. At the time, she told herself, “I don’t want to do this again. I hated it. It was a long process, and I had to ask a friend to help me.”

For these study participants, finding someone to help them navigate their fears and complexities, and getting them to work closely and patiently to instruct them, is extremely rare. As Brenda Nelson simply put it, “They don’t really help. They don’t really show, they don’t have the time and the patience to show you how to really, to work these...” Mrs. J.’s son would help her, and occasionally show her how to do a task, but this was not a regular occurrence. Despite the presence of several relatives in their homes who used computers and other technologies on a regular basis, these participants did not feel that they would have the assistance they would need over time to slowly, but surely learn to use the devices. The frustration over not knowing how to do what they believed others could do with ease was clearly evident. In the end, communication technology was just as unknown and complex to these adults as it ever was before the participants asked for help. When another family member took the task out of their hands, opportunities to “get in and tinker,” as Gregory would say, became even fewer.

## **Access**

For various reasons, participants reported that they did not have access to some communication technologies. As have other Americans, some of the participants had given up their landline phones for mobile phones due to the prohibitive costs of having both services. Others mentioned that they once had cell phones, but disconnected them due to cost. Mrs. J. mentioned, “Yeah, I did have a cell phone. I don’t have it now. I cut it off because of the price.” Brenda reiterated the cost concerns, “...cause I can’t be wastin’ no minutes. Those prepaid phones is no joke.” Clearly, cell phones and other 20<sup>th</sup> century communication technologies were readily available and accessible to the adult literacy students in this study. They all acknowledged their use of traditional media, including television and radio. However, there are issues of lack of physical access to technology hardware, as well as a lack of knowledge of how to obtain and use new devices and applications.

**Hardware access.** For some participants, the issue of access to communication technology hardware could be as simple as not having the caller ID feature on a cell phone (Brenda), or actually possessing a computer that is still “in the box” (Sue). Regarding not having caller ID, Brenda was very concerned about not knowing who was trying to reach her. Sue’s issue was having the hardware but not in an operational state. During a tutoring session, Sue excitedly told me that she had just bought a new computer, but said, “I haven’t had time to pull it out and hook it up.” For Sue, owning the hardware did not translate into computer use or Internet

access. In the case of other participants, not having a job meant that they had no exposure or access to technologies that others take for granted in the workplace. At the time of our interview, Debra said she had not worked “in a long time.” Brenda, who did not work, said that she spent so much time on the phone “‘cause the other things I really don’t, really can’t get to like I really want to because I don’t have them kind of equipments around the house.” Other study participants believed that they needed to have access to computers and the Internet to help make themselves job ready. Karen lamented that the hardest thing for her would be “just logging on,” because she did not have a computer at home to “play with the technology.”

**Knowledge to gain access.** When adults, like those in this study, have limited access or exposure to 21<sup>st</sup> century communication technology tools, there is also the possibility that they have no knowledge of how to even gain access. Alice Ngomo spoke excellent English, but because her primary language is French, it took her twice as long to understand and decipher computer instructions in English. Her frustration differed somewhat from the other nine native English speakers in this study, but there still existed among them the perception that they were being left out of a world that is easily accessible to others. I often heard participants remarking, “I don’t feel good about it [using technology], ‘cause I can’t do it,” or “I’d love to know how to do that. I feel bad because I don’t know how.” Brenda simply concluded that she was missing something, wondering, “...yeah, what is goin...this is something new...”

## **Negative Stereotypes**

Participants came to the conclusion that some communication technologies were just not for them. The technologies did not fit their personality or lifestyle, or they may have succumbed to negative stereotypes about the technologies. Perhaps Sharon Patterson represented the most extreme example of someone who expressed fear of computers and the Internet from her exposure to media reports, and from negative stereotypes passed on from others. She reacted very strongly when I asked her if she used a computer, and told me, "I don't like computers. I don't trust them. You hear about all the bad stuff that happens on computers and the Internet," especially stealing passwords, viruses, issues with social media, etc. "I just want to stay away from computers," she added. Later in our interview, when I asked her if she wanted to learn how to use a computer, she said again that she did not want to learn how to use a computer and the Internet "because there's too much going on on the Internet." I was curious about what Sharon did when she needed to get something done. She repeated adamantly that she would not use a computer herself. It was infrequent that she needed to accomplish a computer task, but when she did need something done on a computer, she would ask her daughter to do it. In the end, it did not bother Sharon that she did not know how to use Facebook, Twitter, and email. "I wouldn't go to any websites because I don't believe the computers are secure or safe," she told me.

Sharon was not alone in her concern about computer security. Karen James professed a fear of computers, and Debra Kennedy also seemed resigned to not using communication technology, telling me, "It shouldn't bother you if you can't do it." Debra rarely used her cell phone, and did not use any of its enhanced features. Her daughter was more likely than anyone in the family to be using both her Mom's and grandmother's cell phones to take pictures and send text messages. Debra's daughter also had a computer, but Debra did not express any concerns about her daughter's use, or abuse, of communication technology. She did not mention if she monitored her daughter's contacts and website visits. The concerns that Sharon Patterson from Brandon Tech spoke of in regard to her own exposure to computers and the Internet did not appear to have been considered by Debra. Gregory Davis' children and grandkids were very much like Debra's daughter; they are tech saavy and they use all the features, including texting and watching movies. In Greg's case, he expected that his adult children would monitor their own children's use of the Internet and cell phone features to make them aware of Internet threats and mobile phone misuse.

Often, the participants mentioned that other family members and friends use technologies, but they themselves do not, or cannot use them. They expressed some concern about not being able to do what others around them were able to accomplish. For example, I asked Karen to describe how her family uses technology. She said that her nephews play video games, but she does not. Karen

also knows that others can complete tasks, such as sending emails, texts, and “tweets” to celebrities and news programs. When I asked Karen to tell me how it felt to be excluded from such conversations, she replied, “It sucks. It feels outdated, I mean I feel outdated. I remember how excited I was when I got my first cell phone. I had a pager before, too, but this new stuff, I don’t know.” Crystal was concerned about her cell phone pictures being put on the Internet without her permission. Brenda told me that she had been on a computer, but when I asked if she considered herself someone who knows how to use a computer, she replied, “No, no.”

There were other instances where there were concerns, not about the safe use of the technology, but instead about how the technology would be used at all. Karen James approached me some time after our interview to ask for my help with a task she had wanted to do for some time. Karen looked at me with a sense of longing, and said, “I really want to write my sister a letter.” “You can do that. I’ll help you. You can even write it on the computer,” I replied. “Where does your sister live?” I asked her. Karen answered, “She’s in prison, and I’ve never been able to write her. That’s why I want to learn how to read and write.” I urged her to try to think about a few words she wanted to say to her sister, and that we would sit down at the computer to type the letter. However, several months later in August 2010, when she was dismissed from the literacy class for not making sufficient progress, she still had not written the letter to her incarcerated sibling.

Another potential aspect of negative stereotypes about technology use was observed during tutoring in Crayton County. At the Crayton research site, I never had the opportunity to work on the computer with the beginning reading students during the months I tutored there. Neither Debra Kennedy nor Sue Jackson used the computers in the Crayton classroom. Much of this time, either the instructor, Miss Nancy, the testing coordinator, Mr. Windham, or the young male pre-GED students were using the computer to complete a county-wide geography educational competition on an American state. There was no overt indication that the three low-literate women I tutored were being discouraged or forbidden from using the classroom computers. In fact, one of the low-literate students assisted the male students in preparing materials for the display. I also wanted to assist, and helped prepare materials for the display, provided a plant for the project, and loaned the class sea shells from my collection. I also located a picture and an article on a literary figure from the state that was added to the display. Fortunately for the entire facility, Miss Nancy's class actually won the county-wide competition with what ended up being a very elaborate project. However, an opportunity was missed to introduce the low-literate female students to electronic media by allowing them to assist with the online research and gain experience with exhibit preparation.

RQ2 revealed a number of challenges, pitfalls, and obstacles that the low-literate adults in this study faced as they attempted to learn to use new and emerging communication technologies. The issues of fluency, fear of complexity and

the unknown, perceived lack of access, and negative stereotypes make negotiating the world of new communication technology a difficult place for these adults. Next, we will examine what the low-literate participants believe they will gain if they learn to use technology.

### **RQ3: What do low-literate adult students hope to gain from their imagined future uses of technology?**

RQ3 yielded data in three categories, which suggest that low-literate adult students aspire to use new and emerging communication technologies to participate in what they perceive as the larger networked community. The participants want to:

- ◆ Expand connection capabilities
- ◆ Catch up with society
- ◆ Become independent

The operational definitions for the categories of RQ3 follow.

#### **Expand Connection Capabilities**

The study participants wanted to learn how to use new technology to connect with others, both family and friends, and the outside world. Several participants expressed their desire to have email capability. Despite her low reading level, Karen James specifically wanted to know how to “log on to a computer, and I want an email address. I don’t have a lot of friends, so I’m not all that interested in Facebook...”

Karen says that if she had a computer, “I would ask for help to log on. I really need to get an email address.”

Sue Jackson looked forward to getting her new computer operational, in part to have another way to communicate with her family members about her mother. Brenda Nelson also “would like to [learn to use email]. Yes, I would really, really love to learn how to” send an email to her friends. “It would be nice,” she sighed. Close behind email, a number of participants reiterated their desire to learn to read, compose, and send text messages to family members. Wanda, the youngest study participant who does not send text messages, wants to learn how to do so in order to stay in touch with her family. She explained that she becomes very frustrated and “left out” when she hears invitations to “text your favorite” on shows like “American Idol,” and only remind her that she does not know how to text. Debra also wanted to know how to send a text message like her 11-year-old daughter does. As expected, understanding text messages is almost impossible for these participants. The adults in this study were convinced that they would be able to establish and expand their connections with others if they learned how to use this feature.

Several of the participants witnessed family and friends using other features on their cell phones, especially cell phone cameras. The adults in this study, especially Sharon Patterson and Crystal Brown, were very interested in learning more about how to use their own cell phone cameras, particularly the capabilities of printing, texting, and emailing pictures to family and friends. Creating and sending

digital pictures and videos was very important to Brenda as well, who did not know how to use a digital camera or digital video recorder, and could not use her broken cell phone camera. She was eager to “learn how to work all of these” devices to capture the antics of her grandkids while they were still young, and to share the videos and pictures with the children’s relatives as she had seen others do on Facebook and YouTube.

When it came to using Facebook to communicate with others, Brenda and Alice were the exceptions among the participants. Although these two participants used Facebook and Hi Five, they primarily did so with real-time assistance from their family members, making some of their communication less-than-private. Despite this, Brenda seemed especially pleased with her Facebook profile, since several “friends” had contacted her with “friend requests.” However, having her picture on her page continued to be important to her. Learning how to post her family pictures and videos to her Facebook page and to YouTube were skills she wanted to acquire. Yet for those participants who did not use social networking, they were disappointed that they were not able to use these tools to communicate with their families, or browse the Internet. Sue wanted to make her opinions known via social media, and said, “I’d love to know how to do that. I feel bad because I don’t know how.” Using electronic technologies like Facebook and the Internet to access further information presented on a television program also appealed to Alice, who felt that being able to use these technologies would help her to better understand the story or program,

and would assist her in holding spirited conversations with her family and acquaintances.

Overall, the adult learners in this study wanted to expand their abilities to connect with their families and friends using technologies beyond simply using the phone. They have witnessed others using 21<sup>st</sup> century technologies, such as Facebook and email, and they have even been the recipients of text messages and friend requests, but find themselves unable to participate in such conversations easily. They continue to hope that they will ultimately be able to do things that others close to them can do.

### **Catch Up With Society**

The participants in this study wanted to be able to do what they feel society is doing, and they felt internal and external pressure. Brenda Nelson, the first Brandon County participant interviewed, may have put it best when she suggested that she must be missing something whenever she hears about a new communication technology. As we talked about sending emails, watching YouTube videos, and creating a blog, she remarked, “Yes, exactly. I’m quite sure everybody else do have one [except me].” Mrs. J. felt embarrassed about her lack of expertise with communication technology, compared to others, including her own goddaughter.

Really, I wish I knew how to use, really, all of it. Because, you know, it used to embarrass me because of my goddaughter. When she was like this [indicates

size of godchild], she would come over, “Godmother.” And I’d say “Honey, you know how to use that computer?” “Well, yes Godmother, I do” and she’ll [makes sound effects simulating typing]...

Ultimately, Mrs. J. was optimistic about learning to use new communication technologies. Gregory Davis was impressed with the smart phone technology he saw advertised on television. He observed others using Blackberries, iPhones, and similar communication devices in his construction work, and watched his own adult children operating the devices. He indicated that the technology he wanted to learn most was “Sophie’s phone,” his daughter’s smart phone. On the other hand, Crystal’s primary aim was to have her own MySpace page like her friends. Wanda Bledsoe looked forward to owning an iPod as do others in her age group, but she admitted, “I don’t know how to put the music on it, and my Mom and sister don’t have time to show me.”

The desire to catch up with society was also a motivation for many of the participants to learn to send and receive text messages, as mentioned previously in this study. Even before this study began, other Brandon County reading students expressed the same desire. Participants in this study also marveled when they saw younger students texting rapidly while on break, and aspired to be able to do the same.

The findings were quite different with the participants at the Crayton County site, where the rural county setting did not reflect the kind of communication

behaviors observed in the urban setting. Debra's assertion that she did not know what Facebook is was coupled with Sue's lack of awareness of how her computer could be used to communicate long-distance with friends and merchants. In our discussions during tutoring sessions, Sue expressed her anticipation over learning to use her new computer, but her knowledge of its communication capabilities was limited. Sadly, we never had the opportunity to use a computer in the classroom to begin exploring the Internet and experimenting with email and other applications.

### **Become Independent**

Participants believed that if they gained skills in using communication technologies they would become independent. They wanted someone to take the time to show them how to do something so they could subsequently do it on their own. Brenda Nelson was challenged in her quest to become independent in her use of computers and other technologies because she found that others were simply not patient enough with her. Still hopeful, Brenda had no idea when she would ever learn how to do new things with communication technologies, or who would help her master them.

Alice said that her little sister knew how to use the computer "very well." Alice believed that if she were working, she also would be able to use a computer effectively, and that she would enjoy doing so. She also wants to learn how to use a digital camera. Wanda not only wanted to download music to her own iPod, but she

also said, “I think I’d like to learn computer repair,” which would allow her to support herself financially, and ultimately enable her to leave her parents’ residence for a place of her own. Sue knew that having her new computer would allow her to accomplish additional tasks that she had not been able to do before. Since she had never used computers for work or pleasure, however, she anticipated asking for help to get started, and believed that she would be able to continue on her own after minimal direction. As I worked with Sue, I realized that she was a very good student, she read and wrote well, and only lacked confidence that her written work contained “the right answer.” She never needed a great deal of help, and this independent nature was bound to carry over into her future computer use.

Mrs. J., the oldest Brandon County participant, echoed many others in the study who looked forward to being able to operate communication technology independently. “So I hope to, you know, I really want to sit there and know how to do it. I think you should do things for yourself,” she told me during our interview. The same sentiment was observed during my computer work session with several participants at Brandon Tech, who all agreed that they would like to use computers on their own.

From my observations in the field, the materials used in classes did not focus on, or utilize, communication technology. Occasionally, the instructor at Brandon Tech, Zelda Stein, and the instructor at Crayton, Miss Nancy, used newspaper articles printed from the Internet to supplement GED prep workbooks and materials

in class. Rarely did I observe either instructor giving students assignments to bring in newspaper or magazine articles, interesting websites, or other media that they discovered on their own. Later in my tutoring sessions at both locations, I brought in history books, biographies, and magazines to encourage students to pursue reading and writing activities outside of class. I also made suggestions to the instructors about videos and other educational resources that could enhance the pursuit of literacy, such as the DVD, "Precious," about a young single mother's quest to learn to read and write. Soon after one of my tutoring sessions, a Brandon Tech student who was not a participant in the study proudly told me that, after hearing some of the historical biographies I presented, he went to his local library and checked out *The Autobiography of Frederick Douglass*. Another student checked out the movie *Roots* after hearing about the struggles of African Americans in slavery. I also had the opportunity to share a New York Times article from Zelda Stein's class in Brandon County with the students I tutored in Crayton County. The article, about raising chickens in urban areas, actually resonated a great deal with the rural students at Crayton who raise chickens for eggs. I encouraged the students to look for materials they might like to learn to read, and to be aware of current events and local news.

Over the duration of the study in both locations, I discovered only 6 pages out of over 500 pages in GED prep textbooks and reading workbooks that dealt with what would be considered new and emerging communication technology (*Contemporary's Achieving TABE Success in Reading, Level E, 2006;*

*Contemporary's Reading Basics, Intermediate 1 and 2*, 2001; Fry, 2000; McNemara, 2003; Steck-Vaughn *Language Exercises*, 2006). Two pages discussed the Internet, with a fill-in-the-blank activity, a GPS system, and mobile phone use for voice (Appendix G), an exercise discovered, interestingly in a rural Crayton Community College workbook, not in an urban-based Brandon Tech workbook (McNemara, 2003).

The data generated in response to RQ3 provide insight into the aspirations and desires of the participants to use new and emerging communication technologies to expand their connection capabilities, catch up with society, and become independent. If these adults had their way, they would begin their exploration of technology by asking family members and friends to provide initial instruction, and then the participants would be able to function independently from that point forward.

Now that the results have been presented, I will discuss the findings, provide a detailed look at the results in relationship to the literature, and discuss the implications of these results.

## Chapter 5

### Discussion

As we revisit the questions posed at the beginning of this dissertation research and examine the results of the data analysis, the core concept that emerges is that low-literate adults rely on others to access technologies for them, and do not find themselves in situations or environments where others can take the time required to help them master these technologies to a level that meets the learners' satisfaction. The results of this study indicate that there is significant underutilization of 21<sup>st</sup> century communication technology by low-literate adult students. Low-literate adults' use of new and emerging communication technology is negligible, and these individuals are virtually invisible on the 21<sup>st</sup> century communication landscape. Their exposure to, and use of, advancements in communication technology and social media is limited, and obstacles persist, particularly when technology developers, educators, the wired public, and at times their own families and friends, do not know that these individuals or their challenges exist.

Four core categories emerged from the data collected in observations, interviews of the ten (10) participants, and artifacts gathered in the field:

- traditional media is the primary means to reach low-literate adults;
- voice telephone services are crucial to helping participants stay connected;

- computers and the world of online communication are still like a foreign land to low-literate students;
- low-literate students are very frustrated that there is so little help for them to learn to use new communication technology.

These core categories were developed through the use of the grounded theory tool of axial coding, which allows us to connect the common threads between the results of the typological analysis and the core concept.

### **Traditional Media Primary Means to Reach Low-Literate Adults**

As we see in the results for RQ1, the participants in this study love and greatly rely on radio, specifically gospel music on FM radio, for entertainment, inspiration and news. Gospel radio stays on almost all day (and night) in many houses. Four of participants from Site 1 reported that they primarily use radio to listen to gospel music. Other participants also listen to music on the radio during a significant part of their day. If these students get news, it is usually top-of-the-hour newscasts on their radio stations. Only two of the participants mentioned watching either local or national televised news. These students also watch television, mostly soap operas, talk shows, and, to a lesser extent, comedy shows. Interestingly, no participant mentioned owning an iPod or other mp3 player, or that they have music stored on their phones, but several mentioned that they purchase and listen to CDs, either at home or in the car.

The adult literacy literature concurs with these findings, and indicates that low-literate adults rely heavily on the traditional, 20<sup>th</sup> century broadcast technologies of radio and television (Bernhardt & Cameron, 2003; Duff, Singhal & Witte, 2005; Jibaja-Weiss & Volk, 2007; Ratzan & Parker, 2006; Rudd, 2007; Smith & Gonzales, 2005; Wade & Schramm, 1974). These one-way, sender-to-receiver technologies are comfortable for this group of adults, despite the fact that they have no ability to provide a feedback mechanism typical of Web 2.0 technologies. The low-literate adults in this study have adapted their lifestyles to the visual and aural communication tools that require that they do no more than turn them on. This core category will be further illuminated beginning on page 139.

### **Voice Telephone Services Crucial to Staying Connected**

Low-literate participants in this study are very reliant on cell phones primarily for voice communication, as we find in the results from RQ1. Most participants talk on them “a lot,” not just for emergencies. However, they are extraordinarily concerned about using minutes on their predominantly prepaid phones. Others mentioned that they once had cell phones, but disconnected them due to cost. Not only do the participants in this study spend a great deal of time on the phone, but so do their family members. Several participants mentioned that their cell phones contain other, advanced features besides voice service, but that they simply don’t know how to use them. Others simply possess their phones for voice service only. Only four (4) of the

study participants reported that they were able to send texts in a limited fashion. They can read most incoming texts, but do not send text messages often. Virtually all of the participants admitted that they find it hard to understand texting language sent to them.

As the literature tells us, low-literate adults are fluent in using telephones as a means of creating social presence, and this technology is one that they utilize regularly (Kalantzis & Cope, 2000a; Katz & Rice, 2002; Kirsch, Jungeblut, Jenkins, & Kolstad, 2001; Rainie, 2010; Rice & Katz, 2003; Sawhney and Lee, 2005; Smith, 2010; Spooner & Rainie, 2010; van Dijk, 2005; Young, 2005). As we know, however, telephone technology has changed significantly over the last 20 years, and the interactivity provided through cellular service, texting capability, and Internet access are not characteristics of traditional telephone service. The reliance of low-literate adults on voice features of today's phones means that these adults are not exploring all of the possibilities of 21<sup>st</sup> century telephone technology, and they are challenged when attempting to use advanced features.

### **Computers and Online Communication Like a Foreign Land**

The results from RQ2 describe the fear of complexity and the unknown that characterizes low-literate adults exposure to computers and the Internet. These participants either do not have access to these technologies, or do not possess the basic knowledge required to access and use them. Although five (5) of the students

live in homes where there is a computer, almost none of those interviewed have any experience with using a computer on their own. They typically must ask others, like kids or grandkids, to complete typing projects and other things for them. It is the kids (youths and adults), grandkids, younger siblings, and other relatives who access websites, build Facebook pages for them, and open pictures and PowerPoint slides sent to the few participants who had email accounts. Several participants stated that their grandkids are the “experts.” Other participants had also attempted to use computers and the Internet, but cut off their Internet service and printing due to excessive cost. Only two of the participants have Facebook pages, and only one participant used a computer on the job. One other participant uses a global positioning system (GPS) as part of his work operating heavy construction equipment.

Only four of the Brandon Tech students had applied for jobs online, and most expressed frustration because they could not do so independently. Another obstacle was the time-consuming nature of the process, resulting in participants losing patience and giving up, or being kicked out of the system. None of the participants in the study had filled out government forms online.

There were few opportunities for the low-literate students I tutored in computer-equipped classrooms to use the devices for instruction. None of the students were familiar with using a keyboard or mouse, and spent most of a short instructional lesson searching for individual letters or screen icons. As the study

progressed, I observed only two of the participants attempt to access classroom computers on their own, or with assistance from myself, the instructor, or another tutor.

As we have seen in the literature, low-literate adults have less experience than others in using computer technology (Luke, 2000; Meyer, Talbot, Poon & Johnson, 2001; Silver-Pacuilla, 2006), and have few opportunities to experiment and learn with computers either at adult literacy centers or in the workplace. With less experience in basic computer commands and navigation, and despite being in close proximity to computers and Internet technology, sometimes in their own homes, the low-literate adults in this study are not comfortable using this technology on their own. Further discussion on this core category follows later in this chapter which describes how low-literate adults lack the necessary skills to join the communication revolution.

### **Low-Literate Adults Very Frustrated Little Help Available**

As indicated in the results from RQ1 and RQ2, the participants in this study expressed strong desires to learn how to use new and emerging communication technologies, and there is no evidence in the data to indicate that these adults do not want to use these devices. On the contrary, the participants' biggest frustration is that they really want to learn to use technology, but there is no one among their family or friends who have the time or patience to teach them. Even though others

do things for them, they really want to learn how to do things for themselves, as we learned in the results from RQ3. Activities like moving photos from a cell phone to a print copy, learning how to send email, or watching a show online were things these participants wanted to do, but family and friends did not offer to help them. The study participants are not looking for proficiency in technology use, as they see their children and younger siblings flying through devices such as text messaging and emailing, but they each expressed the fact that they want to know enough to provide themselves with a satisfactory experience.

Despite the presence of several relatives in their homes who used computers and other technologies on a regular basis, these participants didn't feel that they would have the assistance they would need over time to slowly, but surely learn to use communication technologies. The frustration over not knowing how to do what they believed others can do with ease was clearly evident.

Interestingly, no participant mentioned that they wanted to learn how to use communication technologies to facilitate their educational goals or to achieve their GED. Finally, none of the study participants mentioned that they wanted to use communication technology for online shopping, banking, or bill paying, and in fact, expressed concerns about Internet privacy and security that would have made such use problematic and stressful.

The literature in adult literacy and communication technology indicate that low-literate adults are given little guidance on how to use computers, even though

computers might have been within easy access, either at home or in classrooms (Berger, 2005; Churchill et al., 2007; Frenette, 1996; Luke, 2000; McCauley & Rice, 2007; Rosen, 2007; Salkowitz, 2008; Silver-Pacuilla, 2006). Due to lack of skills on the part of family members or instructors, effective instruction in the use of computers was lacking in the accounts in the literature, and this appeared to also be the case among the participants in this study.

The preceding discussion of the results provides a high-level overview of the findings from this study and were derived from the process of axial coding. In the next section, the results are further discussed in detail in relationship to the literature reviewed in Chapter 2.

### **Low-Literate Adults Lack Skills to Join Communication Revolution**

The participants in this study are not sufficiently exposed to new technologies at home, or at school, to provide them with the fluency necessary to become comfortable with understanding, evaluating, and using these devices and applications. Although the participants did not identify their reading ability as an impediment to using new and emerging technologies, observations of the participants using computers and texting indicated that spelling, specifically, prevented them from using the technologies effectively (Gillespie, 2007). Despite the proliferation of these devices and applications, many low-literate adults in this study had not even heard of many of them (Castells, 2000; Jenkins, 2006; Keren, 2006;

Landow, 2006; Lévy, 2001; Manovich, 2006), in spite of numerous mentions of Facebook and Twitter on the traditional, 20<sup>th</sup> century media of radio and television, technologies low-literate adults report using daily.

There is a strong reliance on these traditional media for entertainment and information (Bernhardt & Cameron, 2003; Duff, Singhal & Witte, 2005; Jibaja-Weiss & Volk, 2007; Smith & Gonzales, 2005; Young, 2005). These learners frequently use voice services on their cell phones, allowing them to stay in close touch with family and friends, both near and far (Biocca, Harms & Burgoon, 2003; Fulk, Schmitz & Steinfield, 1990; Hwang, 2005; Lombard & Ditton, 1997; Lombard et al., 2000; Rice, Chang & Torobin, 1992; Short et al., 1976; Tu, 2002). This suggests that the participants are seeking a form of social presence when they use these devices.

However, the participants rarely send or receive text messages, and do not use other 21<sup>st</sup> century communication devices such as Twitter, Facebook, email, or Skype, restricting their ability to become experienced users of social media. Instead, they depend on other family members, who are usually younger, to access computers and the Internet on their behalf (Reder, 2007). The research conducted for this study clearly indicates that social media, which has become the hallmark of today's communication landscape, and which promises to provide even more social presence, is not nearly as available, accessible, or user-friendly for these individuals as it is for others.

The participants' goals for using communication technology appear to be very simple. They want to email family and friends, make videos, save and send digital photographs, surf the Internet, prepare their own documents, and provide feedback to media reports and government officials. Their lack of skills and bleak prospects to learn them without further assistance and instruction may keep them from experiencing the full benefits of 21<sup>st</sup> century technology (Maddox, 2007; Salkowitz, 2008). Not only that, but the participants' limited knowledge of this technology means that they may not know even what they need to learn, they may fail to decipher the uses of the technologies, or they may not be able to identify the types of gratifications they would gain from their use, as we would expect in the uses and gratifications scenario (Blumler, 1979; Blumler, Gurevitch, & Katz, 1985; Katz, Blumler, & Gurevitch, 1974a, 1974b; Katz, Hass & Gurevitch, 1973; LaRose & Eastin, 2004; Lin, 2002; Papacharissi and Rubin, 2000). In fact, this study revealed that instead of choosing which technology or device best meets their perceived needs, they have very little choice except to persist in using mostly 20<sup>th</sup> century technologies, such as radio, television, and telephone, to accomplish their goals.

The participants in this study are also hampered by the stigma of being identified as low-literate, and often experience feelings of shame and embarrassment. Even more importantly, the participants have no real voice in providing feedback to news reports, congressional initiatives, television programs, or other media outlets that their younger, more technology savvy relatives take for

granted (Tichenor, Donohue, & Olien, 1970). They also blame themselves for their lack of skills and abilities to understand and use new communication technologies, or for their perceived learning disabilities (Hull, 2001; Kozol, 1985; Kruidenier, 2002; Roman, 2004; Salkowitz, 2008; van Vliet, 2008). This study has revealed some of the frustration that low-literate adults experience when they are not able to express themselves by means other than verbal, and they have exhibited issues of low self-esteem and what they identify as their inability to learn (Bernardt & Cameron, 2003; Hull, 2001; Kozol, 1985; Kunjufu, 2010; Lytle, 2001; Parker, 2000; Qualls, 2001; Quigley, 1992; Rigg & Taylor, 1979; Roman, 2004; Smith & Gonzales, 2005; Snyder et al., 2005; Wolf et al., 2007). This sense of shame seems to be exacerbated by our society's increasing reliance on text-based technology. We must conclude from the results of this study that there is a segment of adults who have more significant hurdles to using communication technologies than simply following the instructions, playing with the devices, or watching as others use them.

There was no apparent difference in technology access between Brandon and Crayton counties. Both counties appeared to have adequate mobile phone and Internet coverage, along with sufficient traditional media coverage. However, as mentioned in Chapter 4, due to cost constraints, several participants could not afford cell phones or the Internet, contributing to their being on the wrong side of the digital divide (Hamelink, 2000; Katz & Rice, 2002; Kuttan & Peters, 2003; Mack, 2001; Mossberger, Tolbert & Stansbury, 2003; Norris, 2001; Rice & Katz, 2003; Rice &

Katz, 2008; van Dijk, 2005). These participants believe that they are also on the wrong side of communication technology usage, and they spoke often of what they perceived would be negative consequences for their future careers and lifestyles. In short, they are very concerned about being left behind by society.

I also argue that it is clear from the results of this study that there is no systematic means for low-literate learners to obtain the skills needed to use new and emerging communication technologies, and find that they lack assistance from family and friends, educational institutions, or literacy providers.

**Family and friends do not teach technology.** Those who would assist the low-literate adults in this study in learning how to use these technologies, particularly their family and friends, appear to be hesitant in providing such assistance. Perhaps this is because they feel that there are not one, but two learning hurdles. Not only must their relative or acquaintance be taught how to use technology, but they must first be taught how to read and write, which represents a much more difficult task for those who would teach them. The lack of reading skills may explain why family members and others provide very little help in teaching these individuals how to use technology. Those who would assist may conclude that they do not have time or the ability to teach both reading and technology use, and find it more convenient to simply complete the tasks themselves.

Activities like moving photos from a cell phone to a print copy, learning how to send email, downloading music, or watching a TV show online were things these

participants wanted to do, but family and friends rarely offered to help them. Karen James did not think she would be able to even turn on the computer or log on to the Internet without someone available for her to “ask for help.”

**Educators fail to provide instruction.** From my observations in the field, if the low-literate participants in this study wanted to learn how to use new and emerging communication technology, the materials they used in class did not support their aspirations. The heavy reliance on print textbooks and workbooks by adult basic education (ABE) programs and their instructors (*Contemporary's Achieving TABE Success in Reading, Level E, 2006; Contemporary's Reading Basics, Intermediate 1 and 2 2001; Fry, 2000; McNemara, 2003; Steck-Vaughn Language Exercises, 2006*) means that these materials were rarely supplemented with other resources that focused on current events or issues that were relevant to these learners. Freire's banking concept of education (2001) is very well entrenched in current ABE pedagogy, in spite of classes being held in computer-equipped classrooms where all students could complete individualized lessons in a computerized learning environment.

Classes were conducted virtually the same way each day (Rogers & Fuller, 2007), and very few of the assigned readings or activities referenced or involved use of any communication technology. Eventually, instructors introduced real-world assignments, articles from local and national newspapers and websites, novels, biographies, and other materials. Later, computers were used to instruct some of the

beginning reading students in Brandon County. Subsequent to the introduction of these new materials, many students, including the low-literate students in this study, reported increasing interest in reading novels, biographies, historic and science publications outside of class (Kozol, 1985; National Commission on Adult Literacy, 2008; Reder, 2007). For instance, Crystal Brown proudly pulled a book on penguins out of her book bag, and pointed out some relatively sophisticated scientific facts that she could identify from the images in the book. Despite this obvious achievement from one of the lowest level readers, for the duration of my time in the field, nearly all the materials I used to tutor the low-literate reading students were print workbooks and photocopied exercises, which were later supplemented by reading materials I supplied. Reading outside of class is a trend that should be strongly encouraged, along with use of materials such as audio books, radio reading services, and DVD movie versions of popular books that are geared toward adults. As Grow (1991) suggests in the staged, self-directed learning theory, Crystal's example supports my contention that it is highly unlikely that low-literate adult students will be moved into the world of 21<sup>st</sup> century communication technology without changes to the materials, devices, pedagogy, and goals of adult literacy programs.

At least two projects that I observed during my field research represent approaches recommended by advocates of the multiliteracies approach to teaching literacy (Cazden, 2000; Kalantzis & Cope, 2000b; Luke, 2000; Street, 1995; The

New London Group, 1996; Williams, 2006). At Brandon Tech, students from the pre-GED reading class, including students with low-literacy reading levels, were directed to bring in a favorite music CD to share a selection with their classmates, an approach suggested by Kalantzis and Cope (2000b). Going even further than these recommendations, the instructors directed the more advanced students to use the building's employment center computers to conduct Internet searches on their chosen artist, and to prepare a PowerPoint presentation explaining how the selection reflected the students' experiences, aspirations, and emotions. In another example of the multiliteracies approach, Crayton's award-winning geography research project was accomplished using the Internet, artifacts, and magazines, all with an aim to produce a virtual field trip, and introduce the state of Florida to persons who had never been there (Luke, 2000). Sadly, though, none of the low-literate study participants actively used the Internet or other communication technology to assist the more advanced students in preparing this project.

I also observed that participants did not complete projects that required use of communication technology if others (instructors, tutors, family members) were not available to help (Brown, Hawisher & Selfe, 2004; Donehower, Hogg & Schell, 2007). Brenda Nelson never placed her photograph on her Facebook page because her granddaughter did not upload it (Huff & Rogers, 2001). Without my assistance, Karen James was unable to complete her letter to her sister, and later she was asked to leave the program without achieving her educational goals, an outcome

that is all too prevalent, as we learn from Hallet (2006), Johnson-Bailey (2001), and Rogers and Fuller (2007). Gregory Davis did not return to school, either, and it is questionable whether he will complete his GED as long as he remains employed full-time, leaving him no time to attend organized instructional classes (Comings & Cuban, 2007; McShane, 2005). My research points out that these learners require a great deal more assistance to become proficient enough in their use of 21<sup>st</sup> century communication technology before they can complete what many of us perceive as simple tasks.

Interestingly, no participant mentioned that they wanted to learn how to use communication technologies to facilitate their formal educational goals or to achieve their GED. They may be unaware of the potential of distance education to help them meet these goals, and also may not know that their current institution can help them learn how to use computers, the Internet, and other technologies, potentially relieving the burden on family and friends. Rarely did instructors in the beginning reading classes discuss educational expectations beyond the GED (such as 2-year community college studies, 4-year universities, or trade schools), improved employment prospects, or increased ability of the adult students to help their children learn, in spite of the endorsement of such an approach recommended by the literature (Rogers & Fuller, 2007). While tutoring students one-on-one, I did encourage them to continue their studies after earning their GED, especially as I became aware of some of their personal motivations for being in school. This study

clearly indicates that learning must be enhanced by incorporating students' goals and contexts that relate to the reality that students face daily (Kalantzis & Cope, 2000b; Kozol, 1985; Kress, 2000; Prendergast, 2003; Purcell-Gates, 2007; Rogers & Fuller, 2007; Shore, 2004). The literature particularly points out that students' goals may not include a formal high school-equivalent diploma, but may be more task-specific, such as Mrs. J.'s church documents, or Brenda Nelson's desire to shoot and upload family videos.

In that regard, providing alternative writing activities besides the responses to questions in workbooks and printed exercises appears to receive even less emphasis than reading (Gillespie, 2007). As a volunteer tutor, I was able to bridge classroom learning with out-of-class writing activities and more contextualized lessons (McShane, 2005), and bring my experiences as a tutor, student, ABE instructor, college professor, and communication technology user to the learning environment (Belzer, 2006a, 2006b). Also, my awareness of the historical significance of reading, writing, and learning in minority communities helped situate the quest for learning for the study participants and their instructors (Prendergast, 2003; Heath, 1983). As an African American, I had a measure of empathy and understanding that many participants found comforting (Shore, 2004). Therefore, this study suggests that much more variety in learning options is needed to improve the outcomes for these learners. Instructors who can bring different perspectives to the students are necessary to achieve the goal of moving low-literate students into the new media environment.

## **Shortcomings of Adult Literacy Theories and Methods**

It is also my contention that the theoretical and methodological foundations of the disciplines of adult literacy and communication are not adequately addressing the unique characteristics, needs and goals of these adult learners, because these theories were designed for mainstream populations. In the review of relevant adult literacy literature, I identified six theories, concepts, or approaches that might be applied to the population of low-literate adult students profiled in this dissertation. These theories may have contributed to helping us interpret some of the data on this group of adults, but each theory possesses shortcomings that will not allow it to be used exclusively to answer the research questions.

As the literature indicates, the theories and approaches of andragogy (Isenberg, 2007; Knowles, 1980; Merriam, 2001), experiential learning (Kolb, 1984), transformational learning (Baumgartner, 2001; Comings & Cuban, 2007; Merriam & Clark, 2006; Mezirow, 1990, 1991), staged self-directed learning (Grow, 1991; Merriam & Clark, 2006), context-based learning (Hansman, 2001; Hase & Kenyon, 2001; Jarvis, 1983, 1987; Terry, 2006a, 2006b), and adults' motivation to learn (Wlodkowski, 1999) can easily be adapted to adult learners who already possess reading and writing skills (MacKeracher, 2004; Merriam, Caffarella, & Baumgartner, 2006), and especially those who enroll themselves in higher education courses. However, this research effort provides evidence that these theories are not as applicable to low-literate persons (McShane, 2005).

Andragogy (Knowles, 1980) suggests that there are systematic ways to help adults learn, which was not supported by observations in the field. Currently, the systematic process of workbook learning is not keeping pace with the technological tools and requirements of the 21<sup>st</sup> century marketplace, and more flexible, tailored learning solutions may be more effective with low-literate adults. Kolb (1984) contends that literacy instruction could be significantly enhanced by incorporating students' life experiences into highly contextualized learning units. The findings in this study, however, indicated that lessons are not relevant to the daily experiences of the low-literate adults who participated in this study. The typical class day begins with students being given the same workbooks they use throughout the semester. Sections of the materials that student must completed are highlighted, and are based on items the student missed on the last TABE test. There is no curricular emphasis on technology use or timely, flexible approaches to incorporating current events and issues into lesson plans. Rarely, if ever, are students asked to demonstrate, discuss, or acknowledge prior learning, regardless of the learning situation where they attained that knowledge. Transformative learning (Baumgartner, 2001; Comings & Cuban, 2007; Merriam & Clark, 2006; Mezirow, 1990, 1991) tells us that adults enter learning situations due to life-changing circumstances, but many of the participants in this study did not express any significant or traumatic event that prompted them to seek literacy. These adults provided a varied number of reasons why they were enrolled in pre-GED reading classes, but few participants referred to a life-changing circumstance that persuaded them to attend.

Staged self-directed learning (Grow, 1991; Merriam & Clark, 2006) would have us expect that students naturally progress from instructor-led lessons to more self-designed learning patterns. This rarely happens in the beginning reading classroom setting, and most of the low-literate adult students I tutored at both research sites required significant assistance throughout their learning tasks. None of the low-literate adult participants in this study sought out-of-class learning assignments, nor did they initiate projects on their own to advance their reading skills. Crystal Brown's picture book was provided to her by others, and another student at the Brandon County site, whose reading level was significantly higher than the participants, was the one who checked out biographies from the local library. Lessons where I brought in reading materials and illustrations from home were limited, and without continual guidance, low-literate adult students would be hampered in their efforts to develop self-designed learning experiences.

Although context-based learning theory (Hansman, 2001; Hase & Kenyon, 2001; Jarvis, 1983, 1987; Terry, 2006a, 2006b) and the theory on adults' motivation to learn (Wlodkowski, 1999) may be tangentially relevant to the findings of this study, the data indicate that low-literate adult students are not queried on their specific need for literacy, their extensive prior knowledge, or their desire for instruction on communication technology. Lesson plans are not designed to help them fill gaps in their existing knowledge base, or research an issue of personal interest. Since most of the participants do not work, they could not bring work-related problems or

objectives to the classroom learning environment. In the absence of knowing the requirements for employment, continuing education, or personal advancement, low-literate adults find it difficult to identify their previous skills and capabilities that could be retooled for today's tasks. Furthermore, when low-literate adults are not provided with curricular roadmaps, career planning, or relevant lessons, they are not motivated to continue learning in an organized setting, and instead demonstrate boredom, impatience, and reductions in the quality and quantity of lessons completed (Bell, Ziegler, & McCallum, 2004; Comings & Cuban, 2007; Demetrion, 2005; Harreveld, 2004; Hull, 2001; Lytle, 2001; Williams, 2004). Coupled with students who are asked to leave literacy programs for lack of progress like Karen James (Hallet, 2006; Johnson-Bailey, 2001; Rogers & Fuller, 2007), or those students who must choose between lucrative employment and learning to read, like Gregory Davis, there are a wide variety of reasons why students fail to reach system-mandated milestones of attendance, progress on standardized tests, or reading level advancement (Bell, Ziegler, & McCallum, 2004; Comings & Cuban, 2007; Demetrion, 2005; Dunbar-Odom, 2007; Harreveld, 2004; Hull, 2001; Lytle, 2001; Williams, 2004). When courses are designed and fail to take into account each student's learning context, students become disillusioned and fail to continue their studies.

Clearly the theories, concepts, and approaches from adult literacy have some relevance for mainstream populations, and are able to produce data required for

governmental and educational planning purposes (Demetrion, 2005; Lyon, 2001; Norris & Kennington, 1992; Shore, 2004). For low-literate adults, however, none of these theories, alone or together, could be used to analyze how these adults currently use communication technologies, or what their personal aspirations may be for learning them in either an organized or an informal environment. As Freire (2000, 2001) would remind us, the banking concept of education, which is frequently used in ABE classes, will not result in increased literacy for the lowest level readers. This diverse group of learners, multifaceted and functioning in their communities (Norris & Kennington, 1992) defies stringent description, and indicates that low-literate adults should be studied using an interdisciplinary approach.

### **Shortcomings of Communication Theories and Methods**

In this dissertation, I examined three communication theories, concepts, and approaches focused on the individual: the uses and gratifications theory, social presence theory, and the diffusion of innovations theory. I also reviewed three communication theories, concepts, and approaches focused on technology use in society: the concept of the digital divide, the new media theory concept, and the knowledge gap hypothesis. As mentioned previously in this study, there are aspects of each theory that can be applied to the unique population of low-literate adult learners featured in this research. However, there are numerous shortcomings of these theories, concepts, and approaches that limit their use in understanding the

behaviors identified in this dissertation. In this section, I will discuss these shortcomings.

The findings in this study clearly indicate that the uses and gratifications theory (Blumler, 1979; Blumler, Gurevitch, & Katz, 1985; Katz, Blumler, & Gurevitch, 1974a, 1974b; Katz, Hass & Gurevitch, 1973; LaRose & Eastin, 2004; Lin, 2002; Papacharissi & Rubin, 2000) was designed to interpret the behaviors of mainstream populations, and the methods used to collect and evaluate the data do not fit the population described in this study. There are five reasons why this is the case. First, the low-literate participants in this study had difficulty using, or did not use, traditional text-based resources such as newspapers, magazines, and books to meet their needs due to their low reading ability (Kozol, 1985). Second, newer multimedia technologies typically require the ability to read, write and type text, which puts these technologies in the same category as books and newspapers. Third, as mentioned earlier in this section, low-literate adults may not know about the capabilities of new and emerging communication technologies, and are not able to simply choose which one to use to meet their needs. Fourth, the term “audience” as applied in uses and gratifications studies was devised for sender-to-receiver, passive delivery of communication messages, but falls short of explaining 21<sup>st</sup> century communication behaviors and emerging interactive communication technology use by diverse groups of individuals (Chaffee & Metzger, 2001; Kalantzis & Cope, 2000a; McQuail, 1994; Williams, Phillips, & Lum, 1985). Fifth, since most recent research on uses

and gratifications is quantitative and retrospective, and is often conducted with individuals who already possess and use new communication technology, there remains a lack of qualitative research which allows low-literate adults to explain for themselves their needs and reasons for using or not using this technology, or what they expect to gain or lose by using it (McQuail, 1994). This study makes one contribution to this burgeoning body of knowledge on this invisible community, and suggests that adaptations of the uses and gratifications theory are necessary to obtain a fuller picture of communication technology use among underserved populations.

The social presence theory (Biocca, Harms & Burgoon, 2003; Fulk et al., 1990; Hwang, 2005; Lombard & Ditton, 1997; Lombard et al., 2000; Rice et al., 1992; Short et al, 1976; Tu, 2002) also does not explain how low-literate adults would be able to use new communication technology to achieve social presence. This study found that virtually none of the participants could read well enough to use text-based 21<sup>st</sup> century devices and applications like email, social networking, text messaging, citizen journalism, Twitter, or other applications (Biocca et al., 2003). Even streaming media, web cameras, and other devices would be beyond their comprehension, despite the designation of these media as having a high degree of social presence (warm, personal, sensitive) (Short et al., 1976). Most of these new and emerging technologies require online access facilitated by typing text into a computer. Although the illusion of nonmediation is necessary to produce social

presence (Lombard & Ditton, 1997; Lombard et al., 2000), the low-literate adult participants' lack of experience with communication technology caused them to focus more intently on learning how to use the technology, and less on the devices' abilities to produce social presence (Hamelink, 2000; van Dijk, 2005). Activities such as participating in a Skype job interview or conversation with a grandchild at a distant college would be virtually impossible for these individuals to accomplish by themselves. There is the potential that mobile technology could more easily facilitate social presence among this group, but research on this interactivity is only beginning to emerge, as evidenced by the Pew Internet and American Life Project studies (Rainie, 2010; Smith, 2010; Spooner & Rainie, 2010) on minority use of cell phone technology.

As with uses and gratification studies, and much of the government supported adult literacy research, most social presence studies also rely on quantitative data, often collected from college students (Biocca et al., 2003; Lombard & Ditton, 1997; Lombard et al., 2000) or, more frequently, in organizational settings (Fulk et al., 1990; Short et al., 1976), which does not reflect the voices or context of low-literate adult learners. Beyond this, Lombard and Ditton (1997) tell us that "research on presence is in its infancy" (p. 14), and Biocca et al. (2003) concur, finding that "existing theories and measures may not be developed adequately to fully support research on social presence in mediated environments" (p. 468). The findings in this study confirm that the quantitative methodology used in social presence research

would be unable to explain the behavior of low-literate adults, who may be more likely to rely on unmediated social interaction (van Dijk, 1999), or traditional media sources such as television and radio. This is not to say that social presence could not be achieved by low-literate adults' use of communication technology, but that current measures are not designed to identify such usage.

According to diffusion of innovation research (Atkin & Jeffres, 1998; Leung & Wei, 1999; Lin, 2001; Rogers, 2003), late majority and laggards become poorer because they cannot afford to participate in early adoption, and are in a race to catch up to others who have previously adopted an innovation (Lin, 2001). Diffusion research also suggests that late adopters and laggards are traditionalists who are resistant to technological innovation, who cling to old ways, and who are suspicious of early adopters (Rogers, 2003). Based on the results of this study, however, it is apparent that most of these characteristics are not present among low-literate adults, low income populations, and ethnic minorities, particularly those with children (Dupagne & Selwen, 2005). Instead, the use of communication technology by the participants' family and friends spurs their curiosity and desire to learn how to use these devices. Although they may not be able to afford the newest devices, these participants are not decidedly resistant to innovation, as we also see in the Pew Internet and American Life Project research (Rainie, 2010; Smith, 2010; Spooner & Rainie, 2010). Low-literate adult students, though not meeting the definition of laggards as described in diffusion literature, may better be described as a subset of

laggards, not resistant to technology, but unequipped to take advantage of technology's capabilities.

Scholars who support the diffusion of innovations theory also make the assumption that late majority and laggards have less exposure to mass media, even though literacy research indicates that low-literates tend to use traditional technologies such as television and radio, movies and telephones (Bernhardt & Cameron, 2003; Duff et al., 2005; Jibaja-Weiss & Volk, 2007; Ratzan & Parker, 2006; Rudd, 2007; Rudd et al., 2003; Smith & Gonzales, 2005; van Dijk, 2005). However, low-literate adults may not have access to new media because much of this technology requires the ability to read, write and type text (Mack, 2001). For instance, Crayton's Debra Kennedy was aware of her daughter's cell phone texting and picture-taking, but was unable to participate in this activity herself. Instead, Debra used phones mostly for voice calls, which only required entering long-remembered phone numbers on a landline or mobile phone.

Additionally, the pro-innovation bias cited by Rogers (2003) and others (Norris, 2001; van Dijk, 2005) as a shortcoming of diffusion research is a characteristic of Western and developed countries. Pro-innovation bias assumes that everyone wants and needs an innovation, and that social systems are set up to support and promote the innovation. The Facebook and Twitter solicitations and free mobile applications (apps) made available by local and national news programs are examples of this phenomenon. Low-literate adults, as demonstrated in this study,

are not among those targeted by innovators who seek out early adopters and others who crave the newest communication technologies. As perhaps the last group of individuals to be exposed to devices and applications many others have used for years, they are less susceptible to, or likely to be influenced by, pro-innovation messages in contemporary media.

Diffusion scholars suggest that without significant government assistance, the spread of the Internet and other communication technologies may “exacerbate existing social divisions” (Norris, 2001, p. 71), a position also supported by digital divide research. It is clear from the results of this study that low-literate adults may not be experiencing the benefits of federal government initiatives such as the E-rate, which purchases computer hardware for schools and public libraries, financial support for college students, or the computers and Internet connectivity available in the community college facilities where I tutored. Having computers and internet access at government-funded facilities does not automatically translate into educational opportunities for low-literate adult students, as demonstrated when participants were being taught in the same room with computers, but were not specifically offered lessons on the computers.

Finally, since the vast majority of diffusion of innovation studies are quantitative, as Rogers (2003) himself notes, the voices of low-literate adults are not heard, and their rationale for adopting or failing to adopt an innovation is confined to items that can be represented in a survey instrument. Diffusion of innovations

research can assist us in quantifying the spread of technical innovations, but does not give us sufficient insight into how innovations diffuse in a community such as that of low-literate adults.

While the current literature on the digital divide (Katz & Rice, 2002; Rice & Katz, 2003; Rice & Katz, 2008; van Dijk, 2005) certainly provides a framework for understanding the limited access to technology that is prevalent among those of lower socioeconomic status, digital divide research could actually misrepresent the presence or absence of 21<sup>st</sup> century technology in the households of low-literate adults. Many of these households would report the existence of computers, smart phones, and Internet access in their homes, but would fail to indicate the reading levels of those who use, or do not use, the devices. This explains why participants like Debra Kennedy, Brenda Nelson, and Wanda Bledsoe would affirm that they have access to these technologies (the “haves”), but that the devices are not readily available to them due to their low literacy levels (the “have-nots”).

Such is the dilemma when utilizing quantitative data collection methodology, predominantly surveys, which, until very recently, were frequently administered by telephone random digit dialing to those landline phone customers willing to participate (Rice & Katz, 2008). Quantitative studies do not allow low-literate individuals to describe in detail their reasons for using, or not using, communication technology, and do not provide enough context for understanding the issues faced by these adults, who are disproportionately represented on the have-not side of the

digital divide (van Dijk, 2005). Moreover, as in previous theories, concepts, and approaches, the digital divide concept equates use of the Internet with the ability to read text and type (Mossberger et al., 2003; van Dijk, 2005), excluding much of the population examined in this dissertation research. Furthermore, “the smaller a device with computer functionality becomes, the more problems it poses (advanced cellular phones, palmtops, and other handheld equipment)” for the low-literate and disabled (van Dijk, 2005, p. 98), which is a continuing trend among cell phone manufacturers, but may be one reason why the participants primarily used voice features on their phones. This study reveals that low-literate adult students lack familiarity with text and with the icon-based displays on these newer devices.

Regarding new media theory research (Castells, 2000; Cover, 2004; Hamelink, 2000; Jenkins, 2007, 2008; Keren, 2006; Landow, 2006; Lévy, 2001; Manovich, 2006; Poster, 1995; van Dijk, 1999), scholars make the assumption that all participants in the 21<sup>st</sup> century communication society already possess significant capabilities to read, write, and compute, and need only to agree to join cyberspace to be able to take advantage of the benefits of new communication technology (Landow, 2006). However, the results described in this dissertation confirm that this is not the case for the low-literate adults or the elderly participants in this study. Clearly, the participants struggled to obtain the reading, writing, or computational skills to move from the lowest levels of ABE instruction to GED-level, college preparatory classes. They generally lacked exposure to previous generations of

digital media and, though eager to join cyberspace, they would experience significant hurdles toward achieving that goal.

As with the previous theories, concepts, and approaches, it also appears that the knowledge gap hypothesis (Eveland & Scheufele, 2000; Kwak, 1999; Tichenor, Donohue, & Olien, 1970) would be difficult to adapt to the population of low-literate adult students who participated in this study. They are not particularly involved in local civic affairs, and during this study they did not discuss using media to learn more about topics important to their community or to their continuing education. Another divergence from the knowledge gap hypothesis may be because “the knowledge gap is only about the differential diffusion and development of knowledge or information” (van Dijk, 2005, p. 126), whereas the larger issue with the low-literate adults profiled in this study is their lack of skills necessary to access and use the hardware, connectivity, and data available via new communication technologies. Tichenor et al. (1970) and other knowledge gap researchers suggest that alternative media delivery systems may be needed for minorities and those with lower SES to eliminate knowledge disparities in science, politics, and public affairs (Evelund & Scheufele, 2000; Katz & Rice, 2002), which supports the idea of redesigning interfaces, developing different support systems, and training ABE educators on how to use these resources. We can see from the results of this study that today’s workbook-based, text-based, nonmediated instruction is not meeting the expectations and desires of low-literate adults, preventing them from responding to

political initiatives or changes in governance that threaten their rights as citizens, all while communication with lawmakers, regulators, and advocates is increasingly moving to computer-based systems. We also know that most knowledge gap studies are quantitative, as are many other communication technology studies, and are often conducted using telephone surveys, thus introducing the limitations discussed previously.

It is clear from the findings of this dissertation research that our existing base of theories, concepts and applications in communication technology is not sufficient to explain and predict the behaviors observed in this study, and that we must expand our theoretical choices to better study communities previously excluded from our research agendas.

### **Making New Methodological Choices**

In this dissertation, I advocate the use of grounded theory methodological principles and tools when multiple disciplines must be combined to study a phenomenon such as low-literate adult students' use of communication technology. Cazden (2000), Selfe and Hawisher (2004), Street (1995), The New London Group (1996) and other scholars have concluded that there is no longer one definition of literacy, but instead we need to embrace, research, and teach multiliteracies. This may best be done in an interdisciplinary framework. I took this into account when making the methodological choices for this study. For instance, I made a conscious decision to

depart from the traditional grounded theory procedures which direct scholars to conduct the literature review after data analysis (Glaser, 1992; Glaser & Strauss, 1967, 1994). Due to dissertation preparation protocol, it was necessary for me to conduct a thorough literature review of adult literacy and communication technology research before I received approval to begin data collection and analysis. However, after reviewing much of the existing literature and theories before going to the field, it became clear that there was none that effectively bridged the two disciplines (Bryant & Charmaz, 2007a, 2007b; Charmaz, 2001, 2005; Denzin & Lincoln, 2005; Mills, Bonner & Francis, 2006). This realization allowed me to collect data without applying a preconceived, theoretical bias.

Now that data collection and analysis has concluded, I understand the strength of using grounded theory principles and tools that allow the researcher to not feel restricted to applying existing theoretical frameworks to the data (Charmaz, 2001, 2005; Holton, 2007; Morse, 2007). First of all, I found that existing theories did not fit what I was seeing in the field. Second, there were many diverging behaviors occurring in the field: multiple learning styles, varying motivations for academic vs. personal learning, and differing perceptions of the need for technology of each participant.

Ultimately, my world view, research interests, background, and use of qualitative research procedures did influence my development of the categories in this study (Charmaz, 2001). I was less influenced by other literature encountered

during field research, which I worked hard to put aside while performing data collection and analysis. For instance, I made a conscious decision not to read Shirley Brice Heath's *Ways With Words* (1983), a seminal work on literacy in the Piedmont Carolinas, in its entirety. Heath's work is widely referenced in the literacy literature, and virtually defines the population I tried to reach with my study. Though the book is over 25 years old, reading this work before I entered the field would surely have planted several preconceived ideas and expectations on what I would find in my study, which was also situated in the southeastern U.S. However, after my field research was complete, in true grounded theory fashion, I began to read the book. I found it very strikingly similar to my findings, particularly in Crayton County, with its proliferation of shuttered textile mills and manufacturing facilities, its homes, and the style of language of the students I tutored. In fact, Sue Jackson spent more than 30 years working in the mills before she was required to care for her ailing mother. It is my hope that this study, in some way, pays homage to Heath's work, and points to the need to continue it further into the 21<sup>st</sup> century digital world.

Other studies, including those completed by Mahiri (2004), Merrifield, Bingham, Hemphill, and Bennett deMarrais (1997), Purcell-Gates (1995), Richardson (2003), Rose (2005), Smith and Wilhelm (2002), and numerous other adult literacy scholars were also brought to my attention after I ended my field research, and their work can now be considered in future studies on this phenomenon. Even though these studies address other populations, many of the

issues encountered by low-literate adults are also experienced by children, adolescents, speakers of other languages, the elderly, and the incarcerated.

This research was an excellent opportunity to practice community engaged scholarship (Boyer, 1996; Bringle, Clayton, and Price, 2009; Jameson, Clayton, & Jaeger, 2011; Saltmarsh, Hartley, and Clayton, 2009) and to complete a scholarly research project with a socially important goal (Craig, 1999). Tutoring became an indispensable mechanism to not only study low-literate adult learners, but also to serve them and their communities. These learners often sought my assistance with personal issues, learning dilemmas, and career aspirations. For me, the experience of learning about this community, while also helping to improve its condition, was life-changing, and models what Kozol (1985) and Freire (2000, 2001) tell us we must do as educators of all citizens.

Finally, the results of this study confirm that neither adult literacy theory nor communication theory alone would be able to explain the phenomenon of low-literate adults' use of new and emerging communication technology. It is likely that a new theory will emerge that bridges both disciplines. I argue that this approach may be one of the best ways to address the questions raised in this research.

## Chapter 6

### Recommendations for Future Initiatives

There are a number of recommendations that could be put into place to begin to ameliorate the lack of communication technology use by low-literate adult students.

The following diagram is a metaphorical way to look at how we can bridge the disciplines to better understand and meet the needs of low-literate adults by developing contextualized, relevant learning tools that equip these students for today and tomorrow. I advocate teaching these adults to read and write while simultaneously teaching them how to use communication technology. The diagram below suggests activities that blend pedagogical approaches from both adult learning theory and communication technology theory, and represents a way to merge the disparate theoretical traditions with practical applications.



Figure 6.1. Activities shown in this diagram represent ways to blend adult literacy and communication technology praxis

I argue that the only way to bridge the disciplines of adult literacy and communication technology to address needs in this unique community of learners is to construct scaffolding by blending adult basic education (ABE) classes with hands-on communication technology practice. In order to support the development of multiliterate graduates prepared for careers, postsecondary studies, reciprocal teaching and learning, we need to introduce a 21st century, multiliteracies-based curriculum which utilizes communication technology as part of the pedagogy. The projects shown on this diagram are either student-initiated, or are programmatic in nature.

Activities students could accomplish in this multiliteracies-oriented curriculum could be initiated in class and continued as homework or extended lab sessions.

They include:

- digitizing personal artifacts with audio commentary (portions of favorite songs, pictures, graphics);
- using Dragon® writing software for dictating coursework;
- reading audio books with accompanying printed versions;
- Creating a curriculum making extensive use of NatGeo, History Channel, PBS, Science, Smithsonian and other networks, co-designed by ABE and communication instructors;
- building a personal catalog of musical artists or celebrities to find on YouTube, Wikipedia, or Google search;

- creating a Skype community to unite family members, share genealogy, or establish a faith-based study group;
- finding biographies of historical/famous people of interest to students;
- converting a family recipe to electronic document; expanding later to a Facebook page, blog, or website for sharing family recipes.

Programmatic initiatives can also assist in retooling the ABE curriculum to incorporate multiliteracies and support both in-class and out-of-class learning. Some suggestions include:

- creating financial incentives for low-literate adult students to learn new technology;
- obtaining public and private sector grants for tablet computers and low-cost wireless access;
- developing a “touch-and-feel” demonstration seminar geared toward low-literate adults to provide an overview of 21st century communication technology.

The results of this dissertation research reveal that low-literate adults who are enrolled in adult basic education (ABE) classes underutilize new communication technologies because they do not have the reading skills necessary to understand, use, and achieve fluency with the technology. They also have few opportunities to learn them, in part because others who know how to use the technology have not

spent the time necessary to instruct them in both reading and technology use. This group of adult learners relies on traditional media, specifically radio and television, for information and entertainment, but rarely for formal education. They learn of 21<sup>st</sup> century communication technologies from these media or from friends and relatives. Perhaps it is the same media that can lead the way to helping low-literate adults find outlets to teach them how to use new communication devices and applications. Just as job fairs attract the unemployed, technology fairs, showcases, and seminars may be able to do the same for significant numbers of low-literate adults. Churches may be the most likely locations to house these activities, as these locations reach many potential adult literacy students. Churches may also supplement and enhance the work of community college ABE programs and local literacy councils.

It also appears that the print materials used in ABE classes have a dearth of information on these technologies, and low-literate students are not regularly exposed to technology in their classes. Updates to these resources that include examples and scenarios involving the use of 21<sup>st</sup> century technologies, devices, and applications are sorely needed, so that students will learn about the technology while also learning to read and write.

Better still, there is an acute need to develop applications, similar to the writing tools on iPads designed for autistic children, which can replace much of the outdated materials, workbooks, and resources currently being used. One suggestion to accomplish this objective might include recruiting and training undergraduate adult

literacy tutors who will use their own tablet computers and personal communication devices to supplement the instruction of low-literate adults. Researchers could then utilize the knowledge gained through the tutor deployment effort to develop new communication technology applications for adult literacy instruction.

Low-literate adult students use voice telephone services, both cell and landline, extensively to stay connected with family and acquaintances. Despite the proliferation of other 21<sup>st</sup> century communication technologies, such as email, text messaging, Skype, and other social media, low-literate adults simply cannot easily participate in these communication networks. Furthermore, when candidates for office, school system administrators, or news media urge citizens to use these technologies to communicate with them, as has occurred in Brandon County, these adults and millions of others like them are left without a voice. Alternatives to Facebook and Twitter feedback continue to be needed so that those who rely on traditional communication tools may join with others to respond to current events and initiatives. Moreover, the applications mentioned above can help to educate low-literate adults on how to use these technologies, particularly in support of medical literacy and remote medicine, services that would particularly benefit rural residents like those in Crayton County.

Since many low-literate adults rely on television and video programs, adult literacy educators may also need to make greater use of video resources available through the Public Broadcasting Service (PBS) Adult Learning Service, programs

produced by The Annenberg/CPB Project and commercial networks such as the Discovery Channel, Science, History, and National Geographic, and free learning services offered by Goodwill Industries and other service providers. This could extend to utilizing resources and devices on loan from state university libraries, corporations, and other entities to supplement classroom technology.

The low-literate adult students in this study were unaware of the potential of distance education to help them meet their educational goals, and also did not know that their current institution could help them learn how to use computers, the Internet, and other technologies. Accessing these services could possibly relieve the burden on family and friends to provide intensive instruction. In addition, only two participants mentioned that they play (or observe their family playing) video games. If introduced to learning tools on computers that use video game production techniques, there is the possibility that some of these adults would not be familiar enough with the genre to succeed in using them. More research is needed to determine which students would benefit most from this innovation.

This study reveals that these low-literate adult participants find the world of 21<sup>st</sup> century communication technology completely foreign. They do not understand the language, navigation, or attraction to the new technology, and can sit mystified in the same room while their technologically-equipped grandchildren, siblings and friends text and tweet their way through a family evening. The presence of a computer or keyboard-equipped cell phone in the house still does not provide these

adults with the skills they need to use and master the technology. It is possible, however, that incentives can be put in place so that family members and acquaintances can be enlisted to help bring their low-literate relatives into the 21<sup>st</sup> century world of communication. For instance, elementary and secondary school students could be issued credit for helping their relatives to learn new technology, or college credit could be provided to students who volunteer to tutor at community college ABE sites or for local adult literacy councils.

The frustrations experienced by the participants who watch as others use communication technology lead them to conclude that they are old-fashioned, left behind, and ignored by the speeding pace of communication technology development and use. Several participants expressed despair that they will ever get any help to learn how to use this technology, which they believe may shut them out of better jobs, higher education, and other life improvements. More than anything, the research shows that low-literate adults not only want to learn how to read and write, but they also want to learn how to use these devices and applications. They know how important 21<sup>st</sup> century communication technology is to our society, and would welcome anyone who would take the time to teach them.

### **Implications for Future Research**

In light of the results of this study, there is a clear need for further research and praxis. First, in order to understand the full effects of low literacy on employment

prospects and improved living conditions, this study should be expanded to other counties in the state, and to other regions of the United States where low literacy is prevalent among adult residents. The original plan for the present research study included four (4) additional counties, but this was deemed overly time-intensive for a dissertation study. However, it would be valuable to follow up with these research participants outside the classroom to study their behaviors at home and in other settings as a longitudinal research effort.

Second, researchers can explore the role of African American tutors in helping low-literate adults learn how to use new communication technologies while conducting autoethnographic studies. In this case, a great deal can be learned from the shared backgrounds and ethnicities of a majority of adult learners and tutors.

Third, since we know that many low-literate adults do not enroll in organized classes, researchers could perform snowball sampling of others who may be known to the initial study participants. This research may indicate how widespread the issue of low-literacy may be in the counties and regions of the state where this original study was conducted. The methodology used in this study could be modified and adapted to these new field sites.

Fourth, as an extension of the work of tutors, researchers can introduce low-literate students to features and functions of 21<sup>st</sup> century communication technologies and compile a list of features that these learners may want to use. Researchers, instructors, tutors, and students themselves may begin to develop

applications and easy-to-use instructions as part of a revamped beginning reading curriculum in adult basic education programs. This effort would require that ABE instructors receive training in the use of these technologies. For instance, a task force of representatives from these groups could experiment with iPads and create applications for new ways to teach reading, writing, geography, and other subjects that will be tested on TABE and GED tests.

Finally, literacy resources, applications, and programs currently online can be assembled and packaged for introduction as out-of-class assignments for low-literate adults. Their efficacy can be studied to determine which resources work best for this unique group of learners. Facilities and organizations, including churches, college campuses, hospitals, libraries, government agencies and others could be enlisted to provide these online resources at times that are most convenient for this group of learners.

The recommendations in this study were intentionally crafted as low-cost to no-cost options. Capital expenditures for adult education are extremely limited, and hardware-intensive build-outs are not economically feasible or desired. In this climate of increased mobility and less expensive computing technology, volunteers, donations, and community engagement are extremely valued as much-needed support to the efforts currently underway.

At the theoretical level, the results of this study strongly suggest that new theoretical approaches are needed to further identify and understand low-literate

adults' use of communication technologies. Resulting theories may contain elements of prior theories and approaches, which will represent a merging of relevant communication technology theory and adult learning theory. Analysis of this emerging data lends itself to using principles and tools of grounded theory (Glaser & Strauss, 1967, 1994), which supports the generation of new theory in the absence of prior research, or in interdisciplinary research efforts. Other researchers may elect to study and further refine these results, through use of qualitative grounded theory, to initiate a potentially new theoretical approach.

Scholars in both adult literacy and communication, working together, could conduct activities in an experimental environment to introduce new technologies to low-literate adults and monitor their uses and challenges. We may find that none of the approaches suggested here will help explain current technology use, or forecast future uses among underserved populations. It is possible that a grounded theory study (Glaser & Strauss, 1967, 1994) may be more appropriate to build a theory that forms a bridge between two disciplines, by first learning about what communication technologies low-literate adults use now, and what technologies they may aspire to learn and use in the future.

The results of this study extend the body of knowledge in both fields, and lead to new understandings of how low-literate persons use communication technologies. Future interdisciplinary studies should apply elements of prior theories and concepts from both communication technology and adult learning theories. This merger will

help us to understand the challenges these adults face in negotiating new technology, and to document their self-identified aspirations for learning how to use these devices and applications.

The application of grounded theory principles and tools assist in developing “theory that emerges from the researcher’s observations and interviews out in the real world rather than in the laboratory or the academy” (Patton, 2002, p. 11), which is particularly applicable to studies of the beliefs and goals of these low-literate adults as they engage in, and reflect on their communication technology use. Patton (2002) tells us that the principles and tools provided in grounded theory supports the development of “theories about what is happening in a setting are grounded in and emerge from direct field experience rather than being imposed a priori as is the case in formal hypothesis and theory testing” (p. 56). Conducting a study in this manner is most appropriate when separate theories and concepts from multiple disciplines must be considered, and when conceptual categories and properties contribute to a “running theoretical discussion” (Glaser & Strauss, 1967, p. 31). Questions such as those posed by this dissertation do not have long-standing theoretical traditions from which to interpret the behaviors of this understudied population, and therefore new theoretical discussions must be initiated.

The ability to present research results that are accessible to non-academic and non-governmental audiences is another major appeal for using this approach (Green, Creswell, Shope, & Plano Clark, 2007), and is ideal when existing theories

may not be applicable to more than one discipline (Glaser, 1992; Charmaz, 2001; Denzin & Lincoln, 2005; Lincoln & Guba, 1985; Seaman, 2008), as we find when examining the results of this study.

### **Limitations of the Research**

In terms of the number of participants in this study, there were a limited number of enrolled students who met the criteria for participation. Although classes contained between 8-20 students, only 2 or 3 students in each class met the criteria for the study of 0-2 grade reading level in any semester. Second, I was only exposed to the behavior of participants in and around their classrooms. I did not follow them home, or to other off-site locations, to observe their behavior and activities, as would be expected in a full-fledged ethnographic study. Third, as in any interview scenario, I had to rely on the participants' recollections and thoughts on communication technology use. And fourth, as an urban dweller, I did not have recent experience living in a rural area such as Crayton County, which meant that I would not be familiar with technology and distance issues that the Crayton participants encountered every day.

This study is not generalizable to other populations, and adaptations of the methodologies used here would be required to expand this effort beyond the adult basic education community.

## **Conclusion**

The importance of learning how low-literate adult students use the newest communication technologies allows us to look at technology use by a population that is typically not analyzed when it comes to use of these technologies. Prior research efforts assume technology use and studies are conducted to discover the effects of that use. Many of these studies begin by making the assumption that the users are already in possession of the technologies and know how to use them. The research described in this dissertation is important because it examines a population that may not possess the entry skills of literacy, the ability to read and write. We presume that these skills are necessary in order to use communication devices such as tablet computers, smart phones, social media, and the Internet. It is vital to continue to study whether or not this population is successfully using these types of technologies to communicate, which would expand our understanding of how technologies proliferate, and extend the body of knowledge in the fields of both adult literacy and communication.

This study makes a significant contribution to the field of Communication as it illuminates the limited use of 21<sup>st</sup> century communication technology among low-literate adults in a society that focuses on celebrity Twitter feeds and instantaneous news cycles. As much of the current mass communication research continues to investigate program content, audience attributes, and quantification of technology use, this study delves deeply into the lives of marginal technology users, whose choices of communication devices are significantly limited.

This research effort also contributes to the field of adult literacy by identifying gaps in students' exposure to technology, and suggests alternative structural interventions to help introduce technology use for low-literate adults. We now know that adult literacy presents one of the biggest hurdles to the adoption of 21<sup>st</sup> century communication technology, and that it is only by understanding low-literate adults' needs and aspirations that scholars can begin to develop means to both increase literacy and introduce new and emerging technologies and applications. Such an approach also requires a sincere commitment to community engagement, and necessitates the use of data grounded in the field to supplement existing theory with new theoretical frameworks aimed at addressing these emerging issues.

It is my belief that the knowledge gained as a result of conducting this research effort will help adult literacy and communication instructors, administrators, program planners, and researchers, understand how new communication technologies are being used by low-literate students, while assisting scholars in learning how we can help these students access these 21<sup>st</sup> century tools.

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## APPENDICES

## Appendix A

### Interview Guide

#### Demographic Questions

1. Race (self identify)
2. Age (ranges 18-28, 29-38, 39-48, 49-58, 59 and older)
3. Gender (self identify)
4. First/primary language
5. Literate in other language(s) Y/N (if Y, which language)
6. Birthplace
7. Last grade level in school (childhood) before enrolling in adult education class
8. Marital status
9. Are you a parent? (If yes, age and gender of child(ren))
10. Employed? (Y/N)
11. Income (self identify as Low, Middle or Upper)

#### Technology Questions

##### Category 1: Technologies and devices used

1. Describe how familiar you are with some of the following communication technologies. (I selected and described 2-3 devices below as examples, and will check off items using a table similar to the one shown below.)

Basic cell phone		Computer	
Text messaging		Internet/WWW/email	
Cell phone camera		Streaming media	
Caller ID		Online job applications	
GPS		Online government forms	
Satellite radio		Online shopping	
Mobile internet access		Facebook, MySpace	
Instant messaging		Twitter	
Digital camera		I-pod or mp3 player	
Digital video recorder		Video games	

2. Which 2 or 3 of these do you use most frequently?
3. Could you give me an example of how you might use these in a typical day?
4. How did you learn to use these technologies?
5. What do you imagine would be the hardest thing about learning how to use communication technologies?
6. Where do you use any of these?
7. Please describe how you use older technologies like landline (home) phones, broadcast radio, or television.
8. How do you decide what is the best or most appropriate technology to use in various situations?

### **Category 2: Use of communication technology with significant others**

9. How do you use any of these devices to communicate with your family and friends?
10. If you have to do things on the computer, how do you go about getting them done?
11. What situations would cause you to ask friends or family members to do things on the computer for you?
12. As best you can, please describe for me the kinds of activities other members of your family or your friends do with these technologies.
13. Describe some enjoyable things you do with these technologies, things that are fun for you, or bring you some pleasure.

### **Category 3: Use of technology to communicate for work**

14. If you are currently working, (or worked in the recent past), how do you use any of these technologies in your work?
15. How many jobs have you applied for that required you to submit the job application online? How do you feel about that process?

### **Category 4: Desire or intent to use communication technology**

16. What technologies do you wish you knew how to use? Which one(s) would you most like to learn how to use?
17. Sometimes, shows like American Idol or sports events like the NCAA Basketball Tournament ask viewers to text message their choices for favorites. You may watch CNN or the local news on TV and see hosts inviting you to reach them on

Facebook or Twitter, or they'll suggest that you visit their website for more information. What is your reaction when you hear these kinds of invitations?

## Appendix B

### Request for Brandon Technical Community College Site Access for Dissertation Research Project

To Whom It May Concern:

I am a fourth-year Ph.D. candidate in the Communication program at State University, and I will be commencing my dissertation research in a few weeks. My service as a volunteer adult literacy reading tutor has helped to determine what I would like to study.

My research will focus on how low-literate people enrolled in adult literacy programs use new communication technologies and applications. These technologies include cell phones, text messaging, I-pods or mp3 players, Internet, streaming media, and online job applications. I also want to learn whether they use any of these technologies to communicate with family and friends, and if they ever ask friends or family members to do things on the computer for them.

I have selected Brandon Technical Community College's public services headquarters site as one of the two sites where I would like to conduct this research, which will consist of oral interviews and observations. I will continue to serve as a volunteer reading tutor for the 2009 Fall Semester, during which time I would like to ask students if they would volunteer to participate in the study. My expectation is that I will be conducting interviews at Brandon Tech's public services headquarters site between August 31-October 16, 2009. I will, of course, work within any restrictions that are required.

Each participant will be read and asked to sign an informed consent form. I will conduct oral interviews before and after literacy class sessions, so that there will be no interruptions within the instructional day. Interviews will be recorded using a digital audio recorder, and each interview is expected to last one (1) hour. I expect to conduct one interview each before and after the literacy class session. I would like to conduct the interviews onsite for the convenience of the participants, who will not have to travel to another site.

Once my study is complete, I will provide you with a summary of my findings that may assist you in your program planning. Please contact me at [fdhamilt@ncsu.edu](mailto:fdhamilt@ncsu.edu) or at 240-277-7254 to confirm that I may conduct this study at Brandon Tech, and to discuss any questions you may have. Thank you so much for your assistance in helping me to complete my dissertation research.

Fredessa Hamilton

## Appendix C

### Request for Crayton Community College Site Access for Dissertation Research Project

To Whom It May Concern:

I am a fourth-year Ph.D. candidate in the Communication program at State University, and I will be commencing my dissertation research in a few weeks. My service as a volunteer adult literacy reading tutor has helped to determine what I would like to study.

My research will focus on how low-literate people enrolled in adult literacy programs use new communication technologies and applications. These technologies include cell phones, text messaging, I-pods or mp3 players, Internet, streaming media, and online job applications. I also want to learn whether they use any of these technologies to communicate with family and friends, and if they ever ask friends or family members to do things on the computer for them.

I have selected Crayton Community College as one of the two sites where I would like to conduct this research, which will consist of oral interviews and observations. I would like to serve as a volunteer reading tutor for the 2009 Fall Semester, during which time I would like to ask students if they would volunteer to participate in the study. My expectation is that I will be conducting interviews at CCC between October 19-December 11, 2009. I will, of course, work within any restrictions that are required.

Each participant will be read and asked to sign an informed consent form. I will conduct oral interviews before and after literacy class sessions, so that there will be no interruptions within the instructional day. Interviews will be recorded using a digital audio recorder, and each interview is expected to last one (1) hour. I expect to conduct one interview each before and after the literacy class session. I would like to conduct the interviews onsite for the convenience of the participants, who will not have to travel to another site.

Once my study is complete, I will provide you with a summary of my findings that may assist you in your program planning. Please contact me at [fdhamilt@ncsu.edu](mailto:fdhamilt@ncsu.edu) or at 240-277-7254 to confirm that I may conduct this study at CCC, and to discuss any questions you may have. Thank you so much for your assistance in helping me to complete my dissertation research.

Fredessa Hamilton

## Appendix D

### Script to Solicit Study Participants

(These are the comments that I will make to the entire class when I recruit individuals to volunteer for the study. I will repeat portions of this as necessary for each individual who volunteers before reading the consent form to them.)

Hi everybody. You've seen me for a few weeks now as I've been assisting (teacher's name) to help you with your reading. I may have mentioned before that I'm a Ph.D. student at NC State University, and am working on my doctoral degree. It's time for me to begin my research study, which will be on how adult literacy students use the newest communication technologies, like cell phones, I-pods, text messaging and other devices. (Teacher's name) said it would be OK to speak to you about this. I would really like to ask each of you if you'd be willing to volunteer to be part of my study.

There are a few things I'd like for you to know before you consider participating. First, I will make sure that nothing I do interferes with your class time, which I know is very important to you, your teacher, and to me as your volunteer tutor. Second, what I'm asking you to do should not take up a large amount of your time.

Here's what I'll be doing. I have a consent form that I'll read to you and ask you to sign. I have a copy that I'll give you that will have a phone number listed in case you need to contact me. After you sign the form, while I'm tutoring, I'll be observing your use of communication technology. This means, if we use any in class, I'll be observing this. I won't be taking any notes or recording anything in class, but what I observe will help with my study.

The main part of my study is what I'd really like for you to be involved in. I would like to interview volunteers, and ask you about your use of communication technology. This will be very much like a conversation, and should last no more than an hour. If you're willing to participate, we would do this outside of class, either before or after the class period, here at the facility.

I'll ask a few general questions. Then, I'll ask you about what devices you use, how you use them, and how you learned to use them. I'll be using an audio recorder while we're talking, because I can't write that fast.

You and your answers will be anonymous. I will never identify you by name, and I don't want to pry into private conversations or information that you'd rather not share. Near the end of my research, I may ask you to clarify a few points that will help me make sure I'm on the right track.

To compensate for your time if you agree to participate in the study all the way to the end of the interview, you will receive your choice of either a \$10.00 gasoline card or a \$10.00 grocery card. Now, does anyone have any questions?

## Appendix E

### State University INFORMED CONSENT FORM for RESEARCH

Title of Study

“I Wanna Text Too!” Examining how low-literate adults use new communication technologies and applications

Principal Investigator

Fredessa D. Hamilton

Faculty Sponsor (if applicable)

Dr. James Kiwanuka-Tondo

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**What are some general things you should know about research studies?**

You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty. The purpose of research studies is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above.

**What is the purpose of this study?**

This study seeks to learn how low-literate adult learners who participate in organized adult literacy programs may be using communication technologies, devices and applications. These would include things like cell phones, text messaging, I-pods or mp3 players, Internet, streaming media, and online job applications. This research will help us learn if you are using them as part of your interaction with family, friends or work. The research is necessary to discover how much you have been exposed to and use these technologies.

**What will happen if you take part in the study?**

If you agree to participate in this study, you will be participating in a two-phase study. The first phase is an observation of your class that will occur during my volunteer tutoring sessions throughout the semester. This will help me learn how communication technology may be used in class. Since I will be tutoring you during your class, I will not be actively taking notes or doing any other activity that will disrupt your learning. The second phase is an interview phase. I will be interviewing you at your literacy class location just before or after class. I will read all of the interview questions to you. I will be recording your responses using a digital audio recorder. Before the interview begins, I will ask you a few brief survey questions. I will let you know when the actual interview begins. The entire process should take no longer than one (1) hour, and will not interfere with your literacy class session. Near the end of my study, I may want to come back to ask you a few questions that will clarify what I have learned.

Your participation in this study is completely separate from your class, and is not required as part of your literacy program. Your decision to participate or not participate will not impact your standing in the class.

**Risks**

There are no risks involved in participating in this research study.

**Benefits**

Knowledge gained as a result of this research will help adult literacy educators understand how new communication technology is being used by their students, and will assist us in learning how we can help students learn how to use these tools.

**Confidentiality**

The information in the study records will be kept strictly confidential. Data will be stored securely in locked containers off premises at the researcher’s home office until one year after the study is completed. At the end of that year, the data will be destroyed. No reference will be made in oral or written reports which could link you to the study. You will NOT be asked to write your name on any study materials so that no one can match your identity to the answers that you provide.

**Compensation**

For participating in this study you will receive your choice of a \$10.00 gasoline card or gift card for food purchase. If you withdraw from the study prior to its completion, you will not receive a card.

What if you have questions about this study?

If you have questions at any time about the study or the procedures, you may contact the researcher, Fredessa Hamilton, at Winston Hall, Room 201, NC State University, [fdhamilt@ncsu.edu](mailto:fdhamilt@ncsu.edu) or 919-515-9736.

**What if you have questions about your rights as a research participant?**

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514), or Joe Rabiega, IRB Coordinator, Box 7514, NCSU Campus (919/515-7515).

**Consent To Participate**

“I have been read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty or loss of benefits to which I am otherwise entitled.”

**Subject's signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**Investigator's signature** \_\_\_\_\_ **Date** \_\_\_\_\_

## Appendix F

### Research Questions and Categories Used in Data Analysis

<b>Research Questions</b>	<b>Categories</b>
RQ1: How does technology function in the everyday lives of low-literate adults enrolled in adult literacy programs?	<ol style="list-style-type: none"> <li>1. Familial bonding</li> <li>2. Escape</li> <li>3. Inspiration</li> <li>4. Social connection</li> <li>5. Work-related tasks</li> </ol>
RQ2: What challenges do low-literate adult students face when learning to use communication technologies?	<ol style="list-style-type: none"> <li>1. Fluency</li> <li>2. Fear of complexity/unknown</li> <li>3. Access</li> <li>4. Negative stereotypes</li> </ol>
RQ3: What do low-literate adult students hope to gain from their imagined future uses of technology?	<ol style="list-style-type: none"> <li>1. Expand connection capabilities</li> <li>2. Catch up with society</li> <li>3. Become independent</li> </ol>

Appendix G  
(McNemara, 2003)

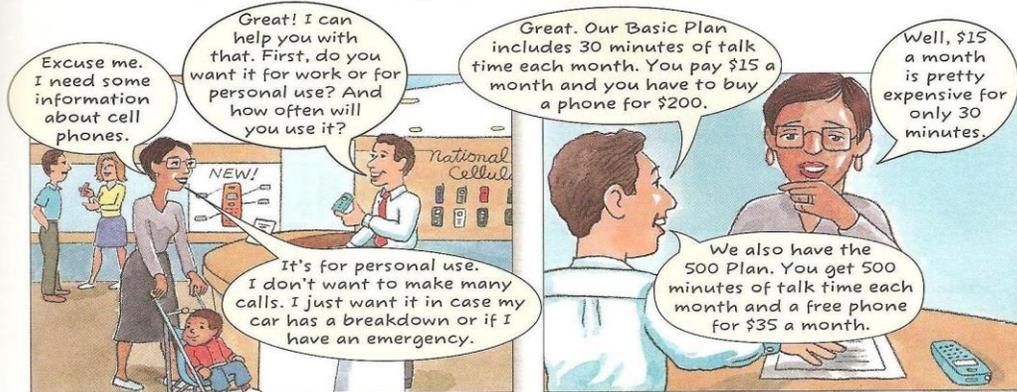
unit 3 Saving Money



Scene 1: Conversation

Read the scene with a partner. Listen to the conversation and practice it together.

Linda Gonzalez is talking to a clerk at a cell phone store.



Ask your partner the questions below. Then share your answers with another pair or the class.

- |             |  |
|-------------|--|
| Facts       | What is Linda doing? What are the differences between the two plans?         |
| Feelings    | How does she feel about the two plans?                                       |
| And You?    | How do you make decisions about things you buy?                              |
| Comparisons | Is shopping in the United States different than in your native country? How? |

Your Turn

Now write or tell the story in your own words.

## Vocabulary

Look at the pictures and read the words below with a partner. Talk about what the words mean. Use a dictionary if you need it.



breakdown



cell phone



local



long-distance



personal use



guarantee = a promise from a company that the product will work

in case = if  
to include = to have, to come with

### Your Words

\_\_\_\_\_

\_\_\_\_\_

**Exercise 1** The National Cellular clerk told Linda all about cell phones. Complete the sentences. Write the correct word on the line. Use the words above to help you.

1. My car had a \_\_\_\_\_ on the road, and I was late for work.
2. This phone has a two-year \_\_\_\_\_. If it breaks, we will give you a new phone.
3. We \_\_\_\_\_ free long distance with all of our phones.
4. You don't need to dial the area code for a \_\_\_\_\_ call.
5. I made a \_\_\_\_\_ call from Texas to Mexico.
6. Please tell me your cell phone number \_\_\_\_\_ we need to call you.



## Listening

**Before You Listen** Read what Linda and her friend Maria found out about cell phones. What do you think Linda will buy, the basic phone or the Star 2000?

**Exercise 2** Listen to the conversation. Help Linda decide which phone to buy. Write **yes** or **no** on the line.

- \_\_\_\_\_ 1. The basic phone costs \$199.
- \_\_\_\_\_ 2. The Star 2000 phone comes in only bright red.
- \_\_\_\_\_ 3. Linda and Maria like black phones.
- \_\_\_\_\_ 4. The Star 2000 phone has a one-year guarantee.
- \_\_\_\_\_ 5. Linda thinks that Roberto will like the Star 2000 phone.

**After You Listen** With a partner, compare your answers. Did you choose the correct cell phone?



### Your Turn

With a partner, talk about the basic and Star 2000 cell phone plans in Exercise 2. Which one is better for each person? Which phone is smaller?

## SPOTLIGHT on Review Simple Present

I **use** my cell phone every day.

You often **make** calls on your cell phone.

He always **calls** his wife on his cell phone.

She **keeps** her cell phone in her purse.

We **sell** new cell phones.

They **use** their cellular phones every day.

Use the simple present tense to talk about events that usually happen.

I **have** a cellular phone. She **loves** her new cell phone. They **hate** their new cell phone.

Also use the simple present tense to talk about things that are always true.

I **don't like** my cell phone.

She **doesn't use** her old cell phone.

**Does** she **use** her cellular phone every day?

Yes, she **does**./No, she **doesn't**.

**Exercise 3** Linda wants the cell phone plan that best fits her needs. Complete the sentences. Use the correct verb in the simple present.

Linda doesn't have (1) **not have** a cellular phone. Her husband and her sisters all \_\_\_\_\_ (2) **have** cellular phones, so she asked about prices at National Cellular. National Cellular \_\_\_\_\_ (3) **offer** two different plans. The Basic Plan \_\_\_\_\_ (4) **cost** \$15 a month for 30 minutes. The 500 Plan \_\_\_\_\_ (5) **give** customers more minutes. Linda \_\_\_\_\_ (6) **think** the plans are expensive.

**Exercise 4** In your notebook, write a paragraph about something you don't have, but want. Use simple present. For example, write "I don't have a cell phone, but I want one. I don't want to pay a lot of money."



### Pair Work

Listen to the conversation between Linda and a clerk at a different cell phone store. Then practice it with a partner.

Linda: I'd like to find out about your calling plans.

Clerk: Great. With our plan, you get 1000 minutes a month for only \$29.95.

That includes long distance and a money-back guarantee if you don't like the phone or the service.

Linda: That's great!

Clerk: Do you have any questions about our cell phones?

Linda: No. Thank you very much for the information.



### Talk About It

In a group, talk about what you do when you want to buy something expensive. Do you look in many different stores? Where? Do you look at newspaper ads? Do you ask anyone for advice? Who? Share your group's ideas with the class.

## Reading for Real

Linda Gonzalez read brochures about cell phones from National Cellular. She thought that their plans were a little too expensive, so she also got information from OptiCall Cellular.

**National Cellular**  
**After the Holidays SALE**

Now you and your family can get the cell phone plan that's right for you.

**Basic Plan—\$15 per month**

- 30 minutes of talk time free each month
- 10¢ for each additional minute
- All U.S. long distance is free
- Free voicemail

Budget Telephone: \$30

**500 Plan—\$30 per month**

- 500 minutes of talk time free each month
- Additional minutes cost only 10¢
- All U.S. long distance is free.
- Free voicemail

A2340 Telephone: Free

See your local National Cellular Store for details and to pick up your phone.



**OptiCall Cellular**  
**Folks and Family Sale**

We have a very special cell phone sale for people on the go!

**Special Economy Plan—\$12.00 per month**

You get 60 minutes per month for local calls. More minutes cost just 15¢ per minute. U.S. long distance costs 5¢ per minute. The telephone costs only \$20. Voicemail is available for \$2 per month.





**Exercise 5** Linda Gonzalez doesn't plan to make a lot of calls on her cell phone. She doesn't want to use long distance. Read the ads again. Complete the chart. Which plan is best for Linda? Why?

	National Cellular		OptiCall Cellular
	Basic Plan	500 Plan	Economy Plan
Free minutes of talk time			
Extra minutes			
Long distance			
Voicemail			
Telephone			
Cost per month			



### Talk About It

**In a group, ask and answer these questions.** What kind of cell phone plan do you want? Do you want a lot of minutes? Do you need voicemail? Do you need free long distance? Look at the information on the calling plans in Exercise 5. Choose the plan that is best for you. Tell your group your reasons for choosing this plan.

