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Implications for literacy learning as urban second grade students engage in digital storytelling.

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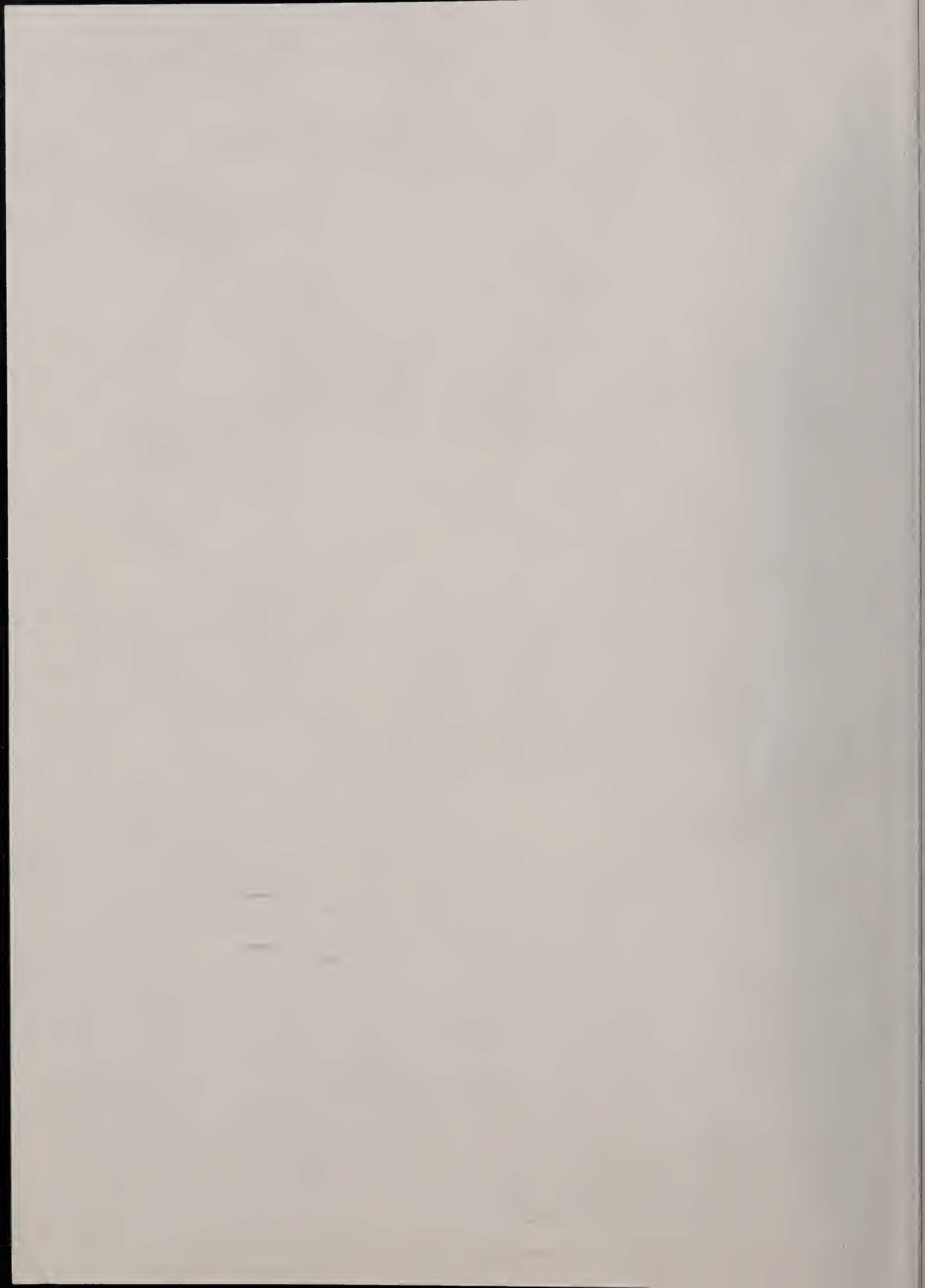
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IMPLICATIONS FOR LITERACY LEARNING AS URBAN
SECOND GRADE STUDENTS ENGAGE IN DIGITAL STORYTELLING

A Dissertation Presented

by

JANE CAREY

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
Of the requirement for the degree of

DOCTOR OF EDUCATION

May 2009

Language, Literacy and Culture

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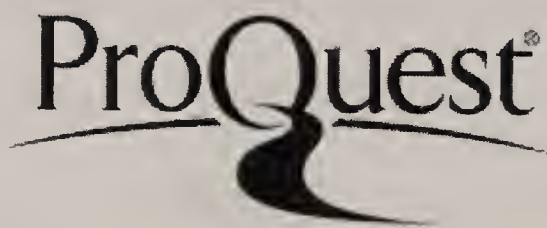
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by

JANE CAREY

Approved as to style and content by:

Masha K. Rudman, Chair

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School of Education

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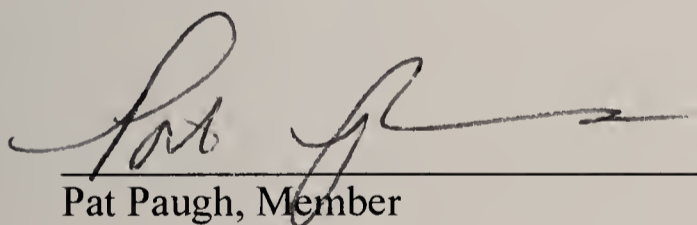
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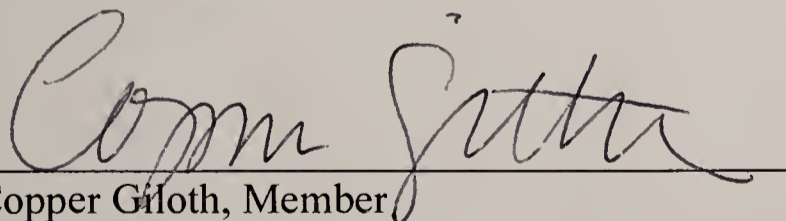
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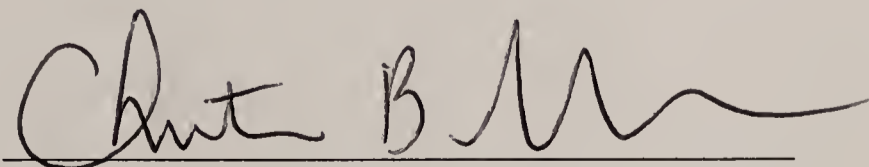
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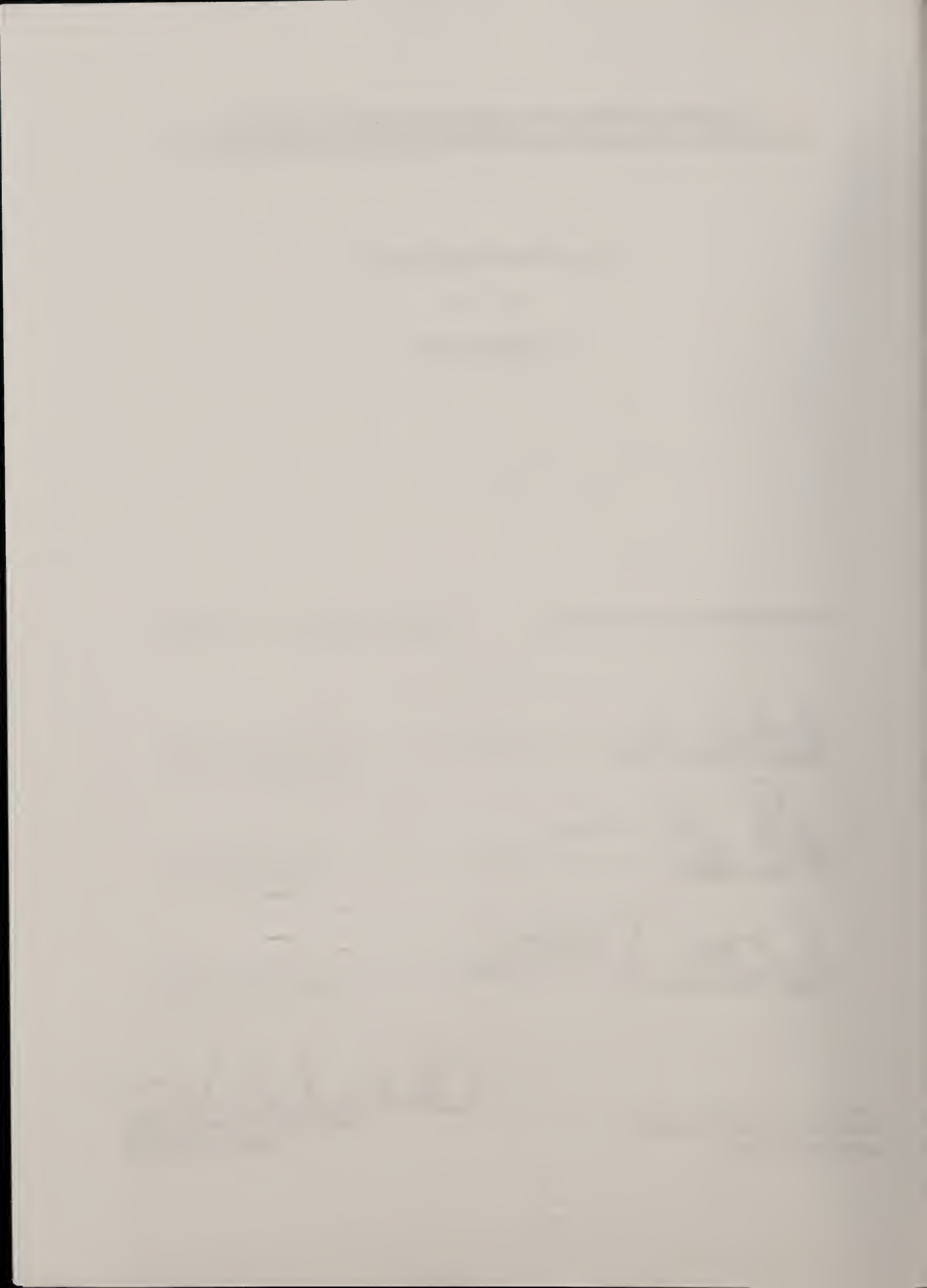
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ABSTRACT

IMPLICATIONS FOR LITERACY LEARNING AS URBAN SECOND GRADE STUDENTS ENGAGE IN DIGITAL STORYTELLING

MAY 2009

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The purpose of this year long strategic ethnography is to discover how introducing digital storytelling into an urban second grade classroom impacts the study of language arts and repositions students as literacy learners. Research questions include:

(1.) In a classroom where most of the students have never used computers before as learning tools, what happens as they learn to create books using digital means? 2. How do the students position themselves as authors, and how do they use imagery in representing their alphabetic (or regular print) texts?

For this study, the students write stories in cooperative writing groups and choose their own topics. The students illustrate their stories and the illustrations are scanned for digitalization. The students learn how to word process their stories, and the students also learn how to incorporate both image and text onto a page using a computer application. The researcher is a participant/observer, spending one language arts period per week in this classroom. The methods of data collection include: fieldnotes, digital photographs, audio tapes, video tapes, student surveys, teacher interviews, news stories and demographic information collected from Winterdale school system, student generated

texts and other student artifacts. The frameworks of this study include: The New London Group's theory of multiliteracies, Kress and van Leeuwen's theory of semiotics, and Spradley's analysis techniques based on ethnographic participant observation. Analysis of these student generated texts using the frameworks mentioned, critical discourse analysis and domain analysis help to reveal emerging themes and how the students position themselves as writers.

Video footage, fieldnotes, participant observation and dialogical data show that the students in this study were excited and energized by their involvement with the Digital Storytelling Project (DSP) and that the use of computer and digital media technology was very well received. As the students shared in the decision making involved in designing a story, they positioned themselves and one another as authorities, and as successful and creative writers and illustrators. Creating the images for their stories opened up yet another mode of communication and became a source of competence for the students. They used their imaginations and elaborated on their story lines as they added visual details that were not found in the written texts. The DSP also raised the classroom teacher's awareness of computer technology and gave her the courage to be an active participant in the realm of technology alongside her students. Three of the student participants exhibited positive behavior changes as a result of participating in this project. This study implies that pairing social semiotics with computer technology can enable students, including at-risk students, to find modes of communication that they can employ, and this has the potential to increase active engagement with literacy learning.

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 Introduction: Educational Technology

Recent research shows that many classroom teachers have been slow to embrace using computer technology as an educational resource on a regular basis (Becker 2000; Roche-Smith, 2004). However, in the urban grade two classroom where I have been conducting literacy-based research for several years, the veteran teacher who is just beginning to use digital technology herself, is willing to take a chance and learn more about technology as she allows me, a university researcher, to aid her in implementing a digital storytelling program in her classroom. As research shows, this willingness to incorporate digital technology within the classroom is not always the norm. There are many classrooms in our country that are equipped with computers and Internet access, but because of the lack of a technology program in their school and/or a lack of teacher training in technology, the computers often sit there unused.

In the afore mentioned urban school, I have observed over the last few years the transition from its being a school without classroom computers or Internet access to a school that has school-wide Internet access and two brand new Dell desktop computers in each classroom. Despite the new technology equipment that is now an available teaching resource, each time I walked down the long hallway to Room 10, I noticed that in the other classrooms (where most of the new classroom computers have been placed by their classroom doors), that the computers sit there idle and are not being used by the students. Even when a school has had a major upgrade in computer technology, if a technology

program is not in place and teachers are not properly trained in technology, what are the chances that these resources will be put to use?

A survey about home computer use that I gave the students revealed another relevant aspect of this situation; not all of the students from this classroom have computers or Internet access at home (See Appendix E). Also, when the students first began using the computers in Room 10, I asked each one if they had ever used a computer before for writing. Almost all of the students participating in the study had never used computers for writing or as educational tools until the advent of the implementation of this study (Fieldnotes, 2/16/2007). How will these students become prepared to be a part of our highly technological society if there is no change in this current example of the digital divide or the gap between those who do have access to computer technology and the Internet and those who do not? (Kaiser Family Foundation, 2004) I also have to wonder how the students feel about having this high tech equipment within their sight at school but they are still not given regular opportunities to use it. This teacher's willingness to participate in such a digital program offers a ray of hope at the local community level in overcoming aspects of the digital divide.

As someone who grew up before the advent of personal computers and the World Wide Web, I have known both sides of the digital divide. It was only when I became a college student in the late 90s that I first became acquainted with the use of computers as an education tool. Since that time, I have made it a priority to gain experience and knowledge in the use of computers as educational tools, and have come a very long way in my knowledge of digital technology. Utilizing my knowledge regarding digital technology and my understanding of the racial and economic implications of the digital

divide, along with my history of having conducted research in this classroom for over two years, I came up with a plan. What made sense to me was attempting to create and implement a Digital Storytelling Project (DSP) that would aid the students in obtaining first hand experience using digital technology and computers as educational tools.

The New London Group's theory of "multiliteracies" (which is detailed in Chapter 2) and its focus on incorporating different modes of meaning-making, such as audio, visual, behavioral and spatial, in relation to written text, helped to inspire me to choose the format of digital storytelling. Digital storytelling can take many forms including creating video texts, but because of the age of the students, their level of writing ability, and the fact that video texts take up a huge amount of space on the computer, I decided that digital storytelling in the form of creating digital books was the optimal choice for this project.

1.2 Research Questions

In an urban second grade classroom where most of the students have never used computers before as learning tools, how will they react as they learn to create books using digital means? How will the students position themselves as authors, and how will the students use imagery in representing their alphabetic (or regular print) texts?

1.3 Purpose of the Study

The purpose of this year long ethnography is to discover how introducing digital storytelling into an urban second grade classroom will impact the study of language arts and how will it reposition students as literacy learners. I hope that by documenting the process of how these students composed and illustrated their digital stories, with regard to

how the students used imagery to represent their alphabetic texts that it would help to reveal how text and image can work together in building effective literacy learners. In this study the classroom teacher and I set out to give these students first-hand experience with using educational technology. The school district did not have a technology program nor did they have a technology teacher at the elementary level. Because of my history of being a research assistant in this classroom, I combined my interest in technology with what I perceived to be the needs of the students and built this study around their perceived curricular needs. I hoped that implementing this strategic kind of research would give the students important skills in using computers and digital media technology.

Instead of basing my study on a theoretical problem, I decided to focus on the needs of the community of students I had been working with for several years. Spradley, a respected writer and ethnographer, gives his readers a list for possible “strategic research” and one of the items in the list reads, “Education for all people, at every stage of life, that equips them to cope with the complexity of choice in our rapidly changing society” (Spradley, 1980, p. 19). I felt that this line of thinking aligned with my situation and the population of students I was working with. Equipping the urban grade two students with educational technology skills and observing the relationship between text and image in literacy acquisition are the two primary goals that have guided the focus and the purpose of this study.

In his discussion of strategic research, Spradley asks the question, “Ethnography for what?” (1980, p. 19) He then answers his own question with, “For understanding the human species but also for serving the needs of mankind” (1980, p. 19). Researchers are faced with many ethical decisions as they plan and implement their specific projects and

as Carspecken points out, it can be done in a way that harms the participants or it can be done in a way that benefits them (Carspecken, 1996). By serving their needs (Spradley, 1980), I felt that I could help make a better world for these students, and as they were aiding me by participating in my study, it was a mutually beneficial relationship.

In order for students in today's society to grow up and productively engage in our technologically oriented world, they should be taught skills in instructional technologies so that they are equipped with the tools that they need to fully participate in our modern society. Kress & van Leeuwen (1996) and the New London Group (1996), two of the leading groups of theorists whose frameworks have guided this study, agree that competence in educational technologies is essential for our students so they can use words, images and other modes of communication effectively and become competent workers in the future.

1.4 The Rationale and Significance of Study

A Digital Storytelling Project offers the second grade students a highly interactive and multimodal way of learning to use educational technology within the context of their classroom. This type of hands-on project seemed like an appealing way to get the students to experience using the two brand new computers that had been sitting idle in a corner of their classroom. The fact that their classroom teacher was willing to work with me, giving me the opportunity to document the processes involved and use as data for my dissertation also seemed like an opportune chance to be part of overcoming the digital divide in an up-close and personal way. Assisting young students who have been, for the most part, completely inexperienced with computer technology and aiding them in

gaining this knowledge really seemed to me to be an educational opportunity of a lifetime.

Considering that most of these students had never used computers as educational tools before, I will be exploring the significance of how this may impact their perceptions of technology's role in literacy learning. Another aspect of technology's role in this study is the fact that almost all of these students are experiencing digital technology in a student centered, hands-on environment. Important aspects of the writing workshop that we chose to embrace included elements of the writing cycle: prewriting, first drafts, peer editing, conferencing and final drafts (Calkins, 1986; Ray, 2001; Meyers & Pough, 2002). Other key components of this type of workshop included: following a set schedule for the writing workshop (every Friday morning), letting the students choose their own topics, and encouraging the students to talk aloud and discuss their writing as well as the writing process within their groups (Calkins, 1986; Ray, 2001). Mini-lessons which exposed the students to various aspects of the writing process and conferencing with groups and/or individual students while the teacher/researchers modeled effective editing (Ray, 2001) were other essential writing workshop elements that helped shape this project.

This writing workshop (Dyson, 2003; Lensmire, 1997; Lacina et al., 2006) atmosphere of our digital storytelling project and its lack of pressure and stress, which is not always the norm in many academic situations, was designed to enable these students to learn to enjoy technology's role in learning and literacy and to experience it in a very positive light. Also, because of the organization of writing groups, the cooperative learning involved in this storytelling program and the social aspects of literacy learning

that result from this are extremely important aspects of this study. Incorporating the utilization of technology into a writing workshop atmosphere and using cooperative writing groups were essential components of how this project was designed.

1.5 Definitions

Digital – A word which is “most commonly used in computing and electronics, especially where real-world information is converted to binary numeric form as in digital audio and digital photography. Such data-carrying signals carry one of two electronic or optical pulses, logic 1 (pulse present) or 0 (pulse absent)” (Wikipedia.com, 2007)

Digital camera - A camera that takes photographs and stores them in a digital format.

This type of camera was first created in the early 1990s

Digital divide- The divide between those who do have access to computer technology and the Internet and those who do not

Digital Storytelling- A multimedia style of communication that can take many different forms; from a video format to a storybook format (For the purpose of this study, it represents using digital means to produce an illustrated storybook.)

Internet- It is a system of computer networks that span the globe and are connected; it was created in 1969 by the US government

Paint Shop – A computer program found on most personal computers that allows the creation of images that are already in a digital state

Photo Shop- A computer program that allows digital photographs to be viewed and manipulated

Scanner- A technological device that copies images and digitalizes them for use in computers

Word – A word processing program found on many computers that is primarily used for creating alphabetic texts but can also incorporate images as well

1.6 Overview of the Study

The first chapter has described the overview of the study as well as giving initial background information regarding the urban setting, the second grade participants, and the classroom teacher who was willing to allow me, the university researcher, to implement a digital storytelling program in her class. The problem has been identified and the rationale and significance of the study are discussed. The research questions are also identified and a list of definitions relating to relevant computer technology is provided.

Chapter two provides the theoretical frameworks as well as the literature that has been reviewed to inform this study. Although there is little research that corresponds directly to the topic of my study, second grade students cooperatively writing digital stories with a focus on multimodality and how images and text work together, there is a considerable corpus of literature that addresses key aspects that are the building blocks to this type of literacy learning. In order to support the decisions I have made regarding the methodology and analysis of my study, I have chosen to focus my literature review on topics that expand on these key aspects and help to define the building blocks that distinguish this study. Some of the important facets of scholarly literature that have informed my research include educational technology and its influence on the changing nature of literacy practices. Considerations that arise when using educational technologies (e.g. teacher resistance and training of teachers in technology), copyright laws and Internet privacy and safety are a few other pertinent topics of research that I

have expanded upon. Relevant issues when conducting a technologically driven study in an urban school, like equitable access and the digital divide are detailed as well.

In order to provide a theoretical ground for my study, I have expanded upon relevant theories and their constructs. Semiotics and social semiotics are addressed as are literacy studies like Cowan & Albers' 2006 study which utilized these theories and their constructs. Kress and co-author van Leeuwen are major contributors in this semiotic discussion with their focus on the changing relationship between the "signs" of text and image in our society. Recent semiotic changes, like the move from the medium of book to computer screen, and the way entry points to begin reading are no longer stable (e.g. beginning to read in the left hand corner of a book vs. Web sites that offer entry points of links located in various places across the screen) are also elaborated upon. Other scholars are introduced like Moran, Prior and Bolter as they expand this semiotic conversation by responding to and questioning many of Kress's assertions. In looking at the fluctuating roles of text and image and the changing nature of our current "semiotic landscape" (Kress & van Leeuwen, 1996) a thought provoking scholarly debate is revealed and discussed.

The New London Group's theory of multiliteracies with an emphasis on multimodality, or incorporating other modes such as visual, linguistic, gestural, audio, and spatial along with text, is also detailed. Their constructs of Design, Redesign and Available Design are introduced, and Chandler-Olcott & Mahar's 2003 literacy study, which employed this theory and its constructs, is discussed. Also, the term "New Times" (Elkins & Luke, 1998) is defined and discussed as is the notion that a new definition of

literacy is needed as educators learn to embrace these changes brought about by media and technology (New London Group, 1996; Luke & Elkins, 1998).

The changing nature of literacy and the way technology has influenced our culture continues to reshape our students and affect literacy acquisition. Addressing and exploring these theories that relate to literacy's current state of flux as well as the possibilities that these ideas offer have been crucial factors in designing, implementing, and analyzing my study. Focusing on the relationship between text and image and how they work together as students compose digital stories allows insight into the thoughts, learning styles, and social aspects of young students as they acquire literacy skills.

The third chapter details the research methodology and the research design that have been used in this study. Data collection is discussed and details are given regarding the participants, the focal students, the classroom setting and the overall research site. Curriculum design and student surveys are addressed. Limitations and trustworthiness of the study are also discussed.

Chapter four articulates the analysis conducted in this ethnography. The presentation and analysis of the data are conveyed. Student surveys are detailed, critical discourse analysis (CDA) is employed on transcripts, and imagery is analyzed. Specific student experiences are detailed and patterns and themes are identified. The data is analyzed with regard to the literature that has informed this study.

The fifth chapter focuses on summarizing key findings. The data's connection to the literature is addressed. Conclusions are drawn, and implications regarding the use of computer technology in literacy education are introduced. Suggestions for future research are also discussed.

CHAPTER 2

LITERATURE REVIEW

2.1 Digital Hybridity of Text and Image

The use of computer technology in education has increasingly become an important aspect of how students are learning and acquiring information. The literature I will be drawing on for this study includes the topics of computer technology in education with a focus on digital hybridity of text and image. For my review, I use the following definitions of digital hybridity of text and image: (1.) The various ways that image and text work together using informational technologies; for example, the way one can use Photoshop to incorporate text on digital images and by doing so enhance or alter the meaning of the image. (2.) The transformative and fluctuating relationship these two modes of communication are going through as digital technologies saturate our culture (as pointed to by Bolter, 2001). An example of this that will be discussed later in this chapter in detail includes Moran (2005) and Prior's (2005) stances regarding Kress's (1996, 2005) postulations on how imagery as a form of communication has recently become more dominant in our culture than the written word.

2.2 Rationale

“Society has shifted from the culture of the printed word into one dominated by the electronic confluence of image, audio and text”

(Roche-Smith, 2004, p. 1).

Literacy practices in our modern world have been going through changes at an extreme rate (Luke & Elkins, 1998). In this day and age, students no longer gain access to language and literacy solely from the printed word like books, magazines and newspapers (Elkins & Luke, 1999). The Internet and computers have opened up a new range of educational possibilities including Web Quests (Christie, 1996; Dodge, 1998; Schrock, 2001), podcasts (Richardson, 2005/6), online conferencing and classrooms (Green, 1998) as well as Utube, a Web site where people can post and view videos, blogs (or Web logs), online encyclopedias, thesauruses and dictionaries.

There are also many instructional technologies available for the classrooms without Internet access that have broadened the scope of literacy and language teaching and acquisition. CD ROMs, PowerPoint, Windows Movie Maker (Peterson, 2005), and Macintosh computer's imovie, as well as computer reading programs and tutorials are some of the examples of the many new technologies available to enhance instruction.

Two of the more recent online writing technologies are Web logs or “blogs” and wikis. Blogs are a type of personal journal or diary found online which often give commentary on a chosen subject. Wikipedia, an online encyclopedia, which is probably the most well known wiki, states, “A wiki is software that allows users to create, edit, and link web pages easily. Wikis are often used to create collaborative websites and to power

community websites” (Wikipedia, 2008). According to Barton, an assistant professor at St. Cloud State University in Minnesota, wikis are Web sites that anyone with Web access can edit (Barton, 2005). Some scholars like Barton, think that Weblogs and wikis have an important place in the composition classroom.

Frequent blogging of the self-reflective kind will help students develop subjectivity and explore their thoughts and feelings in a writing space that is public, yet controlled by the student ... wikis provide that space where students strive for consensus and learn to share a common, community voice. (Barton, 2005, p. 189)

These changes in literary practices, many of which reflect digital technology’s influence on communication, are all important aspects of what Luke and Elkins call the “New Times.” According to Luke and Elkins, the “New Times” are about the changing nature of media with its “mass transmission of information across space and time” (Luke & Elkins, 1998, p. 213), the incorporation of technologies both new and old, and the changing nature of literacy instruction with an emphasis on multimodal communication (Luke & Elkins, 1998).

Luke and Elkins claim that in these “New Times” what educators need is a “vision of the future of literacy” (Luke & Elkins, 1998, p. 4). They feel that educators face the important task of gaining new understanding of how technologies both old and new and the potential workplace sites for our students are creating new demands as well as new options for their students.

To sift through the maze of ways with words of new technologies and new cultural forms, to decide how to best situate and position our teaching, our curricula, and our learners in relations to these new worlds- these tasks indeed will require new kinds of critical literacy of all of us. (Luke & Elkins, 1998, p. 6)

What new kinds of critical literacy (Luke & Elkins, 1998) will be required and what effect will it have upon our lives and our world as we currently know it? Roche-Smith, a recent doctoral graduate from the University of California, Berkley, agrees with the need for re-envisioning ways of teaching our students as she claims that “Literacies shape how we develop as persons and what we are impeded from becoming” (Roche-Smith, 2004, p. 5). She also stresses the notion that there is still a need to teach multiple dimensions of literacy pedagogies and to make these opportunities equal for those in our world who have been underrepresented. As students learn to think critically about their texts, studies have shown the use of new writing technologies, like e-mail, instant messaging, and online classroom and conferencing is creating change on many levels (Roche-Smith, 2004).

There are already significant case study data indicating that the kinds of reading around and of these new technologies may generate cognitive processes, sociocultural practices, and preferred “ways with words” that are unique blendings. E-mail writing combines the grammatical characteristics of written and spoken language into a new kind of electronic creole. Surfing the Internet requires kinds of schema recognition, elaboration, and, indeed, code switching (dyglossia) that we haven’t even begun to fully describe. And constructing a Web page entails a visual, aural, and intertextual aesthetic for which we don’t even have critical criteria yet. (Elkins & Luke, 1999, p. 214)

Elkins and Luke’s quote begins to illustrate how digital technologies have begun to change not only the social aspects of our literacy practices but also the cognitive processes involved. Both e-mail and text messages have taken an interesting twist on how we use written language. The authors of texts of both of these applications often shorten words, and use spellings that are not found in the dictionary but rather are simplified so that the sounds of the words correspond to the written words. For example, in text messaging, “u” often replaces the word “you” and “r” often replaces the word “are”

creating what Elkins and Luke refer to as an “electronic creole.” Also, the dyglossia or code switching needed in both reading the Web or designing Web sites entails understanding how to move from one mode of communication (visual, textual, aural, etc.) to the next, as well as seeing the larger picture and understanding how these different modes work together.

Because of the many ways that digital technologies have altered the way we consume and create multimodal texts, I have to ask: Is the linear style of thought that worked so well with the reading of alphabetic texts enough here or is the use of associative cognition becoming more important as we are switching between many different modes of representation? It appears that new “critical criteria” and new vocabularies are needed as we identify the changing thought processes involved as our literacy practices are being reinvented with the use of digital technologies.

In order to expand on the need for the reinvention of literacy, I now turn to The New London Group, a group of influential educators, researchers and writers who also strongly articulate this need. The New London Group (NLG) is composed of ten scholars from English-speaking countries around the world, who came together for a week in New London, New Hampshire in September of 1994, to discuss the current state of literacy and literacy pedagogy. The New London Group consists of Courtney Cazden, James Gee and Sarah Michaels from the United States, Bill Cope, Mary Kalantis, Allen Luke, Carmen Luke and Martin Nakata from Australia, and Norman Fairclough and Gunther Kress from Great Britain.

Over the course of several years before their 1994 meeting in New London, NH, these literacy educators have collaborated on many different levels, drawing from one

another's work or working together on various projects (The New London Group, 1996).

At their week long meeting in 1994, they have come to the conclusion that a new view of literacy is in order in our world today because of the "multiplicity of communication channels and increasing cultural and linguistic diversity" (The New London Group, 1996, p. 60).

The New London Group authors articulate that the changes in communication media coupled with cultural, institutional and global differences meant that literacy pedagogy was changing rapidly and what was also changing was what the students should be learning. So the authors propose a new type of literacy called "multiliteracies" (The New London Group, 1996, p. 60). Within this new theoretical frame of multiliteracies, the authors assert the importance of incorporating different modes of meaning-making where text is in relation to the modes of audio, visual, behavioral and spatial. Also, within this framework, the authors stress that the realities of globalization as well as an increase in diversity locally are important aspects that guide their theory. A key argument that New London Group offers found within the multiliteracies theory is their assertion for the need to incorporate emerging digital technologies into our school's curriculums. They argue that this is vital as it positions students to become competent and skilled workers of the future (The New London Group, 1996).

Moving beyond what the New London Group call an authoritarian kind of pedagogy with a definition of 'mere literacy' that includes remaining "centered on language only and usually on a singular national form of language...based on rules such as mastering sound-letter correspondence" (The New London Group, 1996, p. 63), they redefine what literacy means. New London Group state that multiliteracies are "a

different kind of pedagogy, one in which language and other modes of meaning are dynamic representational resources, constantly being remade by their users as they work to achieve their various cultural purposes” (The New London Group, 1996, p. 63). Literacy learning and keeping literacy up to date with the “New Times” and the multimodalities offered is crucial if we want our students to continue to learn and flourish or in the terms of the New London Group obtain these “various cultural purposes.”

2.3 Considerations

Although there are many positive aspects of implementing computer technology in the educational setting, there are certain risks, considerations and drawbacks that also must be addressed. In this section, I first take a look at the digital divide and the implications that it has for education and our society. Next, I address teacher education in technology and the implications this may have on incorporating instructional technologies like digital story telling in the classroom. Finally, I discuss some of the security issues that may arise if educators or students choose to post their digital stories on the Internet for the entire world to see.

One factor in considering equitable access to technology for students is the “digital divide.” The Kaiser Family Foundation defines this term, which was coined sometime in the mid-1990s, as “the gap between those who have ‘ever’ and those who have ‘never’ used a computer or the Internet” (Kaiser Family Foundation, 2004). As Warschauer et al. point out, if there is an equal distribution of computers and Internet access, these can be viewed as powerful tools to help level the playing field for marginalized students. However, if access is unequal, many feel that this inequality will

increase the social and educational stratification, thus helping to perpetuate the marginalization of some students (Warschauer, Knobel, & Stone, 2004, p. 563).

Recent research in U. S. schools that has focused on examining the inequality of computer and Internet access has shown the promising results that these gaps in access are slowly narrowing (Warschauer, Knobel, & Stone, 2004, p. 564). According to Warschauer et al.:

...In 1998, the ratio of students to instructional computers with Internet access in U.S. schools was 17.2 in schools with large numbers of minority students enrolled (those schools with 50% or greater of ethnic minorities) and only 10.1 in low minority schools (those with 6% or less of ethnic minority students enrolled; see Kleiner & Farris, 2002). Three years later, in 2001, the ratios were on average 6.4 students per computer in high-minority schools to 4.7 students per computer in low-minority schools. (p. 564)

Although the gap in the digital divide does seem to be becoming less prominent within schools, it still does exist and some feel that it has become more of a complex issue (Haycock, 2004). Whether or not students' homes have computers and Internet access is still an issue, and it is clear that minorities still have "poorer access to technology than others" (Haycock, 2004, p. 34). Warschauer et al. also show us that computers are being used differently by specific groups of students. They give examples of how online access is often given as a reward to advanced students. Vocational uses of technology are given more often to low socio-economic-status (SES) students.

Research shows that narrowing of the gap of the digital divide seems promising as it seems to be moving in the right direction; however, the gap that exists still positions lower-SES students at a disadvantage both at home and in school. How educators, researchers, administrators and policy makers continue to address this problem is a vital aspect of alleviating these existing inequalities. "Whatever they call the current digital

divide, policy experts and advocates generally agree that increasing technology access for disadvantaged children is a worthy policy goal” (Kaiser Family Foundation, 2004, p. 1). Working together collaboratively at the community level as well as at a more global level seem to be key aspects in overcoming the disparity of this divide. I now look at educators’ roles in the use of technology in the classrooms, another place where collaborative community work may be the key to successful outcomes.

It is important to recognize that in some cases using digital technology within the classroom does seem to have some drawbacks for certain educators. “As we face these challenges brought about by new technologies, many literacy educators are still plagued by the residual traditions of print literacy” (Roche-Smith, 2004, p. 1). Teachers who are not yet comfortable with computer use may feel that their students know more than they do and this can be intimidating. One of the challenges this new type of technology can pose is overcoming educators’ resistances to incorporating technology in the classroom (Watson, 1999). Also, according to eSchool News, a survey given to teachers in 2005 reveals that 75.5 percent of teachers surveyed found that computer technology was an effective tool for teaching in their own content area (Educational Leadership, 2005/2006, p. 26). This data raises some questions: To what extent did the 75.5 percent of teachers use computer technology? What kind of computer technology did they use? What about the other 24.5 percent of teachers who didn’t find computer technology effective for teaching in their content area? Was this from a lack of knowledge about how to use the technology or was it perhaps because printed materials seemed to be sufficient?

In order to begin to address the issues of teacher training and professional development in regards to implementing technology in the classroom DiBello, an

assistant professor in the Graduate Education and Research Department at Barry University, stresses the need for collaboration and commitment not just from the teachers but among teachers, administrators, students and parents. She also comments on the need for updated technology resources within our schools, as well as the need for teacher training and support. "Without proper education and support, teachers will find it very difficult to employ technology within their classroom settings" (DiBello, 2005, p. 240). I feel that DiBello makes some very important points about the need for proper teacher preparation as well as the need for collaboration among all the parties involved (e.g. bi-weekly or monthly meetings where implementing educational technology and pertinent issues can be discussed among teachers, educators and parents); to place this issue of technology's use in the classroom only on the teachers is not realistic or fair. Professional development with a focus on technology in education should be offered to the educators as a form of support from the school districts. Without this kind of assistance and support from administrators, as well as keeping parents and students informed, instructional technologies in the classroom certainly seem to have less potential of being effectively put to use.

Other considerations that need addressing are the possible risks involved in incorporating digital imagery into the classroom context. There are copyright laws to be adhered to, and if teachers or students are posting student work on the Internet, there are other concerns to be aware of.

Schools need to think through the potential privacy and safety implications that go along with widespread publishing of student created content. How widely students should post their work online and whether they should connect their names with it depends on a range of factors – including the comfort level of adults involved, the capabilities of the software being used, and differing state and national laws. (Richardson, 2005/6, p. 27)

Certain school districts do not want images of their students or even their names on the Internet for privacy reasons. When I began the task of creating a Website for the research site, an elementary school in Winterdale (a pseudonym), the district Webmaster made it very clear that these district privacy laws were to be strictly adhered to. Even a name on a piece of artwork would need to be removed before posting this work on the Internet.

Winterdale Public Schools provide a page called "Internet Safety Resources" on their Website that offers many links that deal with promoting safe usage of the Internet. A few examples of the subject matter of the various links on Winterdale's page that help promote online safety include: computer hacking and the law, copyright and fair use issues, safe and responsible use of the Internet, child exploitation and missing children, crime prevention and fraud awareness (Winterdale Public Schools, 2006).

There surely are considerations to be taken into account when incorporating digital imagery and digital storytelling (as well as other instructional technologies) in an educational setting. The digital divide is certainly something that affects the outcomes of instructional technologies, and finding ways for equal access for those who fall into the category of not having adequate computer or Internet access because of their social economic status or because of lack of funding in their schools are crucial to the resolution of this crisis. Also, the need to get teachers properly trained is another key element in helping to create equal access for all students. Finally, educators and students need to be aware of the potential risks and privacy issues (e.g. predators, estranged family members or broken families with domestic abuse issues, bullying etc.) involved in using the

Internet as an educational resource, especially if they are going to use it as a place to showcase students' digital stories and artwork.

In the next section, I move beyond these considerations and turn to the important theoretical implications that delve into the different theories and ways of thinking about the literary outcomes and possibilities within the realm of digital hybridity of text and image.

2.4 Theoretical Implications

An important theoretical conversation is taking place among the leading scholars in the field of educational technology regarding the roles and relationships between image and text that is currently going on. Before discussing what the specific theorists have to offer, I feel that a few definitions are in order. First, because the first theory to be dealt with is one that focuses on semiotics, I will give a basic definition of semiotics, and then I will identify the main elements found within this specific theory. The American Heritage Dictionary's definition of semiotics is, "The theory and study of signs and symbols, esp. as elements of language" (The American Heritage Dictionary, 2001, p. 755). When speaking of semiotics it is important to understand the meaning of key terms including: sign, signifier, signified and sign-maker. According to Kress & van Leeuwen, the "sign" is the crucial element in any form of semiotics. The "signifier" is the form that is created. The "signified" is the realized meaning of the form and the "sign-maker" is the person who is creating a sign (be it a text, a moving image, a painting etc.) (Kress & van Leeuwen, 1996, p. 5).

In this section about the theoretical implications of digital hybridity of text and image, the first relevant theory to be addressed is semiotics. I discuss the work of

Gunther Kress, an extremely influential semiotician, who posits the frameworks of social semiotics and multimodal literacies. Kress, a professor at the University of London, has written many important books and articles about visual literacy, multimodal literacies, language as well as semiotics (New London Group, 1996).

The first work of Kress's that I discuss is *Reading Images: The Grammar of Visual Design*, which he wrote with co-author van Leeuwen. There are three main aspects to Kress and van Leeuwen's book that I address: the social and cultural aspects of semiotics, education's role in teaching students about instructional technologies that focus on the digital hybridity of text and image, and the element of fear found in our society regarding images and their role in the changing nature of communication. I will also be using these three main points as frame to discuss other relevant literature in the field.

Two of Kress & van Leeuwen's main premises are 1. That each mode of communication, be it text or image, is important whether it stands alone or in conjunction with the other and (2.) The act of sign-making, whether it is in the form of creating written text, creating images or any other mode is an act that reflects the sign-maker's social and political environment (Kress & van Leeuwen, 1996).

What I find intriguing about Kress & van Leeuwen's discussion of the different roles for writing and images is the importance and independence they give to each medium. They write, "The visual component of a text is an independently organized and structured message – connected with the verbal text, but in no way dependent on it: and similarly the other way around" (Kress & van Leeuwen, 1996, p. 17). This is an interesting relationship to ponder, but I'm not so certain that the visual text and the

written text are never dependent upon one another. For example, in a science textbook, it seems that often times an image will help to illuminate a scientific concept or that the written text will help to clarify an image. These two modes of communication often work in a way in which one mode enhances the other; it seems that their relationship is a dynamic one. How one mode could be considered to not ever be dependent on the other mode seems a bit unrealistic. Another assertion of Kress & van Leeuwen's that seems more realistic is that each of these two mediums, the written and visual texts, have their "own possibilities and limitations of meaning. Not everything that can be realized in language can also be realized by means of images, or vice versa" (Kress & van Leeuwen, 1996, p. 17).

In *Reading Images: The Grammar of Visual Design*, Kress & van Leeuwen state that sign-making is a social and cultural act, and they assert that children's sign-making, as well as adults', is guided by their unique interests. They also discuss the hybrid nature of making signs and that children create their own representations "as a constant production of signs, in which previously produced signs are transformed into new signs" (Kress & van Leeuwen, 1996, p. 9). In the terms of New London Group, with Designing representing sign-making, Available Designs are transformed and through the Designing process and old materials are made into something new (The New London Group, 1996, p. 76).

Visual images that exist in our everyday world such as those found in magazines, newspapers and advertisements are combined with written texts in a layout to create visual designs (Kress & van Leeuwen, 1996, p. 15). Although Kress and van Leeuwen acknowledge that the knowledge and skills necessary to create these types of multi-modal

texts are important in our society, they feel that “In terms of this new visual literacy, education produces illiterates” (Kress & van Leeuwen, 1996, p. 15). Therefore, it seems that as a society we need to recognize the changing nature of communication. Multi-modal texts and visual literacy are important aspects of literacy that our schools should be including in their curricula.

Kress with his coauthor, van Leeuwen, assert that the landscape of semiotics has recently gone through a revolutionary change as the image vies to gain a place in communication equal to or perhaps even superior to the written word (Kress & van Leeuwen, 1996). A central notion of Kress and van Leeuwen’s that I find to be really thought provoking regarding this “revolutionary change” is their assertion that our society’s recent movement towards this new literacy that is focused on images and visual texts can be viewed by some as a threat or “a sign of the decline of culture” (Kress & van Leeuwen, 1996, p. 15). In summing up the discord found in this rather complex situation, Kress and van Leeuwen assert that the fear or opposition to this recent trend in visual literacy is not about the images themselves but that it’s about the fear that the images or visual media can become an alternative to the written word. The written word has played such a dominant role in our society as a highly valued form of communication, and because it has such an important place in our educational system, some are uneasy about the “new” visual literacy’s upcoming role in communication (Kress & van Leeuwen, 1996, p. 16).

After almost a decade to ponder the matter, it seems that Gunther Kress continues to hold his stance about images’ changing role in communication, and he even elaborates on this phenomenon in his 2005 article, “Gains and losses: New forms of text,

knowledge and learning.” This article focuses on the gains and losses that are the result of the movement “from representation primarily through writing to representation primarily through image” (Kress, 2005, p. 5). Kress realizes that this recent trend, in which representation is moving away from text and toward image, is evoking a wide range of responses which are primarily negative but span from utter despair to nostalgia (Kress, 2005, p. 5).

Seeking new tools to describe the changes in modes and media, Kress views the recent emergence of multimodalities as a dominant form of representation. Using a social semiotic theory as a lens, Kress articulates a number of points that describe some of the changes of modalities within “Gains and Losses,” and I will discuss three of the main points that I feel are very significant to this review of literature. The first is that “vast” semiotic changes that have taken place in two forms “from the centrality of writing, to the increased significance of the image” and “from the centrality of the medium of the book to the medium of the screen” (Kress, 2005, p. 6). Kress suggests that we have moved from a society whose dominant mode of communication has been writing or text for many centuries, but within the last twenty years the image and the screen have very apparently become the dominant modes of communication. Because of this change in modes of communication, Kress stresses the importance of incorporating other modes such as visual literacy within the span of the English language arts curriculum (Kress, 2005).

The second assertion that Kress makes is that the layout of knowledge has also been altered. For many years the norm was the book with its numbered pages and point of entry being the top left hand corner of the page. Kress suggests that the new norm is no

longer a book, but a home page found on the Internet with its multiple points of entry (Kress, 2005). One no longer assumes that they enter the text and images of a home page from the top left corner; instead there are various and often many points on the page where the interpreter can begin to take in the information that is set forth (Kress, 2005). Kress finds this to be of significance because of the way it speaks about the notion of order.

The order of this page and of the whole site is open- I won't even say relatively open, because even though the site and its potentials are being constructed and structured and the designers of the site imagine the possibilities of reading, they are not enforced and the possibilities are large. (Kress, 2005, p. 10)

The third notion of Kress's that I feel is of importance here is his rather dichotomous view regarding the semiotic functions given to the word and to the image. Kress states that words are signifiers that are in fact "empty entities" and it is up to the reader "to fill these relatively vacant entities with her or his meaning" (Kress, 2005, p. 7). On the other hand, "image-representation is founded on depictions" and "unlike words, depictions are full of meaning: they are always specific" (Kress, 2005, p. 15). He goes on to state that words are "vague, general, nearly empty of meaning" while depictions or images are "precise, specific and full of meaning" (Kress, 2005, pp. 15, 16).

Although I feel I understand Kress's stance here, I think that this is one place in this article where his articulation of extreme binaries is the source of much scholarly discord. His assertions raise questions like: If a word can be seen as a signifier devoid of any concrete meaning, then why can't an image also be seen as a signifier that is also devoid of meaning until a viewer assigns meaning to it? Why he assigns such concreteness to images, when they too can take a variety of meanings depending on the

context they are in, seems to evoke discord from some scholars. Prior, as you will read about in the following pages, seriously questions this binary template Kress has suggested in assigning meaning or lack of meaning to images and text. Following this discussion of Kress's "Gains and Losses" are responses by Moran and Prior who oppose some of Kress's notions. I have to wonder if, as Kress was writing "Gains and Losses," that he speculated that this article would also evoke a wide range of responses, some of which are negative.

One of the more thought provoking responses to Kress's assertions found in "Gains and losses: New forms of text, knowledge and learning" is from Charles Moran, who served for many years as a professor of English at the University of Massachusetts, Amherst, and who also acted as site director of the Western Massachusetts Writing Project. Charles Moran's article, "Powerful medicine with long-term side effects" is a direct response to Kress's article "Gains and losses: New forms of text, knowledge and learning."

Moran's biggest concerns appear to be that if we do follow Kress's lead by incorporating images and graphics within the concept of modern literacy that this will have an adverse effect on the oral aspects of literacy instruction (Moran, 2005, p. 63). Moran fears that with the inclusion of image in the English curriculum frameworks that the first important element of English pedagogy to go would be that of reading aloud. He also asserts that the second element of instruction that would be left behind is that of class discussion (Moran, 2005, p. 65). Moran states that the social semiotic theory proposed by Kress does include the "social, the human situation" (Moran, 2005, p. 66); however, he feels that the semiotician's approach with the focus being on the signs is "potentially

dangerous” (Moran, 2005, p. 67) as it could lead us from voice, social talk, reading aloud, and class discussion. He also asks, “If the move from page to screen is an inevitable effect of new technologies, and if we should modify our curriculum to respond to this change, then are we not on the edge of a technological determinism that will make it more difficult to critically see other uses of new technologies in our field?” (Moran, 2005, p. 67)

Regarding Moran’s conclusion that modifying our curriculums to meet the changing nature of communication would make us fall into the category of “technological determinism,” I have to ask: Would this really be a case of “technological determinism” or would it be a good way to embrace change and keep up with the digital advances of the “New Times”? I also found Moran’s notion about using images in the English language arts curriculum as being a threat to voice and class discussions significant, as it was one concern that had not even crossed my mind. As a photographer and literacy educator, I see the wider inclusion of images within the broad definition of literacy as one that would likely foster and not marginalize the oral and face-to-face aspects of the English language arts curriculum. Using imagery with text adds so much depth, and in my opinion, would in fact open up the English language arts classroom to more and richer discussions. I feel that even when the educational context moves from a “real” classroom to an online class or a chat room, that the use of imagery when it is paired with written text can help to broaden the scope of the discussion and add depth the students’ understanding.

I now turn to Prior, an English professor from the University of Illinois, who also has written an article in response to Kress’s “Gains and Losses: New forms of text,

knowledge and learning.” Prior begins his article, “Moving multimodality beyond the binaries: A response to Gunther Kress’s ‘Gains and Losses’ ” with assertions from Kress that he feels are valuable. Prior agrees with Kress’s notions of the changing scope of literacy and sees the value in multimodality. As different modes of communication have different things to offer or in Prior’s terms different “affordances,” Prior states that, “. . . it is not only critical for us to understand and evaluate the affordances offered by modes and media but also to act pedagogically and politically in light of those evaluations” (Prior, 2005, p. 24).

However, the bulk of Prior’s article is spent questioning Kress’s notions in “Gains and Losses.” Prior feels that Kress did not fairly portray our semiotic history and asserts that “the past Kress evokes is a very selective past” (Prior, 2005, p. 24). Giving a specific example of a book from J. Martin Miller in 1904, who used images as well as text, Prior claims that this is one of many books from that era that are not simply text (Prior, 2005).

Prior also has issues with Kress’s statements about the changing nature of entry points in texts. Giving examples of newspapers, magazines, cookbooks, dictionaries, restaurant menus, and more, Prior again feels that Kress is being too selective in his discussion of entry points (Prior, 2005). This discussion seems to be raising more questions. Was Kress intentionally being selective of the genre of books he was using for a comparison of the changing nature of entry points? Are these “prototypical representations” that obscure the semiotic landscape as Prior seems to insist? (Prior, 2005, p. 26) Prior does agree that the changes we are currently seeing are “rapid” and “even disorienting” (Prior, 2005, p. 26); however, he does make some relevant points as he disagrees with much of what Kress is articulating.

Prior, as mentioned earlier, also is very resistant to embrace Kress's notions about the binary nature of words and images. He states:

Kress on the other hand proposes a set of hard binary distinctions between words and images. Words in his account are finite, sequential, vague, conventional, authored, narrative and/or casual, and open to critique. Images are finite, spatial, specific, natural and transparent, viewed, and available only for design. Kress's attempt to describe modes in terms of mutually exclusive, binary affordances repeatedly leads to selective examples selectively read. (Prior, 2005, p. 26)

The two extreme stances these scholars are taking provoke thought. Is one right and the other wrong or is it perhaps a matter of opinion? Does it depend on one's definition of semiotics or on one's definition of language? Although I feel that these questions are open to interpretation, what I do see as being clear is that Prior does agree with Kress on certain major issues. He ends his article agreeing with Kress's claim that at this point in time, it is of great importance that we investigate the affordances presented by the various modes of communication and media. Prior agrees that this exploration is vital because the current "period of rapid and radical social, economic, political, cultural, and technological change" (Prior, 2005, p. 29) is greatly effecting and reorganizing media and other modes of communication.

Does this mean that our English language arts curriculum should not be altered or adjusted to accommodate the influx of imagery as a mode of communication in our society as Moran suggests? Or perhaps it is time to include visual literacy as an important component of what literacy has become in these "New Times" of multimodality and multi-modal communication.

There is one more claim that Prior makes that is of interest to this conversation. He states that he would contrast some of the cross-modal views that Kress is asserting

with those of Jay Bolter (Prior, 2005). Bolter, a professor at the Georgia Institute of Technology, is another important theorist who traces the numerous changes we have seen in the layout of newspapers. While Kress claims that it is the newspapers who are borrowing the integration of image and text in their current layout schemes from the computer screen, Bolter feels that the change has been a reciprocal one (Prior, 2005). Bolter feels that the layout effects are complex and mutual as texts and pages are being borrowed by the computer screen and computer screen layouts are being borrowed by newspaper covers and pages (Prior, 2005).

It is not only about his assertions regarding newspaper layouts that Bolter is gaining a name for himself. Jay David Bolter, author of *Writing Space: Computers, Hypertext, and the Remediation of Print*, has some strong opinions and ideas about digital technologies and how their emergence is affecting the changing relationship between text and image. In order to fully appreciate Bolter's insights about communicative representation, it seems that describing his take on technology as a mode of communication is in order. Bolter focuses much of his theorizing on technology and what he calls "the remediation of print." According to Bolter, "Remediation is a process of cultural competition between or among technologies" (Bolter, 2001, p. 23). He discusses the Greeks and Romans with their technology of using a papyrus roll for the purpose of alphabetic writing remediating the oral tradition of communication. The next major shift was during the Renaissance when the printed book as a new technology remediated the manuscript (Bolter, 2001, p. 24).

Bolter also states that within our lifetime, more specifically during the 1980s, computers came to be seen as a new writing technology. However, with the advent of this

new mode of communication, some issues have come along with it. Bolter writes, “Digital technology is turning out to be one of the more traumatic remediations in the history of Western writing. One reason is that digital technology changes the ‘look and feel’ of writing and reading” (Bolter, 2001, p. 24). He also claims that the computer has not only remediated our current writing technology, it is also used for popular consumption as a source of entertainment and that not only is verbal communication changing before our eyes, the visual aspect of communication is also in flux.

Bolter asserts that current theorists agree upon the notion that our cultural moment...what he claims we are currently in “the late age of print”- which is much more visual instead of having a predominantly linguistic focus (Bolter, 2001, p. 48). An interesting claim that Bolter makes regarding the relationship in the past between image and text is, “Since its invention, printing has placed the word effectively in control of the image” (Bolter, 2001, p. 48). However, he feels that this is no longer the case in our current culture as he postulates that what has become unstable is the relationship between the image and text (Bolter, 2001, p. 49). Magazines, newspapers and graphic arts in marketing exemplify this. He is yet another theorist who sees visual literacy as something that is profoundly changing the way in which we communicate.

Another extremely important contribution to the theoretical aspect of this literature review, also stressing profound changes in the nature of communication is from The New London Group. The New London Group has claimed that the times we are now in call for a new form of literacy, and they offer a theory of multiliteracies. Their theory emphasizes multimodal communication and in identifying what the students need to learn, they suggest a “metalanguage of multiliteracies based on the concept of ‘Design’”

(The New London Group, 1996, p. 69). The New London Group propose that any type of semiotic activity, including the creation or consumption of language based texts is an aspect of Design. Within their construct of Design, the three main elements include: Available Designs, Designing, and The Redesigned (The New London Group, 1996). In Designing, the Design Elements (Linguistic Design, Visual Design, Audio Design, Gestural Design, Spatial Design and Multimodal Design) are used as Available Designs and through the process of Redesigning, these Available Designs become transformed into new resources or newly Designed projects of their own (The New London Group, 1996).

In terms of creating a story using the technology of a computer, students Design a storyline as they engage in the process of creating a text. They may also use a variety of resources or Available Designs such as digital photos, videos, sound effects, voice etc., and through this process of Redesigning, they manipulate the Available Designs to create a multi-modal narrative.

The New London Group also indicate the possible range of relationships that are appropriate for student learning regarding their form of literacy pedagogy. Before delving into the particulars of “how” a pedagogy of multiliteracies might work, they share some of their views about the human mind in relation to society. They posit that human knowledge is embedded in cultural and social as well as material contexts, and that knowledge is gained from “collaborative interactions” within a diverse community (The New London Group, 1996, p. 75). The New London Group asserts that their views about learning and society lead them to the conclusion that pedagogy is a complex union of four components: Situated Practice, Overt Instruction, Critical Framing, and Transformed

Practice. “The four components of pedagogy we propose here do not compose a linear hierarchy, nor do they represent stages. Rather they are components that are related in complex ways” (The New London Group, 1996, p. 76). More elaboration regarding these four components of pedagogy can be found a few pages later in this review of literature when Chandler-Olcott & Mahar’s study, which uses these components and New London Group’s theoretical frame of multiliteracies, is reviewed.

Two years after the theory of multiliteracies was introduced, Allen Luke, one of the New London Group members, teamed up with John Elkins and as editors of *Journal of Adolescent & Adult Literacy*, they too address literacy education in our changing world. Elkins & Luke also frame their assertions with a semiotic theory that addresses multimodality, and they stress the fact that the “New Times” we are in are changing our definitions of literacy (Elkins & Luke, 1999). Luke and Elkins assert that literacy in the form of print still does matter but because of the change in media and text “landscapes” individual and community identities are also changing in relation to the “New Times”. I found this editorial/article which appeared in the *Journal of Adolescent & Adult Literacy* remarkable in the way the authors were actually addressing educators to begin to take part in this changing notion of literacy. They went on to identify specific changes in their journal, like adding new columns that focus on Internet and online literacies, to help usher in these “New Times”. I find the last two sentences of this article sum up their vision:

The word and the book are here to stay, but they are being transformed in relation to the new technologies, new cultures, and new forms of life. We invite you to join with us at JAAL to take up the task of reinventing literacy and literacy education for the next century. (Luke & Elkins, 1998, p. 7)

New technologies do help to bring about changes in culture or “new cultures” and new ways of life are created through this process. Text messaging and the way people abbreviate and invent new spellings of words is something that comes to mind with this notion of “new forms of life.” Will texting ever affect the way we spell words outside of text messaging? The possible implications that this “new culture” of text message communication has on literacy as we know it are immeasurable.

The next important question to ask is: How is the task of reinventing literacy education faring both with our schools and in digital realms outside of the classroom? In order to begin to address this question, in this last part of the theoretical implications section I will look at two different studies that relate to the multimodal use of text and image or the digital hybridity of text and image in education. The first study takes place within the classroom and addresses the impact of using social semiotics as a framework in fourth and fifth grade classrooms. The second study looks at the literacy practices of adolescent girls’ that are shaped by their use of digital technologies outside of the classroom.

2.4.1 Literacy Studies

Cowan & Albers’ study takes place within the classroom, and a pertinent question to ask here is: What happens in a classroom when literacy instruction grounds itself with social semiotics as a framework? In addressing this question, it seems that defining social semiotics is a reasonable place to start this discussion. As defined by Cowan & Albers, “Social semiotics is a study of sign systems or communication systems including art, music, drama, mathematics, and written and oral language that are socially located within

the signmaker's environment and experiences" (Cowan & Albers, 2006, p. 125). Cowan & Albers, who are two university professors acting as teacher-researchers in fourth and fifth grade classrooms, argue that moving beyond a narrow definition of literacy, e.g. "the ability to read, write, and understand print-based texts" (Cowan & Albers, 2006, p. 124) is essential to today's literacy instruction.

They feel that the definition of literacy should include the involvement with an assortment of communication or semiotic systems; when the semiotic modes of drama, music and the visual arts are paired with language, Cowan & Albers assert that the outcomes are far greater and more powerful than with language alone (Cowan & Albers, 2006). They believe that this inclusion of other semiotic systems into the language arts curriculum is essential as it enables students to obtain new and different perspectives of their worlds.

Cowan & Albers feel that in order for their students to learn to write well it is vital that they be in a context in which writing is positioned with various other communication systems. In their classroom, they have identified three elements that aid in the composition process. The first element is that the students learn how to write from their own personal experiences. The second is that they offer a choice in writing topics, and the third is that the teachers present composing using a perspective that is grounded in semiotics. The authors also indicate that their students' language processing is enhanced when the computer is used as a tool in the writing process and that the use of the keyboard enables them to think faster than when they compose on paper. As thought processes are intertwined with other creative modes "students become more actively

engaged in the writing process, imagery increases, and so does the students' ability to synthesize and analyze information" (Cowan & Albers, 2006, p. 127).

Cowan & Albers also claim that their assertion, that semiotic meaning construction within the English language arts curriculum is essential, is also shared with influential educational establishments like IRA (International Reading Association) and NCTE (National Council of Teachers of English). These two important organizations postulate in their 1996 conferences that integrating visual literacy with the preexisting knowledge of literacy will allow students to critically analyze and understand today's texts (Cowan & Albers, 2006, p. 125).

The second literacy study was conducted by Chandler-Olcott & Mahar. This 18 month long study looks at the online literacy practices of two seventh grade girls that took place beyond the academic setting. The two authors, one a university-based researcher and the other a teacher researcher, posited that the rationale for this study was in part due to the lack of research regarding how the construction of gender may influence and be influenced by literacy practices and the lack of research on online literacy practices outside of school. Chandler-Olcott & Mahar used the New London Group's theory of multiliteracies (New London Group, 1996) and activity theory (Engestrom & Miettinen, 1999; Cole, 1996) as theoretical frames for their study which is discussed in, " 'Tech-savviness' meets multiliteracies: Exploring adolescent girls' technology-mediated literacy practices."

From the New London Group, the constructs of Design, Available Design and the Redesigned (as discussed and defined earlier in this paper) were applied to their data as

well as the four components of New London Group's idea of literacy pedagogy that include:

- Situated Practice, based on the world of learners' Designed and Designing experiences
- Overt Instruction, through which students shape for themselves an explicit metalanguage of Design
- Critical Framing, which relates meaning to their social contexts and purposes
- Transformed Practice, in which students transfer and recreate Designs of meaning from one context to another (New London Group, 1996, p. 83)

The study took place in a suburban middle school in Upstate New York where more than 95% of the student body was made up of European Americans and less than 10% of the students qualified for free or reduced lunch (Chandler-Olcott & Mahar, 2003). Chandler-Olcott, the university researcher, spent one to two days a week in Mahar's seventh grade classes and study halls taking fieldnotes, interviewing students and teachers, collecting artifacts and making observations about the students' uses of technology. Chandler-Olcott also made home visits of the two focal students and their families (Chandler-Olcott & Mahar, 2003). Copies of the Websites the girls visited, and mailing list messages and e-mails between Chandler-Olcott and the two girls were also sources of data that were collected.

The study began with 12 middle school females, and then the researchers narrowed their focus down to two seventh grade girls. Rhiannon and Eileen were chosen as focal students because of their frequent use of the Internet and their online literacy

practices that took place beyond the academic setting (Chandler-Olcott & Mahar, 2003). Both girls shared a passion for Japanese animation and both used their online resources but in different ways to establish themselves as fans of this genre. Rhiannon enjoyed creating WebPages and writing fanfictions (stories based popular media characters), while Eileen spent time creating fan art and was part of online mailing list communities that supported up and coming artists like herself (Chandler-Olcott & Mahar, 2003).

What really impressed me about the data analysis in this study was how directly the researchers used their constructs and applied it to the data. There are tables that identify the Visual, Gestural, Spatial, Audio and Linguistic aspects (all constructs of New London Group's Design) of Rhiannon's WebPages (Chandler-Olcott & Mahar, 2003, p. 369) and charts that show the tools, text genres, identities, divisions of labor and codes found in Eileen's anime mailing list activities (Chandler-Olcott & Mahar, 2003, p. 368). They also have a chart identifying the way they coded Eileen's art work using the multiliteracies pedagogical framework of Situated Practice, Overt Instruction, Critical Framing, and Transformed Practice (Chandler-Olcott & Mahar, 2003, p. 370).

Two important themes that surfaced from their data analysis include (1.) the importance of popular culture in the form of multimedia texts in the two girls' use of digital technology Designing practices and (2.) the profound effects that online relationships had in teaching or mentoring the two girls to become Designers. Not only did their immersion in online communities enabled them to investigate and define their gender identities and it also helped them to "create richer and more satisfying social lives than they had in real time" (Chandler-Olcott & Mahar, 2003, p. 397).

2.5 Concluding Remarks

“Already, then, *design* means to articulate image and word”

(Jewett & Kress, 2003, p. 60).

In my quest for locating scholarly literature about the use of computer technology in education with a focus on digital hybridity of text and image, I have made some remarkable discoveries. Not only have I found a wealth of information about semiotics, multi-modal literacies, Internet security issues, teacher training and the digital divide, but I have also uncovered an extremely important conversation about the changing nature of literacy in our world.

I agree with Luke & Elkins, The New London Group, Roche-Smith and other scholars who are asserting the fact that a new definition for literacy is needed (Luke & Elkins, 1998; The New London Group, 1996; Roche-Smith, 2004). A new definition for literacy should include learning how to read and write alphabetic texts, but it also needs to include the use and understanding of other multimodal aspects of communication. I think that visual literacy or the ability to interpret visual messages accurately and to create such messages and media literacy or the ability to understand, analyze, evaluate and create media are vital aspects of interpreting and communicating in our world that should now be part of how we define literacy.

Our students should be taught the skills they need to be sign-makers (Kress & van Leeuwen, 1996) or Designers (The New London Group, 1996) who can use words, images and other modes of communication effectively. They also need an understanding

and a competence in the use of instructional technologies which are important aspects of the new literacies found in today's changing world. These skills are vital to students as they become competent, skilled and knowledgeable workers of the future (The New London Group, 1996).

Some questions that have emerged from this literature review and some possible inquiries for further research include: How can we as educators best assist our students in gaining the knowledge and skills needed in these "New Times"? How will the use and understanding of these new literacies alter communication and our views of literacy? What will happen regarding the hybridity of text and image; will our society become one that favors the use of images instead of words as its primary mode of communication?

It does seem that although I have found many insights into the changing nature of literacy as the transformative and fluctuating relationship of digital hybridity of text and image alter our modes of communication, I am also left with many questions to ponder. I wonder what communication trends will be like in the future as the social fabric of society in this digital age seems to be transforming literacy's definitions, and I also wonder how these new definitions of literacy might also change the social fabric of our society.

CHAPTER 3

RESEARCH DESIGN & METHODOLOGY

3.1 Introduction

The purpose of this study was to document how introducing a Digital Storytelling Program (DSP) in an urban grade two classroom impacted the students as literacy learners, how they positioned themselves as authors and also to describe and contemplate how the students used images to represent their alphabetic texts. The study was conducted beginning in the fall of 2006 and continued through the spring of 2007. This was my third year as a university researcher in this classroom with the same teacher; however, it was the first year working both as a researcher and as a technology mentor.

The goal of the Digital Storytelling Program was to have the students create digital stories through the implementation of cooperative writing groups where each group assumed the tasks of writing and illustrating a story. The stories then became digitalized by turning their written texts into word processed texts as the students became familiar with word processing on a computer. Their hand drawn images were also digitalized by scanning them. The next step was to teach the students how to incorporate both text and image on a computer screen so that we could prepare the stories to be turned into digital books. Dedication pages were created by each group as were title pages. The final page of each book included digital images of the authors. The images of the author were taken by me over the course of the study; however, during the course of the DSP, the students also learned how to take digital pictures so that they could also gain this skill and better understand how a digital camera works.

My own goals were to document the DSP process so that I could 1. Gain insight into the social aspects of literacy learning (2.) Contemplate and answer my research questions and (3.) Add to the small but growing body of literature that focuses on literacy learning and hands-on computer technology.

Although there is a considerable amount of literature that focuses on elementary students writing and on the writing workshop itself, there is a gap in the literature regarding children writing cooperatively and on students co-authoring single texts. There is also a gap in the literature concerning actual studies where researchers are studying and documenting how using hands-on digital technology in the language arts classroom impacts literacy learning. Therefore, this study is an important contribution as it helps to fill in gaps in the existing scholarly literature.

3.2 The Setting

When someone enters Room 10, a classroom that is brimming with interesting artifacts like books, manipulatives, art supplies, and science equipment, it is apparent that this is a busy and interactive classroom. There are educational posters that cover much of the walls, as well as a word wall that is immediately to your right upon entering the room that displays a wide range of genres of words arranged alphabetically. A large brightly colored cloth Venn diagram holding words about the similarities and differences of certain chocolate bars is another artifact that shows some of the recent activities that the students have engaged in. In the front of the classroom, a flip chart that lures the onlooker into discovering what the students had written about on that day is placed on the rug where the children often gather in a circle for their meetings. Instead of desks, there are rows of rectangular tables where two students can sit and a few round tables near the

windows that can accommodate up to four. This physical configuration of the classroom (See Table 3.1) and the artifacts within demonstrate that the classroom teacher has created a learning environment that appeals to children. It appears that much learning goes on here on many different levels.

Table 3.1: Map of Room 10

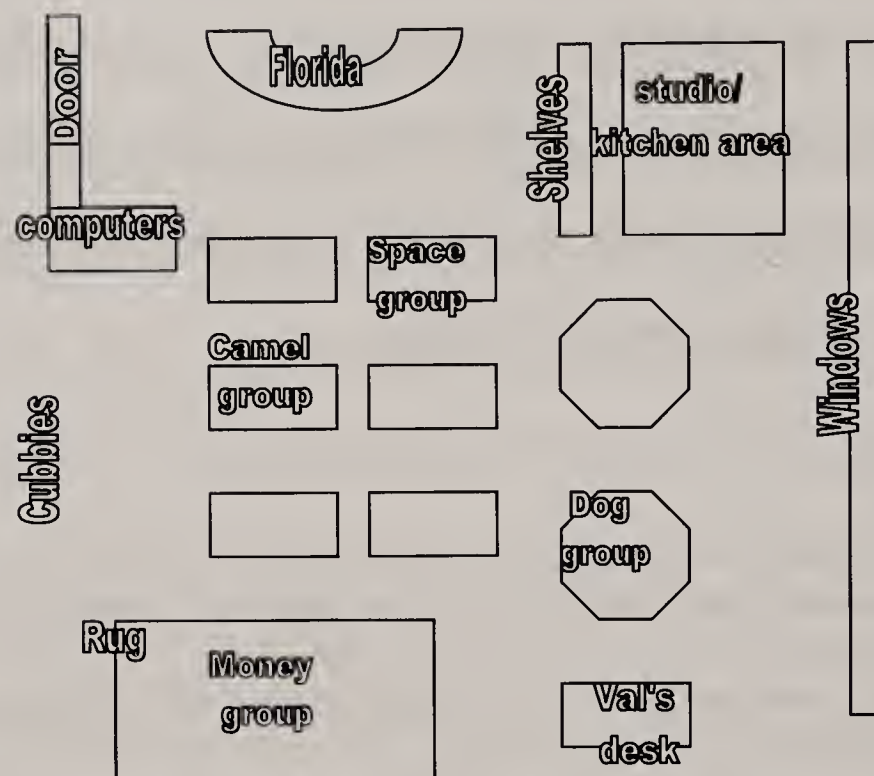


Table 3.1 is map of Room 10 that shows the basic classroom layout including the crescent table, 6 rectangular tables, two round tables (octagon shapes) and where each writing group usually sat.

The school is one of many K-5 elementary schools in this urban school district. It is a long, one story brick building. There are a few large old oak trees in front of the school and in the spring many varieties of flowers accentuate the sign that holds the school's name. There is also a small garden to the left of the front entrance that was a

community project from two years ago. Behind the school are acres of green grass that serve as playing fields and baseball diamonds and a smattering of trees here and there.

The school is situated among apartment buildings, duplexes and some single family homes. Down the street, less than half a block from the school are shopping malls, gas stations, restaurants and other stores. All of the students who attend this school come from the surrounding neighborhood because of a redistricting plan that took place during the summer of 2005 (Associated Press, 2005). As each school within the district now serves only those students who live near by, students are for the most part within walking distance.

The district's redistricting plan was put into place in order to save money, and residents who supported the plan felt that it would give the students more time to participate in tutoring and after school activities, instead of spending all that time on the bus (Associated Press, 2005). Others were worried that some schools would no longer be racially balanced, but because of the dramatic change in demographics, the state law that insists on schools being balanced racially no longer applied (Associated Press, 2005). "...The second largest public school system in the state, has been busing nearly all of its students since agreeing to a desegregation plan in the 1970s. But enrollment in the public schools has since gone from about two-thirds white to more than two-thirds minority" (Associated Press, May 19, 2005).

While this neighborhood is not quite as crime ridden as the downtown area of the city, it is also not the safest neighborhood. There have been crimes such as murders, bank robberies and arson within a few blocks of the school over the last year (Pplw.com (a pseudonym), 2006- 2007). Although it is not the state's largest city, for the past few

years, the city where the school resides has been labeled the most violent city in the state. Also, according to Pplw.com, a local news station and web site, violent crimes touch the lives of one in every fifty-four people in this city (Pplw.com, Oct. 18, 2005).

Although the city itself can be a dangerous place, the school offers a safe haven to its many K-5 students. The building itself is locked during the school day and is equipped with a security system. Also, visitors are screened on a video monitor before entering the school through the front doors which are located right by the secretaries and the principal's office.

Once the students and staff are within the walls of their building, it seems that they are relaxed and somewhat oblivious to the turbulent and sometimes troubled world that exists outside. In the long hallways inside, students appear happy and well adjusted. On many occasions, I have had students who don't even know me smile and say hi. They even sometimes politely offer to hold a door open for me as I lug my videotaping equipment down the hall.

3.3 The Participants

3.3.1 The Students

The 17 students from Room 10 who participated in this study ranged from age 7 – 9 and came from a wide variety of ethnic backgrounds. Eight were Hispanic, five were Black (four African American and one Jamaican), three were racially mixed (African American /White) and one was White. Of the participants, five were female and twelve were male. The one White male participant dropped out of the study half way through because his mother decided to home school him, and another male of Jamaican decent

joined the study around the same time the other male left. There were four other students in the class, but because they were pulled out during most of the day, they were not part of this project.

For the students who did participate in this study, a letter of informed consent (See Appendix A) and an introductory letter which introduced the researcher and the study (See Appendix B) were sent to their parents and/or legal guardians. The introductory letter described the nature of the study and the letter of informed consent articulated the participants rights should they choose to participate. The parents and/or guardians and the students were asked to sign the consent letter and return them to me via their classroom teacher. They were also asked to contact the researcher if they had any questions at all regarding the study. The letter of informed consent and the introductory letter were both approved by the Human Subjects Review Committee at the University of Massachusetts, Amherst, as well as the principal of the participating school.

According to their classroom teacher, all of the students who participated in this study came from lower class and working class homes, and they all lived below the poverty level. Also, according to the school's principal, over 80 percent of the school's population receives free or reduced school lunch. From the school's district official website, the demographics of the school district are as follows:

Demographically, 48% of *Winterdale's* (a pseudonym) public school students are identified as Latino, 26% African-American, 20% White, 4% mixed race, and 2% Asian. The student body is also characterized by significant immigration; 11% of students are limited in English proficiency and are enrolled in English Language Learning programs. More than 75% of all public school students in [this city] live in households at or below the federal poverty line.
(<http://www.pps.winterdale.ne.us> (a pseudonym), 2006)

According to the classroom teacher, many of the students in her class functioned at well below grade level in reading and writing. Another relevant fact is that out of her whole class of twenty students, only two of them have not been labeled with Attention Deficit Disorder (ADD), Oppositional Defiant Disorder (ODD) or Post Traumatic Stress Disorder (PTSD). Many of the students even have more than one diagnosed behavioral condition. However, regardless of their reading and writing levels and their diagnosed behavioral disorders, they were a likable group of children who got along well and had much respect for their teacher.

3.3.2 Focal Students

In the DSP, there were four cooperative writing groups and one student who chose to work independently. The writing group's names evolved out of the stories and story titles that these groups collaboratively wrote. "The Camel Group" was made up of four students, three males and a female, and the "Dogs in Space Group" (or "Dogs Group") consisted of three males. Both of these groups chose to write and illustrate fictional stories. The "Money Group" had five members, four males and a female, and the "Space Group" contained five students, two females and three males. The male who was pulled out of the class to be home schooled and the male that joined the class midway through the project were both in the "Space Group." These two groups chose to write and illustrate texts that were nonfiction. The student who wrote and illustrated a story independently started out in the "Dogs in Space Group," but because she really wanted to write about Florida was allowed to work alone. Her story is a personal narrative.

Out of these five writing groups and seventeen participants, I chose two focal students. One of the focal students, Amy (a pseudonym), worked cooperatively in the

Camel Group and the other, Mike (a pseudonym), worked cooperatively in the Dogs in Space Group. In my discussion and analysis of these two focal students, the other group members, five other students, will also play important roles in ethnographic narrative that unfolds.

Amy was very pretty girl of Hispanic descent who had long, dark hair, an olive complexion and big brown eyes. She was usually on-task and was quite eager to please her teacher. Amy loved to write stories in and out of class. She would often illustrate her stories and seemed to be very proud of her literary accomplishments. Amy liked to be a leader and could be thoughtful and caring with her peers. However, she could also be quite bossy, didn't always want to share and could be obstinate if she did not get her way. I chose Amy as a focal student primarily because of her passion for writing and also because of her dual nature when it came to interacting with other students.

Amy was an active and outspoken member of the Camel Group. The other group members were Marc, Foster and Angel. Marc (a pseudonym) was a quiet and somewhat shy Hispanic boy who strove to be an on-task and focused group member. Foster (a pseudonym), a tall, handsome and very dark skinned African American, was usually on-task, but sometimes had an attitude because he felt that Amy was trying to tell him what to do. Angel (a pseudonym) was the clown of the group. He was of Hispanic descent and often engaged in distracting and off-task behavior (e.g. like trying to pretend he was conducting a magic show) when the group was attempting to cooperatively pen a story.

Mike was also of Hispanic descent. He had short, dark brown hair, medium to light skin tone, brown eyes and a big smile. He liked Superheroes and many of his shirts showcased this affinity; he often wore Batman and Spiderman shirts. When working in

his writing group, Mike would sometimes sing rhyming songs, and often these songs seemed “contagious” as other students would also sing along. Mike almost always participated eagerly in classroom discussions; his hand would often be the first one raised in his effort to contribute and he listened well to his teacher. He was also a talented artist and took great care in creating very detailed illustrations. Around adults, Mike could be rather quiet and somewhat shy at first. With his peers, Mike was sometimes silly, liked to sing rhyming songs about his classmates and could be quite a ham in front of the camera. I chose Mike as a focal student because of his artistic abilities and because of the way he brought his passion for media, including Superheroes and song, into his class work.

Mike had an interesting role as a member of the Dogs in Space Group. He worked next to his group members and wrote on the same topic, but actually engaged in a type of “parallel play” as he ended up writing his own story while the other two boys cooperatively wrote another one. (On editing day, we ended up deciding to call Mike’s story Chapter Two and the other boys’ Chapter One; thus joining the two stories.) The other two members of the Dog Group were Tony and Raul. Tony had many sides to him and played a wide range of roles from engaged artist, to group bully, to my trusted friend and helper in breaking down the media equipment. He came from a racially mixed background of African American and White parents. Raul was the intellectual of the group. He was of Hispanic descent and had a real passion for science, knowledge and wanted very much to someday become a scientist.

3.3.3 The Teacher

Valerie (who chose to not have a pseudonym) has been teaching second grade for over twenty years. She is in her mid-forties and is of African American descent. Valerie

grew up in the same city where she currently teaches and was a student in the same district. Not only does she hold a Master's of Education Degree but she has also been part of a research team for over three years that includes another public school teacher and two university researchers.

Valerie has a style of teaching that could be considered a "warm demander" (Ladson-Billings, 1994) as she lets her students know that she values their voices and cares about them, but she also holds them accountable and has high expectations. On several occasions, Valerie has stated, "I want my students to know that what they have to say is important." Bringing much enthusiasm and excitement to the classroom to share with her students each day, Valerie is an inspiring teacher. Valerie is effective in handling a classroom of students with a wide range of abilities. Her hands-on approach to teaching literacy actively engages students from wide range of learning abilities, and I have seen her turn even the most off-task and at-risk-students into capable and engaged students.

3.3.4 The Researcher

My career as a doctoral candidate in the Language, Literacy and Culture Program in the University of Massachusetts' School of Education's Department of Teacher Education and Curriculum Studies spanned from 2004 - 2009. During each of these years through 2008, I was employed as a research or project assistant for the University. As a middle-aged, middle-class, White American of European descent, I have worked in the field of education for over nine years. However, when I entered Room 10 back in 2004, it was my first educational experience in a multi-cultural setting. Before entering the doctoral program at UMass, Amherst, I taught middle school language arts and social studies to a population of predominantly White students for four years. Prior to that, I

was an instructional aide for two years in classrooms at grade levels one, two, four, five and six (also with a population of mainly White students). During the time of my doctoral work, I was also employed working as a Learning Specialist and an Instructor at a local Community College.

3.4 Overall Approach and Research Design:

Aspects of the post-structural theoretical perspective such as the notion that “identity is shifting and multiple, something people are continually constructing and reconstructing in their encounters with each other and the world” (Cameron, 2001, p. 170) assisted in guiding this ethnographic study and in the use of qualitative methodology employed (Denzin & Lincoln, 2003; Kamberelis & Dimitriadis, 2005). The study utilized an ethnographic approach in both data collection and in field research as the primary methodology used for this “strategic ethnography” (Spradley, 1980) was participant observation. The ethnographic analysis of the study provides insight into the culture of an urban second grade classroom. According to Spradley, ethnographic analysis is defined “as a search for the parts of a culture, the relationship among the parts, and their relationship to the whole” (Spradley, 1980, p. 116). Using the ethnographic approach and employing ethnographic analysis, this study documents (1.) the introduction of digital media and computer technology in the form of a digital storytelling program and (2.) how this impacted the literacy methodology of these students.

For this year long study, I first entered Room 10 as a participant observer. For several months I came in on Friday mornings and observed the students during their literacy block and took fieldnotes (Emerson et al., 1995). I felt that it was very important that the students get to know me, and get used to me and my presence before I introduced

all of the technological equipment like digital cameras, video cameras and computers. I wanted the students to feel as comfortable as possible with me and the data collection equipment so that my relationships with the students would be as natural and free from inhibitions as possible. As Caleb Peterson states, “While technology is a powerful tool for engaging at-risk students, it is equally important [*for the researcher*] to build purposeful relationships with students so they may become empowered to effectively use literacy” (Peterson, 2005, p. 61).

After two months of observation during my classroom visits, I introduced my digital camera and began to take photographs of the students. I took individual student pictures as well as pictures of the students engaged in classroom activities. I felt that it was crucial to begin slowly with the addition of technology in order to gain the trust of the students. Therefore, I introduced each piece of equipment individually before beginning the actual implementation of the digital storytelling program.

In January of 2007, I began to introduce the technology driven study that the classroom teacher and I agreed upon. It was at this point that I introduced the digital camcorder and the VHS video cameras. During the literacy mini-lessons that the students had on the rug up front, I would video tape the class as well as taking digital photos. Once the class broke up into their writing groups, I would set up two other video cameras and videotape several writing groups as well as the students who were working at the computers. Having three videos cameras rolling during most of the classroom observations enabled me to collect a huge reservoir of data. This video footage has provided me with a very thick record of the conversations and interactions between the students as well as between the students and the teacher/researchers. Many of the

videotaped conversations have been transcribed and have aided tremendously in the ongoing recursive analysis of data.

Each Friday, after participating in the instructional activities of our project and dealing with the research aspects of data collection, like jotting down fieldnotes, taking care of all of the video cameras and digital cameras and collecting student work, I would get to my typewriter as quickly as possible and expand on my fieldnotes, reflecting on all that had transpired during the day. Each week I also took all the tapes from the three video cameras and dubbed the digital and VHS video recordings onto a VHS tape so I have each day's video on one tape that can be viewed from my TV.

I created a working chart to represent all of the data collected so far, in an attempt to keep things as organized as possible, and updated that either weekly or bi-weekly. I also purchased myself a scanner, so that I could make digital copies of all of the student work. Initially, I planned on using it primarily for the hand drawn illustrations, but then decided to digitalize the alphabetic texts as well.

Data collected included: fieldnotes, photographs, video footage, demographic information, news stories from the local community, student artifacts including digital scanned reproductions of all phases of their texts and images and a computer parts quiz and quiz grades, student surveys, and a survey about home computer use. Data collection from Valerie, the classroom teacher, included: text messages, e-mails, a book of thanks that she and the students put together for me at the end of the project, chocolate flowers that were also part of their "thank you" to me, quiz grades from a computer parts quiz, as well as ongoing verbal information regarding students' abilities and issues. For the fieldnotes from every session, I used very detailed or "thick description" (Geertz, 1973)

as well as including an ongoing journal that contained "observers comments." The photographs of the students included: individual photos with their names Photoshopped on them, photos of the students engaged in their cooperative storytelling groups, photos of the students at circle time and photos of the students and their teacher that were taken by the students. The video footage contained over fifty hours of footage including both digital and VHS tapes and it focused on: students at circle time, students working in their cooperative groups, student surveys, students working on the two classroom computers, students at their desks being instructed by their teacher, and parent night when the students presented their finished digital stories. Specific segments of the video footage were transcribed so that actual vignettes of student, teacher and researcher discourse can be shared and analyzed.

As I gathered my data and began the process of analysis, I strove to use Carspecken's model of "five stages for critical qualitative research" (1996, p. 43). In "compiling my primary record" as the data was being collected, I began to analyze the data in an ongoing manner performing a "preliminary reconstructive analysis." The next stage was "dialogical data generation" where I began the process of verbally surveying the students. According to Carspecken, at this point, "...the researcher ceases to be the only voice allowed in building up a primary record" (1996, p. 42). In the next stage of "discovering system relations" I referred to the ongoing collection of news stories from the community that I had collected for the last few years and began to examine the relationships between my research site and the local community. Finally, in the last stage of "using system relations to explain findings" I strove to represent the culture being

studied in terms of the larger society and attempted to relate my findings using the point of view of an “insider.”

Once all the data was collected, and a preliminary reconstructive analysis had been performed, I began the task of re-reviewing everything. I took more notes and continued to analyze my findings. I used the computer program called HyperResearch to aid in coding my fieldnotes as I began to look for more themes and patterns emerging in the data. I also performed a partial domain analysis (Spradley, 1980) in order to better understand the many components of my study and the emerging patterns of behavior. I also performed a componential analysis and a taxonomic analysis (Spradley, 1980) on specific aspects of certain domains. All of these tasks aided my analysis in hopes of obtaining “the goal of ethnography” (Spradley, 1980) which according to Malinowski is, “to grasp the native’s point of view, his [sic] relation to life, to realize *his* [sic] vision of *his*[sic] world” (1922, p. 25).

3.5 Curriculum Design

Friday was deemed “Digital Friday” because it was the day of the week that the Digital Storytelling Project took place. This took place from 9:30 am until approximately 11:00 am, during the literacy block. On most mornings when I arrived, Valerie would be gathering her students up front, having them sit in a circle on the rug. This is where the mini-lesson in literacy would happen for ten to twenty minutes before having the students break up into their writing groups.

The initial plan was to implement a Digital Storytelling Program where the students create stories and then use a word processing program to type up the stories. Then using a variety of forms of imagery, such as hand drawn pictures that were scanned,

paint shop images and digital photographs, the students would illustrate their stories. By doing this they would learn some of the ways that images can be digitalized or created in a digital format and used in the word processing application to add imagery to their alphabetic texts. Teaching the students how to incorporate image and text on the same page and giving them experience in creating graphic layouts on a computer screen is another important skill that was made available to them by participating in this storytelling program.

Originally, I had envisioned each student writing his or her own story and thought that the topic of friendship would be a good option. However, after much discussion and planning with the classroom teacher and because so many of the students were writing and reading below grade level, we made the decision to have them work together in groups of about four students. We gave all of the groups the option of focusing their writing on friendship, but ultimately decided to let each group decide upon their own topic instead of choosing a topic for them. The cooperative learning groups were chosen by their teacher, Valerie. When the groups met for the first time, their initial task was to choose a topic. In order to do this, each group brainstormed a list of possible topics for their Digital Stories. Once a list of five or six topics was created, the students then voted to see which topic they would use. Two of the groups chose the nonfiction topics of space and money. The other two groups chose fictional topics: camels making friends and dogs in space. One female student, who was in the Dogs in Space Group, wasn't happy and wanted to write about her trip to Florida. Valerie made the decision that she could work alone.

During the proceeding Digital Storytelling (DS) class period, each group was asked to create a simple outline (See Appendix D) of their story. Valerie provided the nonfiction groups with books on their chosen topics to help generate ideas. Then for the next few class periods, we followed a writing workshop format where the students were free to discuss their stories with each other and write. Valerie worked with the Money Group because she felt that they wouldn't be able to do it without support.

Once the initial hand scribed stories were done, I introduced the students to the computers and the word processing application, Word. Each group had an allotted period of time during each DS class period to work on typing up their stories. While some of the group members typed, the other students were asked to begin illustrating their stories using either crayons or colored pencils and paper. For students who had finished an illustration, I supplied a digital camera and one student at a time could walk around the classroom and take digital photos of other students engaged in their activities. Valerie conferenced with the Space Group and I met with the girl who chose to write independently, the Dogs in Space Group and the Camel Group to conference with them and discuss possible revisions that might be needed.

When a group finished illustrating and typing their story, I then gave them miniature copies of their scanned illustrations and copies of each sentence in their story. They were then asked to decide which picture went best with each sentence or group of sentences, and they literally cut and pasted using scissors and glue to pair up sentences with images. The students really seemed fascinated with their resized and now black and white images, and each group worked extremely well together as they cooperatively decided which picture went with what alphabetic text. After doing the literal cutting and

pasting, I then showed them how to cut and paste on the computer and they helped arrange the layout of the pages of their upcoming books. In all of the time spent in this classroom over the last three years, I have never seen the students exhibit such intense and focused attention as I did in this phase of the DSP when the students were given the opportunity to learn how to cut, paste and resize their images on the computer.

Creating a dedication page and deciding on which images would look best on each book's cover were two of the final steps that we engaged in before having the "manuscripts" ready to go to the copy shop. Once the books were finally ready to go to be duplicated, I went to each group and asked each student what color they would like for the front and back page of the book that would be their own to keep. With five different manuscripts, one for each group's book, a list of how many books to be printed from each group and a list of colors that each student chose for their cover, I was almost ready to get the books printed. After a conversation with the copy shop, I was told that if I turned the manuscript files into PDFs (portable document files), that the quality of the books, especially the images, would be much greater than if we merely had them copied on the copy machine. So I turned the saved Word files into PDFs, burned them all onto a disc and dropped it off at the copy shop with my lists of how many of each book and what colors the covers were to be.

Once all of the books had been duplicated and bound, we had a class period where all of the students gathered in a circle so that they could present their Digital Stories to one another. Each group came up to the front of the room to the rug where we were congregating and then each student individually stopped by where I was sitting and got to pick up their newly published book. The Camel Group's books had covers that were

yellow, bright pink and orange. The Dogs in Space Group had all chosen a deep red for their covers and the Space Group had covers that were dark purple, blue and turquoise. The Money Group had light green and dark green covers and the single writer had pastel blue for her cover.

The students were scattered about the rug, chatting animatedly as they eagerly leafed through their books. With all of the colors they had chosen for their covers, it was like a rainbow of colors that illuminated the scene. We then went around the circle as each group presented their books. Individual students were instructed by Val to read from one page and then share that page's illustration with the rest of the class. After all the members of a group were done, the floor was opened for questions and comments. Many of the questions and comments were about the illustrations and everyone seemed to want to know: Who drew the picture on the cover? The students and the classroom teacher couldn't believe how beautifully the books turned out. As Valerie said, they came out "Fan-tast-ic!" (Fieldnotes, 5/18/2007)

Valerie and I also planned and held a Parents' Night so that the students could share their Digital Stories with their families (See Appendix C). Both of these events were videotaped so that the teachers and students' responses and comments were properly documented.

At the request of Valerie, we asked each student to pay \$2.50 for their book to cover the cost of printing. I was happy to buy them for the class, but Valerie wanted the books to be paid for because she felt that this would make the parents more appreciative of their worth. While many of the students did pay for their books and some even ordered multiple copies, some of the students were unable to get any money from their parents,

possibly due to their socioeconomic situation. In these cases, I ended up covering the costs, and Val worked out a barter system in which the students performed some work for her in the classroom in exchange for the books.

3.6 Student Surveys

Regarding the dialogical data generation aspect of the research process, I also planned and implemented student surveys. I conducted surveys in the middle of the process of creating their Digital Storybooks and then again at the end when the books were finished. For this type of data collection, I used the digital video camera and interviewed some of the students individually and some in their writing groups. In the group surveys, I didn't want all of the students speaking at once so decided to use a magic marker as an instrument that allowed only the holder of it to speak. I posed one question at a time, and then the student on the right end would speak first and then pass the marker to the next student who was then allowed to share his or her thoughts. If a question needed repeating, they just needed to ask. However, there were only a few times that I needed to restate my questions.

Table 3.2: Survey One Questions

Survey One Questions:
Are you enjoying this project?
What aspects do you like the best? (E.g. Writing, illustrating, computer, photos...)
What have you learned?
How do you feel about working in a group?
Is there anything hard about group work?
What else would you like to learn on the computer?
What makes this exciting for you?
What is it about filming that you like?
Do you have any suggestions to make it better?

I wasn't certain if the students could handle this type of group survey activity but they did a wonderful job; I was very pleased with how well they were able to respect each other's time to speak. I also conducted individual and group surveys with some students later on at the end of the project once the digital storybooks were printed. Responses to the survey questions will be discussed in greater detail and analyzed in Chapter 4. The following is the second set of interview questions:

Table 3.3: Survey Two Questions

Survey Two Questions:
What do you think about your book?
What was your favorite part of the process of creating it? Why?
Who did you enjoy working with?
How do you feel about becoming a student who knows about technology/ computers?
How do you feel about using computers?
Do you think technology should be part of all language arts classrooms? If so, why?

3.7 Limitations

One of the main limitations of this study is that it might be difficult to generalize the findings because the research questions and the hypotheses that were generated are from a specific context set in a specific time and place. The Digital Storytelling Program that was implemented and documented focused on a group of seventeen students from one urban classroom. As I have chosen to focus my analysis on two focal students within the context of their writing groups, I have not gone into great detail with regard to all of the children in this study. With the time considerations involved in this type of study, it

would have been impossible to focus my analysis on all of the students or to accurately recreate the DSP in its entirety.

As a researcher acting as a participant observer in a culture other than my own, it is possible that my presence had the “Hawthorne effect” where “the mere presence of observers greatly affected the way in which their subjects behaved” (Carspecken, 1996, p. 52). As I was acting both as researcher and technology mentor, my actions in mentoring the students and the teacher were an integral aspect of this program and undoubtedly had an affect on participant behavior during certain aspects of documentation.

Also, researcher bias and the inherent subjectivity that goes along with any research project played a part in this study. Although I attempted to be as objective as possible in my documentation of the participants and the DSP process, it is impossible to eliminate all prior values and possible biases. Therefore, at the beginning of the study, I tried to name and understand my beliefs, values, and biases so that I could enter this project understanding that this subjectivity might affect my research questions, my assessments, and the process of documentation.

3.8 Trustworthiness

In attempting to make my claims and hypotheses as valid and trustworthy as possible, I used the triangulation of data sources in order to “improve the quality of data and the accuracy of ethnographic findings” (Fetterman, 1989, p. 91). Triangulation or the use of gathering data from multiple sources (Carspecken, 1996; Creswell, 1998) was employed in an effort to prevent errors and to gather as rich and as “thick” (Geertz, 1973) of a primary record as possible. Data sources for this study included: fieldnotes, digital

photographs, digital and VHS video footage, transcriptions of student and teacher discourse, news stories and demographics from the local community as well as student artifacts.

Other techniques I employed during this study to help ensure accuracy included practicing prolonged engagement (Lincoln & Guba, 1985) or "returning to the field frequently, spending a lot of time there" (Carspecken, 1996, p. 88). Another technique I used was peer-debriefing or asking a colleague to read parts of my primary record to check for biases in vocabulary or attention (Carspecken, 1996). Also, I employed the use of member checks or sharing aspects of my notes with some of the participants I studied to ensure that they were in accord with my record (Carspecken, 1996).

CHAPTER 4
PRESENTATION OF DATA
AND ANALYSIS

4.1 Introduction

This chapter details the analysis and the research findings, including the themes and patterns that have emerged, from the data. First, students' prior knowledge regarding computer use is discussed. Second, dialogical data is used in addressing students' responses to digital media and computer technology as tools in literacy learning. Third, critical discourse analysis (CDA) is employed to convey social identities, knowledge building and power as a product (Bloom et al., 2005) as students cooperatively write and illustrate their stories. Finally, imagery's role is contemplated in its use in composing stories and in relation to alphabetic text.

4.2 Students' Prior Knowledge of Computers

When the students in Room 10 first became immersed in their Digital Storytelling Project, in order to provide appropriate computer instruction, I inquired about what kinds of prior knowledge they had regarding using computers as educational tools. My inquiry consisted of two different modes of gathering information. The first mode of inquiry was simply to ask each student when they were first given a chance to word process at the computer, if they had ever used computers before. If they responded that they had used computers before, I then inquired as to whether or not they had used them as educational tools (e.g. word processing) or in an educational setting. The second mode of inquiry was a written survey about home computer use that I gave the students to individually fill

out (See Appendix E). This survey consisted of four questions: 1. Is there a computer at your home? (2.) If so, does it have Internet access? (3.) Are you allowed to use the computer? (4. If so, what do you use it for? There was also a blank space where the student's age could be filled in and a space to indicate their gender.

The results of the initial face-to-face questioning about prior computer use were revealing. A few of the students indicated that they had typed on a computer before, but their prior usage in the form of typing had been for e-mailing and messaging, not for word processing. Many of the students had never used a computer before, and none of the students had used computers before as educational tools or in an educational setting.

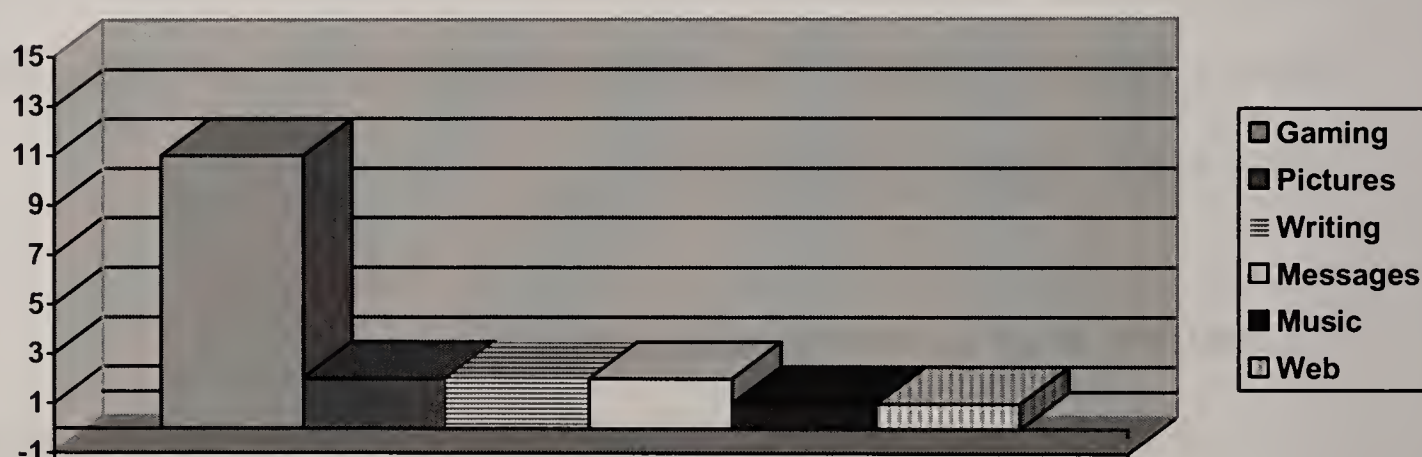


Figure 4.1 Uses of Home Computers

The results of the hand-written survey correspond to the initial oral inquiry and are represented in Figure 4.1. A few of the students gave dual responses, and I gave each entry equal representation in the graph. Out of 15 students surveyed, gaming was the top response to Question 4 with eleven total responses in this category. Under the category of gaming, six students identifying playing games, two responded with play, two with fun, and one with video games. Pictures and writing were the second most popular responses;

however, each of these categories only received two responses. Under the category of pictures, one student replied pictures; the other's response was paint. Other responses to Question 4 included: messages, music and Web with each category having one student identifying this as a home computer activity. The student who identified using the Web indicated that he liked going to Nickelodeon's Website. The survey also indicated that while many of the students did have computers at home (12 out of 15) only one third had Internet access.

Although some of the students did have computer access at home, their experience with using computers was limited to mostly play. The students who responded that writing was a home computer activity indicated that writing was for e-mailing. So although there were three students altogether using home computers for e-mailing and messaging, using computers for word processing or as an educational tool was something that these students had not yet experienced until the advent of the Digital Storytelling Project (DSP). None of the students had seen their hand drawn images digitalized before this project, and using the computer to create a layout that incorporated both alphabetic text and digital images, or digital hybridity of text and image, was also new to them.

4.3 Students' Responses to Computer and Digital Media Technology

In addressing my first research question, "In a classroom where most of the students have never used computers before as learning tools, what happens as they learn to create books using digital means?" the dialogical data generated by group surveys that were orally given and videotaped on 4/27/07, 5/21/07 and 5/30/07 will be used as will my detailed fieldnotes and general observations.

Using more than one mode of meaning making is what defines multimodality (Kress & van Leeuwen, 1996), and the use of multimodality in literacy learning is one of the defining features of the New London Group's pedagogy of multiliteracies (The New London Group, 1996). This Digital Storytelling Project (DSP) utilized several modes of meaning making including writing, illustrating, typing, discourse, (sometimes audio and gesture), and creating layouts that incorporate text and image.

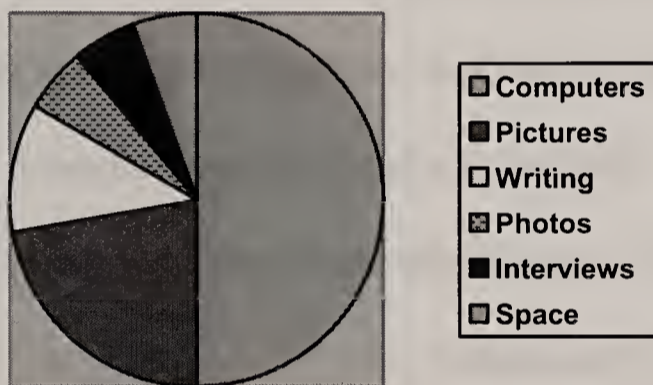
The New London Group's constructs of Design, Available Design and Redesigned will be used in analyzing this data. I will also discuss how the multimodal pedagogy of the DSP addressed "the [NLG] authors' twin goals for literacy learning: creating access to the evolving language of work power and community, and fostering the critical engagement necessary for them to design their social futures and achieve success through fulfilling employment" (The New London Group, 1996, p. 60).

In looking at how the students responded to the introduction of digital media and computer technology into their language arts curriculum, responses from the two rounds of survey questions that relate to technology will be examined. The first survey was conducted orally with the students in their writing groups, and I was able to question all of the students except one. I videotaped and then later transcribed their responses.

4.3.1 Students' Preferences for Different Modes of Communication

Question 2 from Survey 1 asks: What aspects or parts of the DSP do you like the best? (E.g. Writing, illustrating, computer, digital photos...) Of the fifteen students questioned, nine of the students indicated that they liked the computers best. This preference for the computers was quite evident during the Digital Storytelling Project time; when each group's designated time to use the two classroom computers came up,

there were almost always a few students who were begging to be the first to go on. From the remaining students questioned, three gave dual responses. “Writing and the papers,” “Illustrating and writing” and “Interviews and pictures” were the three responses that contained more than one mode of meaning making. The dual responses from the three students indicate that meaning making was important to them using various modes. Below is a pie graph that represents the students’ responses. If a student gave more than one mode, as in the previously mentioned students, each mode was given equal representation in the graph.



**Figure 4.2: Students Responses to Question 2 in Survey 1
“What aspects or parts of the DSP do you like the best?”**

As the students used many modes of meaning making in this project, it is interesting to note that for the initial survey, where students were videotaped answering survey questions in their writing groups, the majority chose computers as the aspect they liked the best. At this point in the project, April 27, 2007, the students were still just getting familiar with the computer, and for some of the students it was their first time ever using a computer in any capacity. The activity that the students were engaged in at this point on the computer was word processing their stories using the computer

application, Word. The next most popular mode was creating the pictures and the third was writing. The modes that received one response included: photos, interviews, and learning about space.

Some of the students were very drawn to the computers and word processing. Amy, for example, was one student who was often begging for more time on the computer. Because we had 16 students needing to get on the two classroom computers, we had to follow a somewhat regimented schedule to ensure equitable and equal access for the students. Other students, like Raul, were happiest when drawing, and when it was his turn to use the computer, he would sometimes linger reluctantly at the table where he was engaged in drawing. Then there was Jamal who really excelled at using the digital camera and seemed at his best when snapping digital photos of his classmates. The use of multimodality in the DSP offered the students many diverse avenues to communicate meaning, and the students' individual preferences for certain modes became apparent over the course of the project.

There are observations from my fieldnotes that beg to be mentioned here. Once we got to the point of incorporating text and the hand drawn images that were scanned to become digital images on the computer, the students were very attentive. (From fieldnotes and videotape) *Once the Money group was focused, I got the Camel Group over to the computers. There were already two chairs in front of the two computers and some of the students pulled chairs over to get closer to the computer. I was seated to the left of the computer with Foster sitting next to me, in front of the computer, and on his right was Angel. Marc was seated behind Foster and me, and Amy was seated behind Foster and Angel. Our first task was to work on cutting and pasting their digital images*

in order to pair them with their word-processed sentences. I did the first control x (cut) and then control v (paste) using an image to demonstrate to the students how it is done. This really captured their attention. They looked at one another and seemed somewhat surprised, and they also appeared quite pleased as they smiled at one another after witnessing their first observation of how to cut and paste images on the computer. At this point, Amy stood up and moved in closer. I then let the students each have a chance to cut and paste their own images and pair these images with their alphabetic texts.

Foster went first, and then it was Amy's turn. She beamed after completing the task and remained standing in order to be as close as possible to the action. Marc also decided to stand in order to get a better view of what was going on. Next it was Angel's turn; he stood up to perform the control x and control v task, and then he too remained standing, once it was Marc's turn. They all seemed very excited about completing this task! In the three years of conducting research in this classroom, I have never seen a group of students as attentive and excited as I did when showing them how to cut and paste their own images on the computer. (This was the case not only with the Camel Group, but each group of students that came up to learn this skill was incredibly attentive and more captivated than in any other situation I had witnessed in this classroom.)

After pairing the images with their corresponding texts, the Camel Group and I proceeded to work on the layout of their book's front cover. They had previously chosen the image of a cactus for their front cover. The next decision the students needed to make was whether to set up the page in portrait or landscape fashion. I used my fingers and in the air drew the two styles of situating the paper. The group unanimously decided that the portrait set up, having the 8.5 inches at the top and bottom of the page and the 11 inches

down the sides, was what they wanted. All of the students except Foster, who was right up front, remained standing and they were crowding in near the computer as close as possible. I then asked if they wanted to keep their working title, Three Camels Making Friends, and they agreed on that as well. So I enlarged the image of the cactus and once that was done witnessed a chorus of "Yay!" from Angel, Marc and Amy. The next decision was where to put the title, and the group wanted it at the top of the page. So we took turns typing in the title on the top of the page. Then it was my decision that the authors' names would go in alphabetical order (using last names) and then each student took a turn to type in their name underneath the cactus image. We really accomplished a lot; the book had been digitally assembled and the front cover was also ready to go! (Fieldnotes, 5/11/2007).

Over the next few class periods, I went through this same process with each group. With each group that learned to perform these functions on the computer: cutting and pasting images, pairing images with word processed text, resizing images and creating the front cover's layout, the level of excitement and fascination that emanated from the students remained constant for each group.

4.3.2 Students' Responses to Being Videotaped

The next question relating to technology's impact on the students addresses the digital videotaping equipment that was almost constantly running during the DSP. Before utilizing the video equipment, I explained to the students that I was documenting their actions on film in order to get lots of detailed data for my study. I had two VHS video cameras running and one digital video camera running during most of the project sessions. Question 7 from Survey 1 asked the students: "What is it about the filming that

you like?" Responses varied greatly to this question. From the Dog Group, Tony, who often assisted me at the end of project time by putting away the tripods, replied, "I get to be in front of the cameras. I get to help out." Mike's reply was, "I like being in front of the cameras. I like helping people and I like helping more people with their work." From the Money Group one male student said, "It's really exciting because we're being filmed, we're being filmed and we can do things we never did before." Another male from the same group's response was, "It's exciting cause I'm having a really lot of fun. I'm having a blast!"

On the other hand, there were a few students who did not feel that comfortable being filmed. When asked to reply to Question 7, Marc from the Camel Group informed me, "I feel a little nervous sitting here." Then there was Raul, from the Dog Group, who initially asked me not to film him at all. I honored his request understanding that not everyone feels comfortable being filmed. However, in the case of Raul, by the later half of the DSP, he decided that he would allow me to film him, and he actually seemed to enjoy his time in the "limelight."

Although it was my intent to minimize the "Hawthorne Effect" (Carspecken, 1996) by keeping the video cameras and digital picture taking as unobtrusive as possible, there were times when their presence did have an effect on student behavior. A few of the students regularly would stand directly in front of the rolling camera and make faces, dance around or make muscles and pump them. On several occasions, students even went as far as manipulating the video cameras and repositioning them on different students and adding a running commentary to the footage. Although the students knew that they

weren't supposed to engage in this type of behavior, it seems that the presence of the cameras was sometimes too enticing for them.

The second survey was also given orally to the students, and I videotaped the students responding in their writing groups. The videotaped surveys were transcribed at a later date. Due to time constraints, I was only able to survey the Camel and Dog Groups, Ariel, the female who chose to write alone, and Ray, a male from the Money Group. These surveys were conducted at the end of the project on May 21 and May 30, 2007. At this point, the digital books were completed, and the students had been given a chance to see their final products. As mentioned earlier, according to Val, the books looked "fantastic," and the students would be allowed to take them home after presenting the books to their parents on Parents' Night (See Appendix C).

4.3.3 Students' Responses Regarding Becoming Computer Literate

The students' responses to Question 4 from Survey 2 indicated that all but one of the nine students asked had a positive response to the question: How do you feel about becoming a student who knows about technology/computers? From the Camel Group, Amy brought up the novelty of technology for her in her reply, "It's kinda cool cause I never knew about technology when I was in first or second grade." Marc, who was often slow to reply in an excited manner, said he felt, "Kinda great." Foster, who was also sometimes skeptical, replied, "I think it's good. Sometimes you might have homework to do on the computer." Angel's response, "I feel like a computer geek," was one that was not definitively positive but could be open to interpretation.

From the remaining students questioned, two of the more notable replies came from members of the Dog Group. Mike's response was, "Um, fine because, um, we get to

type on the computer, and then we get to make the pictures digital.” And Raul’s reply indicated that he sensed that this use of technology was just the beginning for him as he stated, “Really good. Cause usually when I’m gonna grow up, I would use a lot more technology than just the computer.”

Learning to be computer literate was a new skill for most of these students. Through their engagement with the DSP, the students in Room 10 learned that computers offer a wide range of possibilities regarding literacy learning and multimodal communication. They learned that they were able to take their hand written alphabetic text and turn it into a word processed text by typing it into the computer. With the word processing application, they learned how to use the automatic spell check that underlined misspelled words. This was a source of fascination to some students; for example, Amy commented numerous times on how remarkable this feature was. They also learned how to save their files onto the desktop. The students also learned that they could take their hand drawn images and have them scanned in order to be digitalized so that they could be utilized on the computer. Then, they learned how to use a word processing application (Word) to incorporate their alphabetic text into a layout with their scanned and digitalized images. The fact that their newly digitalized images could now be resized and moved from page to page with such ease was also a source of intrigue to many of the students. Finally, they also learned that files could be lost, if they were not saved often, and that a few days worth of work might simply disappear.

Perhaps the most important aspects of using computer technology that students from Room 10 learned is that two of the most basic communication skills, skills that they were already fairly competent in, writing and drawing images,

were both transferable to the computer screen. And once these forms of communication were transformed into a digital context, these modes took on new dimensions (e.g. ease of reading alphabetic text with its copy-edited polish, spell check, saving files, resizing images, incorporating text and image with a key stroke), that were not possible without the computer.

Dogs in space.	They went surfing on
100 years later in space	on the water. On the
Dogs were on the moon.	Beach. Then a tornado
saying "woof woof". So they	hit the water. so it
went to mars and saw	sucked all the water and
fire. so then one meyer	the dogs landed on Pluto.
started crashing down. on	and they were frozen for
6 mars so they jumped	2000 years.
and landed on Saturn rings	
and spined and spined and	
SPined! until they	
landed on earth and	

Figure 4.3: Mike's Hand Written Text

3 camels making friends	but the camels got
there was a girl named Mady	tierd and so they came and
lost in the desert she	reascyou the 4 people.
screamed and. One day 3 dogs	The end
named Billo, Alex, Dilgo.	
They had 3 camels to	
come and Rescue Mady	

Figure 4.4: Amy's Hand Written Text

Figure 4.3 shows Mike's hand written text, and Figure 4.4 shows Amy's hand written text. While they both exemplify what a second grade student's hand writing is like, there is an enormous difference between these handwritten texts and the word processed texts (Student texts are found in Appendix G). Once a text has been word processed, the writing is uniform, misspelled words are replaced with their proper spelling, and it looks professional.

4.3.4 Students' Views on Computer Technology in the Classroom

When asked the final question from Survey 2: 6. Do you think computer technology should be part of all language arts classrooms? If so, why? The students were unanimous in their agreement that technology had an important role in the classroom. Mike, who had never been on a computer before this project, replied, "Yes, because without the technology then they won't, they won't have nothing to do." I find it noteworthy that Mike's engrossment with computers may have caused him to be forgetful about all of the other modes of communication that he engaged in before he became a computer literate student.

Raul and Ray's responses connect computer literacy to higher intelligence. Ray stated, "Yes, because technology is very good for your brain, cause then you can get smarter." Raul took this line of reasoning even further and replied, "I'd have to say yes. Some kids have to learn a lot to go from a smart kid to a genius."

Over the course of a year, the students in Room 10 became acquainted with computer and digital media technology. Overall, their responses to its inclusion within their language arts curriculum were very positive. Not only were the students' responses

positive, so was their teacher's. A conversation between Val and her class from May 21, 2007, exemplifies her feelings towards our DSP.

Transcript 4.1: Val Speaks with Class
5/21/07, 9:14 am

- 01 Val: Authors take a lot of time to put a book together. It's not something that happens in one sitting. And that sometimes you have to redo things and you change things; that's called editing and revising things. And you read it over again and you might want to add pictures and you might want to take pictures out... Those are all the things that Ms. Carey has been here helping us to do because without her we would not be able to produce the books that we're going to be sharing on the 30th. And they're going to be fan-tast-ic! You're parents are going to be shocked that you were able to do this. And you know what the great thing that I got out of all of this?
- 02 Students: What?
- 03 Val: Ms. Carey has been kinda my secret computer teacher. She's been teaching me little things about using the computer.
- 04 Students: (Chatter, whispers, some laughter)
- 05 Ray (Student from Money Group): For real? I know a lot about computers. ...
- 06 Val: Ms. Carey isn't that true? You've been my secret computer teacher. You've been teaching me all about it.
- 07 Jane: Absolutely!

As Val was still gaining knowledge about computer use herself, the time that I was in the classroom was the only time that the students were granted access to the two classroom computers. For the students “Digital Friday” was a time that allowed them access to many modes of meaning making as they went through the steps and processes of creating their digital books. As Prior informed, computer technology offers different affordances than do other modes of communication (Prior, 2005). It is a tool that allows the user new opportunities in sign making (Kress, 1996), and new ways to design things (New London Group, 1996). Over the course of this project, the use of multimodality was a key aspect of how knowledge of computers (e.g. word processing, creating layouts, cooperative writing, illustrating etc.) was built as the students created their digital stories. When two or more modes took on the task of working together, it often increased the quality as well as the complexity of the final product and very likely had the effect of boosting students’ interest levels of design. Using the example of taking students hand drawn images and scanning them for digitalization, we see two modes of meaning making working very effectively together. Using the Camel Group’s work as an example, once the image to be used for the Camel Group’s cover, a picture of a cactus, had become a digital entity, or visible on the computer screen, it was no longer a stable two dimensional image but was one that could be adjusted, reconfigured, resized on the computer screen. As a group, the students decided how large they should make the cactus’ image, where the title and authors’ names should be placed, and how large the alphabetic text should be. In the process of piecing together their cover’s layout, the students from the Camel Group learned that with the use of computer technology, the image of the cactus was now capable of being easily paired with the word processed

alphabetic text. They also saw that with the digital alphabetic text, that not only did this affordance offer that copy-edited polish, but the students could also change the size of their letters, as well as the placement of the words with ease.

In terms of the New London Group's construct of Design, the students took the Designs that were Available to them (Available Designs) and through the process of Designing created the Redesigned (New London Group, 1996). In this case the Available Designs were the classroom texts that were used as resources combined with the students' prior knowledge, their imaginations and their cooperative discourse. The Designing itself included the brainstorming, the writing, and the illustrating as well as the word processing, working with digital images and text, and putting together each page's layout. This phase of Design is where many modes (or modalities) played intertwining roles and together embraced the notion of multimodality. The Redesigned were the 5 digital books that were the final products of this Project.

4.4 Social Identities, Knowledge Building and Power as a Product

In this section students' identities are examined using the tool of critical discourse analysis as the cooperative writing groups engage in discourse while attempting to collaboratively write and illustrate their stories. Knowledge building is also analyzed using CDA with Bloome et al.'s construct of "power as a product" being employed (Bloome et al., 2005), and in terms of this literary project, literacy is the form of power being addressed.

Before engaging in the discourse analysis, it seems important to briefly discuss the second research question which has fueled this aspect of my research. Over the course of envisioning this project, carrying it out, reflecting on it and analyzing the data, the

second research question has changed slightly due to the use of collaborative vs. individual writing. The second research question initially read, "How will the students position themselves as writers?" According to Carspecken, research questions should not be rigid but "flexible" so that the researcher does not miss "important but initially unsuspected features of the situation" (Carspecken, 1996, p. 28). Taking all of this into account, my second research question now asks, "How will the students cooperatively position themselves as writers (the term Designers (New London Group) may be used interchangeably with the term writers in this context) and how will they influence one another?"

As the students worked together, there were social identities being formed as they collectively and sometimes individually positioned themselves as writers. This will be one aspect of CDA employed on the data. The way the students influenced each other as they used their imaginations, their prior knowledge and the classroom resources to build knowledge together as their stories were being created; using Bloome et al.'s construct of "power as product", this will be the second aspect of CDA applied to the data in response to the latter aspect of research question two.

While the students in Room 10 were collaborating in their writing groups, the three strategically placed video cameras recorded the groups in action along with their discourse. In order to respond to my second research question, interactions that exemplify either social identity or knowledge building have been transcribed and analyzed. The first conversation to be examined occurred on 2/16/07 at 10:02 am.

The whole class has just met together up front on the rug for a mini lesson that entailed my introducing them to the video camera. From my fieldnotes: *Wow! This was*

one of the most exciting research/teaching days ever! In Room 10, today was the introduction of the video camera and also the introduction of using the computer as a word processor... In the beginning of class I joined the circle with my digital video camera, and Val asked me to share with them how fragile and expensive a piece of equipment it was. So I did. I explained that it cost hundreds of dollars and that we needed it to make movies in class. Val and I also stressed the need for them to leave the video cameras alone. I explained some of the parts of the camera to them, and explained how our DS program was really on the cutting edge of technology and education.

((Observers Comment (OC): I wonder if anyone besides Val knew what I meant!?!)) I then opened up the floor for questions. One of the best questions was from Sherri (a pseudonym) who asked what the video tape was for. I answered her question by explaining that the video tape recorded their actions in the form of a movie. I also shared with her and the class that these "movies" would become data for my dissertation and that I could use the videos later to review what had happened in the classroom. After that, Val read the first lines of each story as she called up the groups to pick up their DS folder (Fieldnotes 2/16/2007).

Once the mini lesson was done, the students congregated in their writing groups. This literacy event focused on the Camel Group as they opened their DSP folders, handed out each student's papers that contained the very beginning of their stories and continued their task of collaborative writing. The transcribed conversation is given first then it is seen in a table that shows the analysis of individual attributes and social identities.

Transcript 4.1 shows the spoken discourse between the students in the Camel Group and the researcher. Some contextual cues are listed in parenthesis, but are not

described in detail. If an utterance was undecipherable, Xxxxx is used to indicate that the spoken words were not decipherable. I followed Bloome et al.'s protocol of including the written transcript first followed by a table that included the analysis.

Amy, Marc, Angel and Foster were situated around their table (in this order clockwise). All were sitting except Angel who was standing. I am not physically present until line 23.

Transcript 4.2: The Camel Group Writing
2/16/07, 10:02 am

Marc
Amy ((table))Angel
Foster

- 01 Angel: I broke my pencil. (Looking at camera, holds pencil)
- 02 (Laughter from all)
- 03 Amy: So what's going to be, what's going to be, uh, what's going to be our title?
What's going to be our title?
- 04 Foster: *Three Camels Making Friends.*
- 05 Amy: Okay.
- 06 Angel: Owww (Drops pencil)
- 07 Marc: Xxxxx.
- 08 Angel: Who has a pencil? (Sharpens pencil, still standing. All three are writing except Angel)
- 09 Angel: Can this be a magic show?
- 10 Marc: Xxxxx write?

11 Amy: Three camels making friends. (Moves hands around)

12 Angel: Eyes on me. (Drops pencil)

13 Angel: Look magic! Okay, magic shows over.

14 Marc: Xxxxx.

15 Amy: There was, who, and there was a man who lived in the, who lived in the desert who haded three camels that made friends.

16 Foster: (Shakes head no)

17 Angel: That's short.

18 Amy: Okay. What do you want to do then?

19 Andy: We want it to be long... long, long, long. Big.

20 Marc: Xxxxx. Let's make it to like one hour. Xxxxx.

21 Angel: Let's have a magic show.

22 Angel: Hey! How come I don't have a camera on me?

23 Jane: So now is this group working all together? You're writing the same story?

24 Whole group: Yeah.

25 Jane: Nice.

26 Angel: I'm doing a magic show.

27 Jane: Hey, instead of doing a magic show, how about focusing on your writing? Okay? (Angel sits)

28 That'd be really good.

29 Angel: (To Foster) Gimmie! That's not yours.

30 Jane: Hi Val. How are you doing? (To principal who is walking around classroom)

- 31 Angel: (To Foster) Stop taking stuff that's not yours. (Holding pencil and sharpener)
- 32 Angel: (Waves to Foster) Hi.
- 33 Amy: All of a sudden we're making a story about the desert.
- 34 Marc: Three camels making friends. (Pounds both fists on table on either side of paper)
- 35 Amy: Xxxxx. (Smiles, moves hands and makes dancing movements in chair)
- 36 Angel: There was a girl named (Cups hand by mouth) Yo Lay He Who.
(Angel laughs)
- 37 Amy: That's not funny.
- 38 Foster: What's her name?
- 39 Angel: Chicken legs, chicken legs, chicken legs, chicken legs, chicken legs.
- 40 Marc: What was her name?
- 41 Foster: My name was Dillon.
- 42 Amy: Mady.
- 43 Angel: Chicken legs.
- 44 Marc: How do you spell Mady?
- 45 Amy: M-a-d-y, Mady.
- 46 Angel: (Hits forehead with pencil's eraser a few times)
- 47 Marc: Xxxxx. (Coughs)
- 48 Angel: Peace out, Mama. Peace out, Mother. (Looking at camera)
- 49 Amy: Foster, so we do, there was a little girl?
- 50 Foster: There was, there was a girl.

- 51 Marc: I didn't put little.
- 52 Amy: We have to put a little.
- 53 Marc: Xxxxx a little?
- 54 Jane: This group is now working really well together. You're doing a great job.
- 55 Amy: Xxxxx Mady.
- 56 Jane: I'm going to come back (with the video camera) in a little while. Keep up the good work!

Table 4.2 shows the transcribed conversation is in the left column and each message unit is numbered. In the following columns to the right of the conversation, each speaker has their own column where their discourse is evaluated using the lens of individual attributes and social identities within the writing event.

Table 4.1: Mapping Individual Attributes And Social Identities from Transcript 4.1

Marc
Amy ((table))Angel
Foster

MESSAGE UNIT	Amy	Angel	Foster	Marc	Jane
01 Angel: I broke my pencil. (Only one standing. Looking at camera, holds pencil)		Distracted and off-task student ↓			(Physically present on line 23)
02 (Laughter)					
03 Amy: So what's going to be, what's going to be, uh, what's going to be our title? What's going to be our title?	Writer and on-task student ↓				
04 Foster: Three Camels Making Friends.	↓ Cooperator ↓		Leader ↓		
05 Amy: Okay.					
06 Angel: Owww (Drops pencil)		Attention seeker ↓			
07 Marc: Xxxxx		↓		Soft spoken student ↓	
08 Angel: Who has a pencil? (Sharpens pencil, still standing. All three are writing except Angel)		Trying to be an on-task student? ↓			
09 Angel: Can this be a magic show?		↓			
10 Marc: Xxxxx write?	↓	Attention seeker ↓	↓		

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MESSAGE UNIT	Amy	Angel	Foster	Marc	Jane
11 Amy: Three Camels Making Friends. (Moves hands around)	Leader ↓	↓	↓	↓	
12 Angel: Eyes on me. (Drops pencil)		Clown/Attention seeker Magician ↓			
13 Angel: Look magic! Okay, magic shows over.				Soft spoken student ↓	
14 Marc: Xxxxx					
15 Amy: There was, who, and there was a man who lived in the, who lived in the desert who haded three camels that made friends.	↓ Writer, leader ↓		Leader ↓		
16 Foster: (Shakes head no)					
17 Angel: That's short.	↓				
18 Amy: Okay. What do you want to do then?	Cooperator ↓				
19 Angel: We want it to be long... long, long, long. Big.		↓ Cooperative decision maker ↓ ↓		↓ Decision maker ↓	
20 Marc: Xxxxx. Let's make it to like one hour. Xxxxx					
21 Angel: Let's have a magic show.		Distracted student Attention seeker ↓			
22 Angel: Hey! How come I don't have a camera on me?	↓		↓	↓	

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MESSAGE UNIT	Amy	Angel	Foster	Marc	Jane
23 Jane: So now is this group working all together? You're writing the same story?	↓	↓	↓	↓	Mentor/Coach- Inquiring about organization ↓
24 Whole group: Yeah.	Cooperative student ↓	Cooperative student ↓	Cooperative student ↓	Cooperative student ↓	Mentor/Coach ↓
25 Jane: Nice.	↓	Off-task/ Magician ↓	↓	↓	Task master ↓
26 Angel: I'm doing a magic show.	↓	↓	↓	↓	Mentor/Coach ↓
27 Jane: Hey, instead of doing a magic show, how about focusing on your writing? Okay? (Angel sits)	↓	↓	↓	↓	↓
28 Jane: That'd be really good	↓	↓	↓	↓	↓
29 Angel: (to Foster) Gimmie! That's not yours.	↓	"Victim" standing up for himself ↓	↓	↓	↓
30 Jane: Hi Val. How are you doing? (To principal who is walking around classroom.)	↓	↓	↓	↓	↓
31 Angel: (To Foster) Stop taking stuff that's not yours. (Holding pencil and sharpener)	↓	"Victim" standing up for himself ↓	↓	↓	Friendly researcher ↓ ○
32 Angel: (Waves to Foster) Hi.	↓	Forgiving friend ↓	↓	↓	↓
33 Amy: All of a sudden we're making a story about the desert	Leader, writer ↓	↓	↓	↓	↓
34 Marc: Three camels making friends. (Pounds both fists on table on either side of paper)	↓	↓	↓	Cooperative writer ↓	↓

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MESSAGE UNIT	Amy	Angel	Foster	Marc	Jane
35 Amy: Xxxxx (Smiles, moves hands and makes dancing movements in chair)	Friendly ↓	↓	↓	↓	
36 Angel: There was a girl named (Cups hand by mouth) Yo Lay He Who.		Off- task/Clown ↓			
37 (Angel Laughs)	↓				
38 Amy: That's not funny.	Task master ↓				
39 Foster: What's her name?	↓		Cooperative writer ↓		
40 Angel: Chicken legs, chicken legs, chicken legs, chicken legs, chicken legs.		Off- task/Clown ↓			
41 Marc: What was her name?				Cooperative writer ↓	
42 Amy: Mady.	↓				
43 Angel: Chicken legs.	Writer/Leader ↓	Off- task/Clown ↓			
44 Marc: How do you spell Mady?	↓				
45 Amy: M-a-d-y, Mady.	↓				
46 Angel: (Hits forehead with pencil's eraser a few times)	Speller/Leader ↓	Off- task/Clown ↓			
47 Marc: Xxxxx (Coughs)					
48 Angel: Peace out, Mama. Peace out, Mother. (Looking at camera)				Soft spoken ↓	

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Message Unit	Amy	Angel	Foster	Marc	Jane
49 Amy: F., so we do, there was a little girl!↑?	Writer/Leader ↓	↓	↓	↓	
50 Foster: There was, there was a girl.	↓	↓	Writer/Leader ↓	Cooperative writer	
51 Marc: I didn't put little	↓	↓	↓	Cooperative writer ↓	
52 Amy: We have to put a little.	Writer/Leader ↓	↓	↓		
53 Marc: Xxxxx a little?	↓				
54 Jane: This group is working really well together. You're doing a great job.	↓				Mentor/Coach- Using positive reinforcement ↓
55 Amy: Xxxxx Mady.	Writer ↓				Mentor/Coach- Using positive reinforcement ↓
56 Jane: I'm going to come back (with the video camera) in a little while. Keep up the good work!	○	○	○	○	○

This excerpt of discourse exemplifies the dynamic of the Camel Group as they collectively strove to write a story together. Amy took a key role in moving the group forward, and her individual attributes of cooperative writer and on-task student helped to perpetuate the task of writing. In line 03, she initiates dialogue inquiring about what the title of their story should be. Once Foster responds with the title, *Three Camels Making Friends*, in line 04, Amy approves in line 05 and then goes on to reiterate the title in line 11. Then in line 15, Amy begins to assemble the beginning of the story. Foster does not approve of this as he shakes his head no in line 16. Amy's reply in line 18, "Okay. What do you want then?" shows us of her willingness to put ideas out on the table and then compromise or cooperate if consensus with the group is not reached.

Although Foster does not say too much, it is evident by the afore mentioned interactions in lines 03 and 04, as well as his head shaking in line 16 in response to Amy's proposed story text, that he is a leader who has a certain power over Amy and the group. Out of 56 message units, Foster contributes only three statements (lines 04, 39, and 50) and one contextual cue of a head shake in line 16. Still, he plays an important role in this dialogue and in shaping the story's title as well the initial lines of the story.

In this excerpt, Marc takes on the role of a soft spoken student whose utterances are often unintelligible (lines 07, 10, 14, 47) yet he is a cooperative group member. At one point in the dialogue, line 20, he assumes the role of decision maker as he interjects his preference for a story that is one hour long. Marc also helps to keep the writing going as he asks the other group members questions about the main character's name (line 41) and how it is spelled (line 44).

Angel takes on a number of adversarial roles in this interaction. Even though he is distracted and off-task much of the time assuming the roles of attention-seeker, clown, “magician” and “victim” he is largely ignored by his group members. Angel is focused on his pencil (lines 01, 06, 08), on creating a magic show (lines 09, 12, 13, 21, 26), and then back to his pencil (lines 29, 31). Only in lines 17 and 19 does Angel actually contribute to the discussion of the story as he adds comments about the length of the story and his desire for it to be “long, long, long” (line 19). In line 36, when he declares, “There was a girl named Yo Lay He Who,” he is actually reprimanded by Amy in line 38 when she informs him that his joking is “not funny.”

I appear in line 23 and assume the role of coach/mentor as I try to keep the students on-task. In line 27, I try to get Angel off the topic of magic shows and change his focus to writing with his group members. In lines 54 and 56, I offer positive reinforcement about group members working together cooperatively. I do not offer any input into designing the story.

Each student with their own set of individual attributes brought something unique to the table, and although they had their differences with a certain group member acting distracted and off-task, the writing still moved forward. The students shared the power of

Table 4.2: Analysis of Turns at Talk from Transcript 4.2

	Turns at Talk	Interruptions	Initiates Topics	Revoicing
Amy	13 message units/13 turns	0	3	2
Angel	20 message units/15 turns	7	1 On-task (6 Off-task)	0
Foster	4 message units/4 turns	0	1	1
Marc	10 message units/10 turns	0	0	3
Jane	7 message units/6 turns	0	1	0

(Excluding whole group lines 02 and 24)

deciding how to design their story while the teacher/researchers gave them the latitude to do this with minimal teacher input. The DSP was set up to emphasize cooperative learning and the students guided each other instead of continually relying on the teacher/researcher for guidance or assistance. The main role of the teacher/researcher during the writing phase was to keep the students on-task and working together in a cooperative manner. Positive reinforcement for this behavior helped to ensure that the students were in charge of the designing process and that their collective voices came forth in the stories they generated.

In this literacy event, it is interesting to note that although Angel has the largest number of turns at talk, he does not influence the topics of conversation of the other group members. Angel is socially constructed as an off-task and distracted student by his peers; perhaps this is because of the classroom expectations of active, constructive participation. "Personhood involves those shared, but continually negotiated and renegotiated, ways that a group of people have for behaving, interacting, valuing, thinking and feeling" (Bloome et al., 2005, p. 140). Angel did not live up to the group or classroom's expectations for behaving and interacting. The way the other students ignore him, for the most part, indicate that he is sometimes positioned in this excerpt by his peers as a "nonperson" (Bloome et al., 2005). This is especially significant because of his later progress in the program. (See p. 110.)

The other students' positioning of Angel is significant for a number of reasons. Although Angel's off-task actions are not contributing to the productive nature of the group work, it is meaningful that the other students in Angel's group are able to move forward in their task of writing a story, and their determination overcomes the distraction

that Angel has imposed upon his group. Also, it is possible that because the other students do not pay much attention to Angel's disruptive behavior, he does not get the sought after attention he was seeking and this helps to dissuade him from further disruptive behavior. Over time, it seems possible that part of the reason that Angel does eventually become more focused (See Transcript 4.4) is because his off-task behavior is ignored and not reinforced by students reacting to him. His becoming a more focused group member is likely also partially due to his finding a mode of communication that he is drawn to; one that he is capable of excelling in. (See the discussion after Transcript 4.4 about how his drawing allows him to actively contribute to the group's endeavor.)

The next transcript to be introduced is another conversation amidst the Camel Group. In order to set the stage of what was transpiring in the classroom before addressing the next literacy event, here is an excerpt from my fieldnotes: *Today was another exciting and productive day with the second graders in Room 10. When I entered the classroom, the students were gathered at the rug sitting in a circle behaving very well, and Val was singing, "Are you ready, are you ready to work with me?"*

They then went around the circle doing the knock-knock joke as a way to greet each other. Once again, I also was allowed to participate, and I did so as I was setting up the three video cameras in the back of the room. I say "Knock, knock."

They say, "Who's there?"

I reply, "Jane."

They reply, "Jane who?"

And I respond with, "Jane Carey!" I also added, "I'm very excited because it's Digital Friday!"

After the knock-knock joke greeting, Val asked me to come over because I was wearing green. She gave me a shamrock sticker, and then it was time to play “Who stole the cookie from the cookie jar?” Val had brought a container of shamrock cookies and they again went around the circle, except this time the repeated phrase was, “Who stole the cookie from the cookie jar?” (Fieldnotes, 3/16/2007)

After the meeting at the rug was over, the students got into their writing groups to continue working on their stories. At this point in time, the Camel Group had completed the first draft of their written text and was in the process of illustrating their story. In employing CDA on this event, knowledge building with a focus on power relations will be examined using “power as a product” as a construct. According to Bloome et al., models of power can take the forms of “power as product,” “power as process” or “power as caring relations.” Since “Literacy can be defined as power from the perspective of power as a product” (Bloome et al., 2005, p. 160), I have chosen to use this model of power.

**Transcript 4.3: The Camel Group Illustrating
3/16/07, 9:03 am**

Amy

((table))

 Marc
Foster Angel

Amy is drawing and the three boys look on. The boys begin to engage in their own drawings. Foster takes Amy’s pencil uses it then gives it back. She looks at Foster without much expression and says nothing. The students engage in drawing their own pictures. Amy is working on an illustration of the authors, Foster is drawing a cactus in

the desert with a sun, Marc is drawing the desert with various animals, and Angel is drawing food.

01 Marc: Chocolate or caramel?

02 Foster: Caramel.

03 Angel: Caramel popcorn. It looks ugly but it tastes good.

04 Foster: I know.

05 Amy: I like caramel popcorn.

06 Foster: I know.

07 Amy: I get candied popcorn and it tastes really good. Xxxxx.

08 Foster: I know.

09 Amy: Should we bring the hot tub with us? (Smiles)

10 Laughter from group.

11 Foster: Doritos, Doritos, Doritos, Doritos.

12 Angel: Don't tell me what to bring. And I will tell anybody what to bring.

13 Marc: I messed up my paper. (Hand goes up)

14 Marc: My paper ripped.

15 Jane: Okay. Yes. Your paper ripped.

16 Jane: Do you need a new one?

17 Marc: Yes.

18 Jane: I'm getting you a new one.

19 Amy: And then we'd put flexing (?) bubbles in... (Smiles and stretches)

- 20 Amy: Xxxxx.
- 21 Amy: It's going to be in the middle of our tent.
- 22 Amy: Imagine having a ...Imagine we have like a mansion. (Hand gestures out indicating something big)
- 23 Angel: I already got chicken wings.
- 24 (The boys all put their hands in the center of the table each one holding a pencil. They compare and notice sizes of erasers.)
- 25 (Angel begins to act in a disruptive manner and uses his pencil to flick Foster's pencil off table.)
- 26 (Pencil flies off hitting Tony.)
- 27 (Val intercedes.)
- 28 (The group of four then quietly draws for a few minutes.)
- 29 Angel: Who votes for the Irish cookies? Who votes for the Irish cookies?

Table 4.3 shows the transcribed conversation is in the left column and each message unit is numbered. In the first column to the right of the conversation, the social interaction is identified. In the next column knowledge building is addressed and in the final column additional comments are provided. In the knowledge building column, the descriptions are staggered from left alignment to right alignment with comments on Marc and Andy's contributions aligned to the left and Amy and Angel's aligned to the right.

Table 4.3 Knowledge Building and Power as a Product from Transcript 4.3

Amy
 ((table)) Marc
 Foster Angel

Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
01 Marc: Chocolate or caramel?	Asks group members for input	Possible choices for food in the story are discussed	Students are positioned as authorities as they are in charge of decision making
02 Foster: Caramel.	Responds to inquiry	↓ Adds input	
03 Angel: Caramel popcorn. It looks ugly but it tastes good.	Responds to inquiry with details about appearance	↓ Adds prior knowledge	
04 Foster: I know.	Agrees with previous comment	↓ Adds input	Consensus seems important
05 Amy: I like caramel popcorn.	Adds opinion	↓ Adds input	
06 Amy: I get candied popcorn and it tastes really good. Xxxxx.	Adds sensory details about personal experience	Adds prior knowledge	
07 Foster: I know.	Agrees with previous comment	Adds input ↓	Group seems to agree about positive aspects of caramel popcorn

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Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
08 Amy: Should we bring the hot tub with us? (Smiles)	Makes random somewhat strange or silly suggestion	Opens up conversation by suggesting somewhat unrealistic tangent	
09 Laughter from group.	Response of merriment	↓	Laughter from all may indicate agreement of all of preposterousness of suggestion
10 Foster : Doritos, Doritos, Doritos, Doritos.	Suggests another type of food	Suggesting other possible food choices	
11 Angel: Don't tell me what to bring.	Tells group not to instruct him	Asserting authority ↓	Tries to be authority
12 Angel: And I will tell anybody what to bring.	Indicates that he will instruct others	Asserting authority ↓	Continues to try to hold position of authority
13 Marc: I messed up my paper. (Hand goes up)	Indicates something wrong with his paper		There is a need for proper materials in order to work with group
14 Marc: My paper ripped.	Explains problem with paper		

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Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
15 Jane: Okay. Yes. Your paper ripped.	Responds and reiterates problem		
16 Jane: Do you need a new one?	Offers a solution		Proper materials are needed to participate
17 Marc: Yes.	Responds affirmatively to offer		Proper materials are needed to participate in writing
18 Jane: I'm getting you a new one.	Indicates help coming		
19 Amy: And then we'd put flexing (?) bubbles in (Smiles and stretches)	Elaborates on tangent	Using imagination to add sensory details ↓	Assumes role of humorous or highly imaginative student
20 Amy: Xxxxx.			
21 Amy: It's going to be in the middle of our tent.	Continues to elaborate on tangent	Using imagination to create imagery ↓	Continues to assume role of humorous or highly imaginative student
22 Amy: Imagine having a ...Imagine we have like a mansion. (Hand gestures out indicating something big)	Continues to elaborate on tangent	Using imagination to create imagery ↓	Continues to assume role of humorous or highly imaginative student

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Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
23 Angel: I already got chicken wings.	Changes topic back to food		
24 <i>The boys all put their hands in the center of the table each one holding a pencil. They compare and notice erasers' sizes.</i>	Looking at other group members writing tools		Possible competition between the three boys?
25 <i>Angel begins to act in a disruptive manner and uses his pencil to flick Foster's pencil off table.</i>	Off-task behavior		
26 <i>Pencil flies off hitting Tony.</i>			
27 <i>Val intercedes.</i>			
28 <i>The group of four then quietly draws for a few minutes.</i>	On-task behavior		
29 Angel: Who votes for the Irish cookies? Who votes for the Irish cookies?	Brings topic back to food	Seeks consensus about Irish cookies and uses prior knowledge of cookies recently consumed	Irish cookies were shared by class earlier at whole class morning meeting

As the students in the Camel Group are working on their illustrations, they discuss what food items should be brought into the desert as part of their storyline. Marc initiates the choice of caramel or chocolate popcorn, and the rest of the group comes to a consensus that caramel popcorn appeals to them. Using their prior knowledge they add sensory details about how it looks and tastes. As the group members contribute to the creation of their story, power is seen as a product (Bloom et al., 2005) within the literacy event with literacy or the creation of a digital story being the final product.

The power relations among the group members are fairly balanced with each student taking 3 or 4 turns and adding their perspective to the ongoing the conversation. The only exception can be found in lines 11 and 12 when Angel tries to assert his authority. He is the one who is drawing the images of food being brought, and he proclaims, “Don’t tell me what to bring. And I will tell anybody what to bring.” No one responds to his assertions as the discourse moves to the subject of Marc needing a new piece of paper.

Table 4.4: Analysis of Turns at Talk from Transcript 4.3

	Turns at Talk	Interruptions	Initiates Topics	Revoicing
Amy	7 message units/3 turns	2	1	1
Angel	5 message units/4 turns	1	1	1
Foster	4 message units/4 turns	0	0	1
Marc	4 message units/3 turns	1	1	0
Jane	3 message units/3 turns	0	0	0

(Excluding whole group line 09 and contextual cues lines 24, 25, 26, 27, 28)

Amy uses her prior knowledge about caramel and candied popcorn (lines 5 and 6), but then she tries to initiate the subject of bringing a hot tub into the story in line 8.

Although she initially receives some laughter from the other group members (line 9), when she reiterates and elaborates on her hot tub idea (lines 19 – 22), no one responds to her suggestion. The topic of food continues to be the focus of the group's conversation as these students collaboratively construct knowledge.

Bloome et al. suggest that, "Part of what is interesting to note is that the building and acquisition of knowledge involve *identity building*..." (Bloome et al., 2005, p. 194). As the students in the Camel Group asserted their knowledge about caramel popcorn, or initiated topics of hot tubs, they were also projecting identities. They were defining themselves as they assumed roles of authority, and roles of creative and/or imaginative students. I agree with Bloome et al.'s assertion that, "In sum, identity and knowledge are inseparable constructs. They always implicate each other" (Bloome et al., 2005, p. 194).

As the students in Room 10 worked together cooperatively, knowledge was being built collectively, and social identities were also being built. According to Cameron, "It has long been axiomatic for students of language in society that language using is an 'act of identity'" (Cameron, 2001, p. 170). She goes on to express that this assumption regarding the relationship between language and identity has been contested by theorists with poststructuralist or postmodernist views. Rather, they see that:

...a person's identity is not something fixed, stable and unitary that they acquire early in life and possess forever afterwards. Rather identity is shifting and multiple, something people are continually constructing and reconstructing in their encounters with each other and the world. (Cameron, 2001, p.170)

So it is possible then, that in this conversation amidst the Camel Group (as well as with the Dogs in Space Group) that the identities of the students were being shaped not only by their utterances but also by their relations and interactions with one another.

Twenty minutes after Transcription 4.3 transpired, there is a segment of more discourse with the Camel Group that is relevant to the discussion of “power as a product” (Bloome et al., 2005) and identity building (Bloome et al., 2005; Cameron 2001). I am asking the students about the images that they are currently working on, and the snippet of conversation I have with Angel is worth noting. Because it is such a small segment of conversation, I have left it in its transcribed form without putting it into a table.

Transcript 4.4: The Camel Group Illustrating, Part II
3/16/07, 9:20 am

Amy
((table)) Marc
Foster Angel

- 01 Jane: And what are you drawing, sir? (To Angel)
- 02 Angel: I'm drawing the food.
- 03 Jane: Food?
- 04 Angel: Yeah.
- 05 Jane: There's food in the desert? Is that part of your story?
- 06 Angel: No, we're bringing food.
- 07 Jane: Oh.
- 08 Angel: You have to put food in the story.
- 09 Jane: Cool! You guys are thinking of everything.
- 10 Angel: Next time we do this... can we do this next time?
- 11 Jane: Yeah, we have a lot of illustrating to do. Isn't it fun?

- 12 Angel: And the next time I'm going to draw the Irish cookies and they're going after the desert, they're going to go to Scotland.
- 13 Jane: Cool!

It seems that Angel has come a long way from Transcript 4.2 when he is so off-task that his identity could be inferred to be that of a "nonperson." At this point in time, one month after Transcript 4.2, Angel has "turned around" (Kamler & Comber, 2005) in a sense and is on-task, as he seems to really be enjoying his undertaking of creating an illustration for their story. His asking, "Can we do this next time?" (line 10) is a real concrete indication that he is not only enjoying his task but taking on an identity of a productive student that allows him to contribute to his group's project. Also, the way he is looking ahead to the next DSP class time (line 12) and has definite ideas of how to continue this on-task behavior shows an investment in this new identity and that he will perhaps continue to take on the role of a serious student, not a magician or victim, and happily continue to contribute to his groups' collaborative effort.

The following transcription also has an example of another student being "turned-around" possibly because of the multimodal pedagogy of the DSP. The focus moves to the Dogs in Space Group, and to set the stage for the first transcription here is a brief entry from my fieldnotes: *After the students had broken up into their writing groups, there was a very interesting interaction between Tony, who is often in trouble for his bullying of other students and other aberrant behavior, and Val. (OC: I have taken it upon myself to let Tony know that he is important to me. I often ask for his help in breaking down my video equipment at the end of the day and he seems to take great pride*

in assisting me.) Tony took it upon himself to approach Val and let her know that their writing group was not all on the same page... there was writing going on but not everyone was collaborating (Fieldnotes, 2/16/2007).

**Transcript 4.5: Tony Talks to Val about Group Dynamic
2/16/08, 10:08 am**

Tony Raul

((table))

Mike

- 01 Tony: Ms King-Jackson, Ms. King- (Walks toward MKJ who is sitting at the front of the room on the rug w/ the money group)
- 02 Val: I'm working with a group.
- 03 Tony: Awwwwwwww. (Turns and walks away back toward Dogs in Space table located in center of room)
- 04 Val: I'm sorry.
- 05 Tony: Fine. It's Xxxxx. (different??) Mike doesn't want to be in our group. (Back at table with group)
- 06 Val: No. Mike is in the group.
- 07 Tony: (Sits at table with his own group) No. He doesn't want to write.
- 08 Tony: We, we (referring to himself and Raul) both write, we both have the same thing for the, the story. Xxxxx don't have the same thing.
- 09 Val: Well, Mike, have you ever been to Florida?
- 10 Mike: No.
- 11 Val: Okay. Well, there's no other group I can put you in. You can write your own story, but you'll have to do all the work.

**Table 4.5: Mapping Individual Attributes
And Social Identities from Transcript 4.5**

Tony Raul
((table))
 Mike

Message Unit	Tony	Val	Mike
01 Tony: Ms King-Jackson, Ms. King...	Attempts to be gatekeeper/ liaison between writing group and teacher ↓		
02 Val: I'm working with a group.		Assumes role of focused teacher working with other group of students ↓	
03 Tony: A wwwwww. (Turns and walks away back toward Dogs in Space table located in center of room)	Assumes role of disappointed gatekeeper/ liaison ↓		
04 Val: I'm sorry.		Assumes role of compassionate teacher who expresses sorrow at lack of availability ↓	
05 Tony: Fine. It's Xxxxx. (different?) Mike doesn't want to be in our group. (Back at table with group)	Maintains role of gatekeeper/ liaison expressing concern about one group member's status within group ↓		

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Message Unit	Tony	Val	Mike
06 Val: No. Mike is in the group.		Assumes role of teacher/ leader in charge of the make up of the writing groups ↓	
07 Tony: (Sits at table with his own group) No. He doesn't want to write.	Maintains role of liaison adding details about group members lack of writing with the rest of the group ↓		
08 Tony: We, we (referring to himself and Raul) both write, we both have the same thing for the, the story. Xxxxx (don't have the same thing?)	↓		
09 Val: Well, Mike, have you ever been to Florida?	↓	Maintains role of teacher/ leader in charge of the make up of the writing groups ↓	
10 Mike: No.	↓		Assumes role of writer who has not been to Florida ↓
11 Val: Okay. Well, there's no other group I can put you in. You can write your own story, but you'll have to do all the work	↓	Maintains role of teacher/ leader in charge of the make up of the writing groups ↓	

In this interaction between Tony and his teacher, Tony takes on the role of gatekeeper and liaison between his writing group and teacher. He tries to get the teacher's attention (lines 1, 3) and expresses his concern because the groups are supposed to be writing cooperatively, but one of the group members, Mike, is not working with the other boys in his group (lines 5, 7, 8). Mike has been writing his own story; however, it turns out that Mike's story is on the same topic as his group members.

Tony assuming the social identity of liaison (lines 1, 3, 5, 7, 8) is interesting because often times he is the bully of the group. He has been known to steal pencils from group members when he feels like it and even got sent to the office once during a computer session for pulling another boy's ear. However, here he is taking on a role of importance, one that shows that he actually does care about his writing and the way his group interacts. It seems that he wants his group to be on-task and writing cooperatively, and he takes it upon himself to address the teacher and make things right. It seems that the DSP and the multimodal pedagogy involved offered many avenues for student engagement. It is very feasible to infer that Tony has also been "turned-around" (Kamler & Comber, 2005) because of his active engagement with the processes involved in cooperatively creating a digital story.

Val's dual identities of focused teacher (line 2) and leader in charge (lines 6, 9, 11) shows her maintaining her role as teacher and leader in a well run classroom. It also shows her role as decision maker who tries to make the best decisions regarding group work and classroom management. Although Mike was writing on his own next to the other two boys who were cooperatively writing (perhaps an example of parallel play in

the writing workshop), we were able to join the two stories during an editing session by deciding to make Tony and Raul's written text Chapter One and Mike's Chapter Two.

The next transcription exemplifies the Dogs in Space Group illustrating. It is actually an impromptu interview I had with the boys that I videotaped. Here is an excerpt from my fieldnotes to set the stage for the transcription: *So the children got into their groups and worked very hard on their illustration drafts. I noticed that many of the students were really gifted artists and complimented them. Mike and Raul were two artists that really stood out. I brought the camera over and had a quick impromptu interview with them about their images... Many of the students began to add color to their images. At one point Mike became very despondent and upset because he felt like he ruined his picture. I tried to console him by explaining that they were drafts and that the actual pictures to be used would be done later. He sulked with his head hanging down over the table for a while. (OC: I understood how he felt.) (Fieldnotes, 3/16/2007).*

**Transcript 4.6: Dogs in Space Group Impromptu Interview While Illustrating
3/16/07, 9:43 am**

Tony
((table)) Raul
Mike

- 01 Jane: Okay. So tell me about the picture a little bit.
- 02 Raul: That's Lieutenant Dog.
- 03 Jane: Lieutenant Dog.
- 04 Raul: The sun is actually shining on the mirror which is making the alien, the alien having its eye kind of burned so it's flaming.

05 Jane: Wow!

06 Raul: And the alien's kind of stinky.

07 Jane: Uh huh.

08 Raul: (Pointing: top right of the image) And it's a mover with lights in the ceiling.

09 Jane: Wow.

10 Raul: The spaceship is trying to head all the way to earth.

11 Jane: Holy smokes. Now I love your um the text here, like the way you made these letters.

12 Jane: And now is this all in the story or is this going to actually add on to the story?

13 Raul: This is in the story.

14 Jane: Wow.

15 Raul: And this... and the walls and the floor are titanium.

16 Jane: Holy smokes, holy smokes.

17 Jane: And let's look at this picture over here, too.

18 Jane: How about a little background information on this image?

19 Mike: Well, this picture has three dogs...

20 Jane: Yup. I see their space helmets, right? Wow.

21 Mike: And some planets and the rivers. And the title is, um, Dogs on Planets.

22 Jane: Uh huh.

23 Mike: And there's a bone behind the "s."

24 Jane: You have cool letters too, with the bones. Wow!

25 Mike: And the Earth is next to the "s."

26 Jane: And they're really out in space.

27 Jane: Is this going to be the cover page or an illustration inside?

28 Mike: The cover page.

29 Jane: Nice, nice. Holy smokes!

30 Jane: Okay. Let's take a look over here at planets in space, Dogs on Planets.

31 Jane: Wow. Nice work guys, nice work.

32 Jane: You want to explain this at all to me?

33 Tony: Yeah, um...okay. This is um, Saturn, Moon, Venus, Earth...

34 Mike: How about Jupiter?

35 Tony: Mercury, Mars, Jupiter...

36 Raul: Yeah, what about Jupiter?

37 Tony: Uranus, Neptune and Pluto.

38 Jane: And you got a dog out there?

39 Tony: Yup.

40 Jane: Oh! One's on Venus.

41 Mike: Did you say Saturn?

42 Tony: And he's got a force field and he got shot at.

43 Jane: I noticed that force field. Wow!

44 Tony: And, um, he's jumping from Neptune, just like him.

45 Tony: And he's, he's going like this and he's flipping over from Mercury.

46 Raul: You forgot something; you forgot the Sun.

47 Jane: You guys are really very talented.

48 Jane: I'm very impressed. All your illustrations are just incredible.

Table 4.6: Knowledge Building and Power as a Process from Transcript 4.6

Tony
 ((table)) Raul
 Mike

Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
01 Jane: Okay. So tell me about the picture a little bit.	Inquires about student's image	Initiating discussion ↓	Repositions student as source of knowledge/power
02 Raul: That's Lieutenant Dog.	Responds to inquiry	Positions student as illustrator and authority of image ↓	Accepts position of power
03 Jane: Lieutenant Dog.	Acknowledges response by restating dog's name		
04 Raul: The sun is actually shining on the mirror which is making the alien, the alien having its eye kind of burned so it's flaming.	Assumes role of teacher, explains details of image	↓ ↓	Assumes role of expert/ position of power

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Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
05 Jane: Wow!	Response of great interest	Emphasizes student's knowledge of topic ↓	Reinforces student's position of illustrator and expert
06 Raul: And the alien's kind of stinky.	Continues describing and explaining image	Adding Information and background knowledge ↓	Maintains role of expert
07 Jane: Uh huh.	Acknowledges sensory details		
08 Raul: (Pointing to the top right of the image) And it's a mover with lights in the ceiling.	Continues describing and explaining and assumes role of teacher		Maintains role of expert
09 Jane: Wow.	Response of interest	Emphasizes student's knowledge of topic ↓	Reinforces student's position
10 Raul: The spaceship is trying to head all the way to earth.	Adds important information about image's relationship to story's plot	Adding Information ↓	Maintains role of expert

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Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
11 Jane: Holy smokes. Now I love your um the text here, like the way you made these letters.	Response of great interest, acknowledges creativity in using fancy lettering	Emphasizes student's creativity ↓	Reinforces student's position of illustrator
12 Jane: And now is this all in the story or is this going to actually add on to the story?	Initiates discussion of connection between image and story	Seeks information to clarify image's relationship to existing story ↓	Repositions student as writer/illustrator
13 Raul: This is in the story.	Responds to question	Shares information to clarify image's relationship to story ↓	Assumes role of writer/illustrator
14 Jane: Wow.	Response of great interest		
15 Raul: And this... and the walls and the floor are titanium.	Continues discussion looking at other details	Adding information ↓	Begins to showcase knowledge of science/chemistry vocabulary
16 Jane: Holy smokes, holy smokes.	Response of great interest		

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Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
17 Jane: And let's look at this picture over here, too.	Initiates discussion about new image with Mike	Initiating discussion ↓	
18 Jane: How about a little background information on this image?	Inquires about image	Seeking elaboration ↓	Repositions student as source of knowledge/power
19 Mike: Well, this picture has three dogs...	Begins describing image	Begins discussion of image ↓	Assumes role of authority/ expert
20 Jane: Yup. I see their space helmets, right? Wow.	Notices details	Adds details ↓	
21 Mike: And some planets and the rivers. And the title is, um, Dogs on Planets.	Continues describing image, adds details	Adds information and background knowledge ↓	
22 Jane: Uh huh.	Acknowledges details		

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Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
23 Mike: And there's a bone behind the "s."	Gives details about lettering	Adds detailed Information ↓	Assumes role of illustrator/creator
24 Jane: You have cool letters too, with the bones. Wow!	Response of great interest, acknowledges creativity in using fancy lettering		Emphasizes student's creative use of text and image
25 Mike: And the Earth is next to the "s."	Continues to call attention to semiotic details	Adds information ↓	
26 Jane: And they're really out in space?	Inquires about the setting	Seeks clarification about setting ↓	
27 Jane: Is this going to be the cover page or an illustration inside?	Inquires about role of image	Positions student as expert ↓	Reinforces student's role as creator/expert
28 Mike: The cover page.	Clarifies role of image	Adds information about role of image ↓	Assumes role of illustrator/expert
29 Jane: Nice, nice. Holy smokes!	Response of great appreciation/ interest		Reinforces student's role as creative illustrator

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Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
30 Jane: Okay. Let's take a look over here at planets in space, Dogs on Planets.	Initiates discussion about new image with Tony		
31 Jane: Wow. Nice work guys, nice work.	Response of great appreciation/ interest		Positions students as capable writers/illustrators
32 Jane: You want to explain this at all to me?	Inquires about image	Positions student as expert ↓	
33 Tony: Yeah, um...okay. This is um, Saturn, Moon, Venus, Earth...	Begins to explain image	Adds information, uses knowledge of astronomy/science ↓	Assumes role of illustrator/expert
34 Mike: How about Jupiter?	Inquires about another planet	Seeks more information for clarity ↓	Questions authority of Tony
35 Tony: Mercury, Mars, Jupiter...	Continues to explain image	Adds information ↓	Continues assuming role of expert
36 Raul: Yeah, what about Jupiter?	Inquires about other planets	Reiterates seeking more information for clarity	Questions authority of Tony

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Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
37 Tony: Uranus, Neptune and Pluto.	Continues to explain image	↓ Adds information ↓	
38 Jane: And you got a dog out there?	Inquires about dog as character in setting		Continues to position student as expert
39 Tony: Yup.	Confirms question	Clarifies information about character ↓	
40 Jane: Oh! One's on Venus.	Notices more details about characters		
41 Mike: Did you say Saturn?	Inquires about other planets	Seeks whether more information is needed ↓	Questions authority of Tony
42 Tony: And he's got a force field and he got shot at.	Explains details and their relationship to the plot	Adds information and background knowledge ↓	Continues role of expert/illustrator assumes role of writer
43 Jane: I noticed that force field. Wow!	Acknowledges details		

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Message Unit	Social Interaction	Building Knowledge	Researcher's Comments
44 Tony: And, um, he's jumping from Neptune, just like him.	Gives more details	Adds information and background knowledge ↓	Continues assuming role of expert
45 Tony: And he's, he's going like this and he's flipping over from Mercury.	Gives more details	Adds information and background knowledge ↓	Continues assuming role of expert
46 Raul: You forgot something; you forgot the Sun.	Notices something missing	Seeks more information/missing object	Questions authority of Tony
47 Jane: You guys are really very talented.	Offers praise		Reinforces students' roles as illustrators/creators
48 Jane: I'm very impressed. All your illustrations are just incredible.	Offers praise		Reinforces students' roles as illustrators/creators

During this impromptu interview, the discourse begins between Raul and me as he begins to explain his illustration (See p. 188). Raul assumes the position of an illustrator who is an expert regarding his image. He goes into great detail explaining many aspects of the illustration: the name of the dog (line 2), the mirror with the reflection of light hitting alien's eye (line 4), and the smell (line 6). Raul reveals aspects of story's plot by describing the action that is taking place in the image (line 10). Also, in line 15 when Raul indicates that the walls and floor of the spaceship are titanium, he signifies that he is competent in effectively using certain words that convey an understanding of science terminology.

The conversation then moves to Mike's image (See p. 128). Mike also takes on the position of an illustrator who is an authority or expert about his image. He offers a few details about image: how many dogs (line 19), and the setting of planets with rivers (line 21). I add to the discussion of the image's details by noticing the space helmets on the dogs (line 20). Mike discusses a connection between letters and images (line 23, 25) and possible role of his image (line 28) as the cover of their upcoming digital book.

I then turn to Tony to ask him about his image (See p. 183). Tony also assumes the position of illustrator and expert. He points out the various planets in his drawing of the Solar System (lines 33, 35, 37). Raul and Mike question Tony's knowledge and authority by asking in a friendly but challenging tone if he forgot certain aspects of our Solar System: Jupiter (lines 34, 36), Saturn (line 41), and the Sun (line 46). Looking at Tony's image, Jupiter, Saturn and the Sun are present, as well as the other planets from our Solar System. Tony does not respond to their questioning but continues with his responses to my questions. He goes on to add details about his image: the dog's force

field (line 42), being shot at (line 42), jumping (line 44) and flipping in space (line 45). It is interesting to note that although the boys in this group are effective at collaborating together, they also are not afraid to challenge one another. It is possible that this aspect of the Dog Group's dynamic is what enabled them to weave such an intricate fictional tale while also using specific science terminology at the same time.

Knowledge is seen as power and "power is a product" (Bloome et al., 2005). The products here are the texts of illustrations that will be used in their digital stories. As knowledge is being built cooperatively, the facts take on important roles. For example, the way that Mike and Raul persistently make sure that all of the planets are represented in Tony's image. The boys all have some knowledge of the Solar System and its components; however, together they have a greater knowledge base than they do alone. The boys scaffold one another as they build their knowledge base, and this helps to broaden each student's zone of proximal development (Vygotsky, 1962, 1978). Knowledge is jointly constructed as they assert their knowledge, and question and guide one another.

Illustrating allows the student to add details not found in their written text. It also enables the student to guide their readers' imagination. Illustrating and the act of creating the image seem to give the students a deeper connection to the written text and therefore to the story. Utilizing classroom resources such as textbooks, dictionaries with pictures, and artifacts including globes and posters to inform their drawings added the element of conducting research which helped to position the students as well-informed. Discussing illustrations positions students as experts as they are the creators of the images and the story.

4.5 Students' Use of Imagery in Representing Alphabetic Text

The third research question asks, "How will the students use imagery in representing their alphabetic (or regular print) texts?" In looking at this last transcription (Transcription 4.6) and the analysis of the discourse (Table 4.6), the third research question has begun to be addressed. Table 4.6 reveals that the process of illustrating is empowering to the student as the "ownership" of their images positions them as experts and authorities on their images. Illustrating a written text brings another dimension to a literacy project as the process of creating an illustration allows the students to engage in yet another mode of communication.

In addressing this research question, imagery's role in representing the students' texts is quite significant, and two key aspects regarding the process of creating the digital books need to be mentioned. First, a large percentage of class time during the DSP was devoted to illustrating the digital stories. The initial drafts of the stories were written during the first month and a half of the implementation of the project (Jan. 26, 2007-March 9, 2007). During the week of Feb. 16, 2007, I began bringing writing groups to the two computers in order to introduce them to Word and the basic skills involved in word processing. Then, from mid March to mid May the two computers were always in use for word processing, creating layouts, or editing, and the digital camera was also often in use. The rest of the students who were not utilizing the computers or digital camera were engaged in illustrating their stories, editing, or pairing illustrations with text. Also, when asked in the second set of survey questions that were videotaped on May 21 and May 30, 2008, "What was your favorite part of the process of creating it [your digital story] and

why?" six of the nine students questioned responded by saying that drawing [or creating] the pictures was their favorite part of the process.

In order to take a closer look at how the students use imagery in representing their alphabetic texts, the two focal students' images and their corresponding written texts will be examined using constructs provided by Kress and van Leeuwen. It should be noted that once the written text of the story had been edited and the illustrations were complete, that is when the students, as a group, decided which images would be paired with which specific sentences of the written text.

According to Kress and van Leeuwen, "Composition then relates the representational and interactive meanings of the image to each other through three interrelated systems..." (Kress & van Leeuwen, 1996, p. 177). The three interrelated systems consist of: (1.) Information value or the placement of elements within the image; (2.) Saliency or to what degree an element is made to attract a viewer's attention; and (3.) Framing or whether or not framing devices have been used (Kress & van Leeuwen, 1996). Within the system of framing, the lines in the picture have the ability to connect or disconnect "elements of the image, signifying that they belong or do not belong together in some sense" (Kress & van Leeuwen, 1996, p. 177).

4.5.1 Mike's First Image

Focal student, Mike, created two images for their digital story, *Dogs on Planets*. In Image 1, the most dominant element or the element with the most "saliency" is a dog in a spacesuit which is placed to the left of the center of the image. The "information value" of an element in the left "zone" of an image corresponds to what Kress and van Leeuwen consider to be the "Given." The "Given" means that the "information value" of

this element is something that the viewer is already familiar with (Kress & van Leeuwen). In the lower corner of the right side of the image are the words, “Dogs in Space,” with an image of the Earth, which according to Mike, is directly over the word, space. This element being placed to the right of the center, is considered “New” which means “it is presented as something not yet known, or perhaps not yet agreed upon by the viewer, hence as something to which the viewer must pay special attention” (Kress & van Leeuwen, 1996, p. 181).

Also, because this element is in the lower quadrant, it also takes on the “informational value” of being “Real”, or something that offers the viewer details, or specific and practical information (Kress & van Leeuwen, 1996). This is opposed to being in the upper quadrant in which elements that are placed there are considered “Ideal” or “presented as the idealized or generalized essence of the information...” (Kress & van Leeuwen, 1996, p. 187).

The dog seems to be standing just outside of our Solar System. A Sun is visible behind the dog with rings around it including various planets and other smaller characters circling the Sun. The rings around the Sun act as a “framing” device for the dog in a spacesuit thus signifying that the dog somehow belongs with the Solar System. Because the dog is in a space suit, it can be inferred that he or she is possibly personified in some way and has assumed some human qualities. Since the dog is the most salient element and its location is not centered directly in the middle of the composition, the image is considered to be “polarized” (without an element in the center) (Kress & van Leeuwen, 1996).

Finally, because the outer rings of the Solar System are seen running through the written text there is a sense of “connection” between these elements. The Earth’s presence with the text, as well as the similar use of colors in both text and Solar System, adds to this sense of connection giving the text continuity with the Solar System and helping to prevent a sense of “disconnection” between these elements.



Figure 4.5: Mike’s First Illustration

Mike’s written text that was paired with this image reads, “Then a meteor came crashing down on Mars, so they jumped and landed on Saturn’s rings. They spun around and around and around until they landed on Earth, and they went surfing on the water at the beach.” It seems possible that this illustration represents either the dogs jumping off of Mars while they were in space before landing on Saturn’s rings, or when they spun

“around and around and around” before landing on the Earth. With either interpretation, the image does seem to work with the written text. It does not illustrate every aspect of the written text, but it does offer the viewer sensory details, like what the dog was wearing and the color of the planets, which are not contained in the written text.

4.5.2 Mike’s Second Image

In Figure 6, the largest element of the image, a paw (that looks like a skull) with crossbones, is seen “centered” directly in the middle of the image. The skull with crossbones is the element in this image with the most “salience” because of its size and placement. In the “margin” various planets are seen surrounding the paw and crossbones and the Sun is in the middle, directly over the paw. There are also two paw prints in the lower margin as well as two small dog heads that are placed within circles to the right and left of the skull with crossbones. The placement of the planets, the Sun and two paw prints could possibly be interpreted as a “frame” for this image as they are lined up and placed around the central element in the shape of a frame. This would indicate that these elements are connected in some way (Kress & van Leeuwen, 1996).

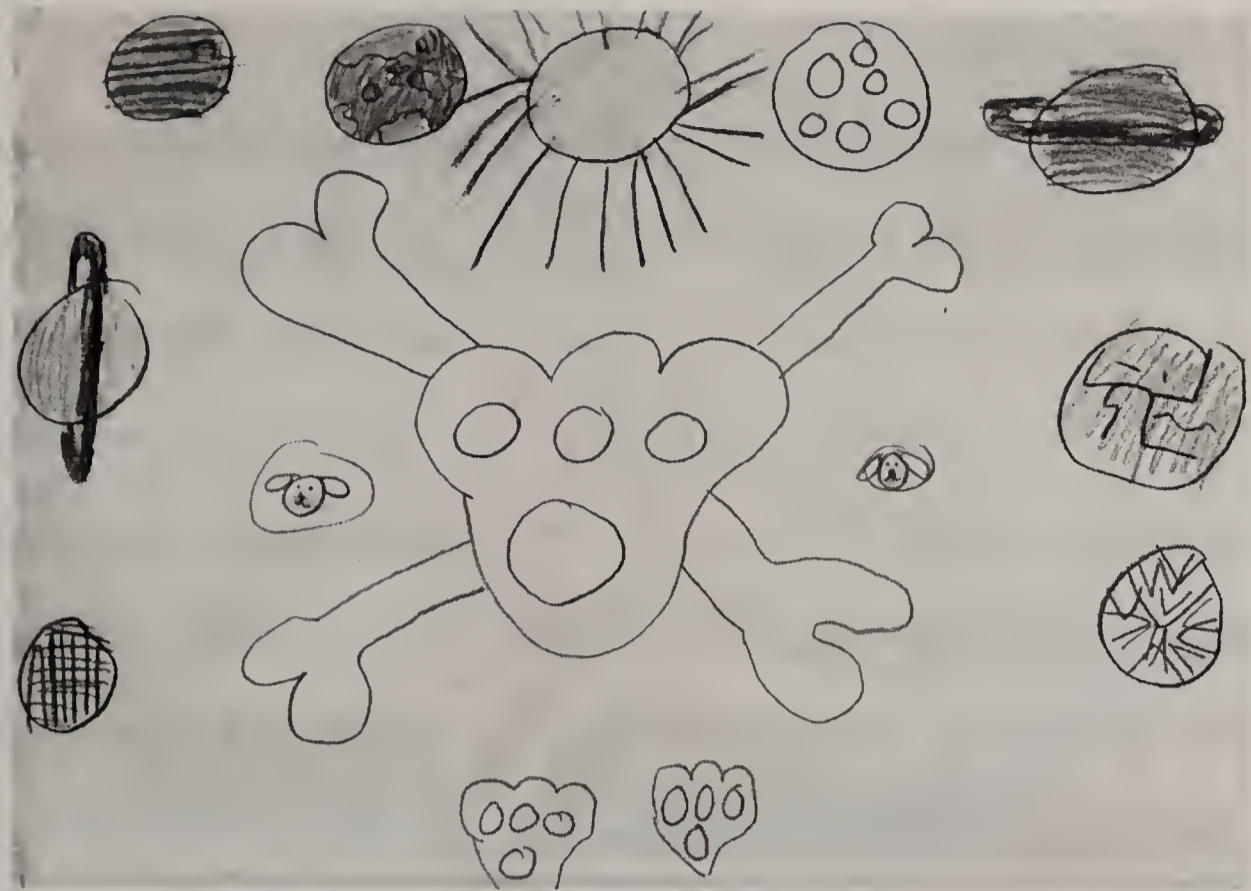


Figure 4.6: Mike's Second Illustration

The written text that is used on the page with this image reads, "Then a tornado hit the water and the dogs landed on Pluto. They were frozen for 2,000 years. The End" When interviewing Mike about their story, he told me that this image was his favorite. When asked why he responded, "Because when dogs were frozen, they had like a grave that looked like a bone..." He also added, "It looked like a bone but it looked like... but it was a paw with bones on it." (Fieldnotes, 5/30/2007) So according to Mike, the dogs had a grave. This could lead to the interpretation that because the dogs were frozen for 2,000 years that they were in fact dead or else they needed a grave to hold the frozen dogs for that extended time period. Again, as in Mike's previous illustration, the imagery is related to the corresponding text. Although it does not illustrate every aspect of the written text, it does sum up some of the main ideas found in the text and even adds details that offer the viewer ideas for contemplation. (E.g. Were the dogs really frozen or did they die?)

4.5.3 Amy's Image

Focal student, Amy, also created two illustrations, but in her case only one of them made it into the final copy of her group's digital story. Figure 4.7 is the illustration that was chosen for the group's story, *Three Camels Making Friends*, and it is an image of the story's main character, Maddy. There are only two main elements in this image, the girl who is connected by a line to a caption bubble that contains a cry for help. Since the two elements are connected, the girl with her caption bubble, and they are not competing with any other elements, together they have a high degree of "salience" (Kress & van Leeuwen, 1996).

As the girl is placed slightly to the left, the "informational value" of this element is that of "Given" or something the reader is already familiar with. The caption bubble is slightly to the right of center so its "informational value" is that of "New" or something the viewer does not yet know about. Also, because it is in the upper quadrant, it takes on the value of "Ideal" "or the generalized essence of the information" (Kress & van Leeuwen, 1996, p. 187). There are no lines or images placed in the margins and the illustration is void of any framing.



Figure 4.7: Amy's Illustration

The written text that the students chose to use with this image reads, "She screamed because she was lost and scared." The illustration and the text work very well together as the image really seems to depict the storyline of the written text. The image does offer the viewer sensory details about Maddy's appearance and her clothing that are not found in the written text as well as her cry for help. The text states that she cried for help but the reader/viewer does not know exactly what her utterance was until viewing the image.

CHAPTER 5
SUMMARY, CONCLUSIONS, IMPLICATIONS,
AND RECOMMENDATIONS

5.1 Summary of Findings

The students in Room 10 began this Digital Storytelling Project (DSP) with very little prior knowledge of computer use in an educational setting. For the majority of students who had any previous experience, their prior computer use had mainly been focused on playing computer games. This study introduced using the computer for word processing and creating page layouts that incorporated their alphabetic text with their hand-drawn and then digitalized images.

The use of digital media equipment (the video cameras and digital camera) was also introduced to the students, and the majority of them expressed in various ways that this aspect of the project was a new and exciting experience. In response to my informal survey, most of the students' responses were very positive, and I've chosen a few examples of the students' replies in order to exemplify the charged and stimulating classroom atmosphere that was evident during the DSP. When asked what the students have learned from participating in the DSP, Raul's reply was, "What I've learned is, space can be more exciting than plain old Earth, and we can have lots of fun making up our own stories." When asked about how it felt to work in a group in the DSP, Ariel response was, "I feel excited and happy." Also, when asked what it is about filming that the students liked, a male from the Money Group's reply was, "It's really exciting because... we're being filmed, and we can do things we never did before." And Jamal's

response the previous question was, “It’s exciting ‘cause I’m having a really lot of fun. I’m having a blast.”

This DSP took on a semiotic approach to literacy learning and was clearly well received by the students as they were immersed in a multimodal pedagogy that included writing, drawing, and various forms of technology. It brought them a greater awareness of the many possible modes of meaning making, and it also gave them a choice of mediums (e.g. writing, drawing, word processing, creating layouts on the computer screen, digital cameras) to use allowing individual students to explore options and find modes of meaning making that appealed to them. Like the Cowan and Albers’ study, this project allowed the students to engage in “richer and more complex literacy practices” (Conway and Albers, 2006, p. 124) such as integrating the arts with their written word.

From the literacy events that were transcribed and looked at through the lens of critical discourse analysis (CDA), it appears that social identities were being built as the student cooperatively wrote and their stories. Bloome et al.’s assertion that the constructs of identity and knowledge cannot be separated reveals itself as the students’ discourse is analyzed looking at literacy as a product of power (Bloome et al., 2005). While the students collaborated and shared their ideas during the writing process, it demonstrated that “learning language and social skills are “inextricably’ linked” (Dyson, 1993, p. 80). As individual students brought their own unique attributes to the group dynamic, they shared their knowledge of how to construct a story and learned from one another. As they built knowledge together, each student’s zone of proximal development (Vygotsky, 1962, 1978) had the potential of being broadened by these interactions.

Finally, when analyzing the illustrations and their connection to the written text, a reoccurring theme here appears to be that illustrating a story gives the students the opportunity to embellish or adds details to their written work. Looking at the elaborate details seen in Mike and Raul's images, as well as the simple details found in Amy's illustration, it seems that the act of creating an image gives the students a way of being creative that is not always possible through the written word. I have to agree with Kress and van Leeuwen's assertion that semiotic texts almost always take on the quality of being generative because they are capable of expanding the signmaker's initial meaning (Kress & van Leeuwen, 1996).

The computer had an important role when it came to pairing the hand drawn images with the students' written texts. Scanning the hand drawn images for digitalization allowed the images to take on new dimensions on the computer screen, and this enabled the images to be easily paired with the students' word processed alphabetic texts. With a stroke of the mouse the images could be resized and with the key strokes of control x and control v (cut and paste) they could be moved around on the page on the computer screen. This allowed for ease in creating each page's layout. Without the use of computer technology, assembling the storybooks would have been a cumbersome task and the end products would not have been as polished or as professional looking.

Through this Digital Storytelling Project, the students utilized familiar skills as they embraced the written word and then illustrated their hand written texts; however, they also gained knowledge about how to turn these two modes of communication into digital formats as they became introduced to the use of computer and digital media technology. Using the word processing application, Word, they typed their hand scribed

texts and turned them into word processed texts. Then, they took their scanned hand drawn images and learned how to pair these with their word processed texts as they created each page's layout while assembling their digital story books. The students also were introduced to the use of digital cameras and became acquainted with digital and VHS video cameras as I almost always had three video cameras rolling during the class time devoted to our DSP. Many of the students were eager to help break down the video equipment and I allowed students to help with this process. This newfound knowledge of word processing, using scanned images, creating layouts on the computer screen, using digital cameras, and becoming acquainted with digital and VHS video recording equipment was a key benefit of this DSP as it allowed the students from Room 10 to begin their journey across the "digital divide" and to become part of the literary movement that Luke and Elkins call the "New Times." It seems possible that they began to grasp the concept that "The word and the book are here to stay, but they are being transformed in relation to new technologies, new cultures and new forms of life" (Luke & Elkins, 1998, p. 7).

5.2 The Data's Connection to the Literature

As included in my literature review, an overview of today's current educational computer technology includes: Web Quests (Christie, 1996; Dodge, 1998; Schrock, 2001), podcasts (Richardson, 2005/6), blogs and wikis (Barton, 2005), imovie and Windows Movie Maker (Peterson, 2005), and pedagogy and theory (Luke and Elkins, 1998). This overview assisted me in understanding how the DSP and its introduction of computer and digital media technology in an urban second grade classroom fit in with the current technology trends in education.

The Kaiser Family Foundation (2004) defines the digital divide as “the gap between those who have ‘ever’ and those who have ‘never’ used a computer or the Internet.” Along with Warschauer et al. (2004) and Haycock (2004), the Kaiser Family Foundation’s (2004) discussion of the digital divide helps to illuminate where the students from Room 10 stood in terms of the divide. Initially many of the students had never used computers before while some had used computers for playing games.

With the advent of the DSP, the students became more knowledgeable about computer use as they gained skills in word processing, manipulating scanned and digitalized images, creating page layouts and using digital cameras. Warschauer et al. assert that a more equal distribution of computers (and Internet access) can be viewed as a powerful tool that may even help to level the playing field for marginalized students. Without this equitable access, many surmise that this may even increase the social as well as educational stratification, thus helping to perpetuate the marginalization of some students (Warschauer, Knobel, & Stone, 2004, p. 563). The focus of the DSP in teaching students how to use computers was, in fact, a way to help overcome the digital divide in one urban classroom.

As the literature informs us, not all educators have embraced the use of technology in their classrooms (Roche-Smith, 2004; DiBello, 2005; Educational Leadership, 2005/6). There are many educators who have not been adequately trained in using educational technology, and without the proper training, teachers find it difficult to incorporate technology in their classrooms (DiBello, 2005). Also, statistics from Educational Leadership show that 24.5 percent of the teachers they surveyed didn’t find

computer technology effective for teaching in their content area (Educational Leadership, 2005/6).

Although the classroom teacher with whom I worked was a novice with computer technology, she did allow my technologically driven study to take place in her classroom. This was an important factor in giving her the confidence she needed to use educational technology in her classroom. During the course of our DSP, Val only allowed students access to the two computers when I was present. However, once the DSP was completed, she felt more comfortable using the computer herself and then began to let her students have access to the word processing application, Word, on the computer. Under Val's supervision, her students typed up thank you notes to me (See Appendix H) using the knowledge they gained from our DSP. Val even went as far as sharing this newfound knowledge of using computer technology in her classroom as she revealed to her students, that I was her "secret computer teacher" who was teaching her "all about it" (From Transcript 4.1).

According to Luke and Elkins, the "New Times" that we are in call for the important task of educators to understand how the new and old technologies are creating new demands upon our students (Luke and Elkins, 1998). Over the course of the DSP, the students learned how to turn their hand written texts into word processed texts. They also learned that their hand drawn images could be scanned for digitalization, and once their word processed texts and scanned and digitalized images were made available on the computer screen, they learned to create page layouts as they assembled their digital storybooks. Through these processes, this study did make room for the classroom teacher and her students to gain an understanding of how the use of new technologies, like

computers and digital cameras, could work together with old technologies, like the pencil and paper, as we forged ahead embracing these new demands in this “new vision of the future of literacy” (Luke and Elkins, 1998, p. 4).

Many scholars addressed the notion of digital hybridity of text and image, or the relationship between image and text in our technological world (Kress & van Leeuwen, 1996; Bolter, 2001; Kress, 2005; Moran, 2005; Prior, 2005). The study I implemented enables the observation of the relationship between alphabetic text and imagery in literacy learning as the second graders in this study composed and illustrated their digital stories. The study delves deeply into this relationship between text and image as the students’ thoughts, reactions and feelings about the processes of writing and illustrating their alphabetic texts are revealed.

The social aspects of literacy learning are also attended to as the cooperative writing groups collaboratively wrote their stories. Discourse between the group members and the CDA employed on their conversations using Bloome et al.’s (2005) model of “power as a product” with literacy being the product, reveal how knowledge was built among the students. The discourse also helped to show how the students’ social identities took shape as they interacted with one another in the processes of positioning themselves as writers. Cameron posits that identity is “shifting and multiple” (2001, p. 170) and as the students cooperatively constructed their stories and the images that helped to exemplify their written texts, their identities were continually being reconstructed through their interpersonal interactions.

Regarding the students’ use of imagery, Kress and van Leeuwen’s (1996) constructs of “informational value,” “salience” and “framing” aided in the analysis of

hand drawn pictures that the students created to illustrate their stories. A theme that manifested itself in the students' use of imagery with written text is that they were able to embellish their written texts by adding details that had not been written about. For example, Mike's first illustration that was analyzed in Chapter 4 offers the viewer sensory details, like what the dog in space was wearing, as well as the color of the planets. None of these details are contained in the written text, thus the illustration does allow Mike to embellish his alphabetic text with details that are not written about.

The evidence from the students' responses and the transcriptions suggest that it is a very empowering act for students to engage in illustrating their written work. As the students go through the process of creating an illustration that represents their written text (use of two modes of representation), the CDA employed (Bloome et al., 2005) on various transcripts indicates that the students assumed the dual roles of illustrator and writer while being firmly engaged in multimodal representation. Pairing literacy acquisition with a form of the arts like drawing seems to increase students' levels of engagement, enthusiasm, and ownership. As Cowen and Albers (2006) posit, social semiotics can be a very potent tool for engaging students.

This engagement was evident in the students' excitement each Friday as I entered their classroom. Often, upon my arrival, there often would be whoops of happiness, sometimes applause, and one day, I fondly remember a student proclaiming, "Yay! She's here! The one who takes pictures" (Fieldnotes, 3/23/2007). Another concrete example of this ownership and engagement is seen in Transcript 4.5. Tony, a student who had a history of off-task and disruptive behavior, took charge of his group's level of cooperative writing as he discussed with his teacher issues on Mike not writing the same

story as he and Raul. Using the students' affirmative interactions and reactions as a gauge, it was clear that the students had a very positive response to the implementation of the DSP.

5.2.1 Students' Utilization of Various Modes of Communication

The students expressed their pleasure in having a choice in which mode they used to communicate meaning and having this choice allowed the students to engage in modes that appealed to them. As previously mentioned, certain students, like Mike and Raul, excelled at drawing, while others, like Amy, begged for more computer time. There were also students, like Jamal, who was truly excited and fully engaged when he was using the digital camera. The modes of communication that this project offered that the students were familiar with included writing and drawing by hand. The new design modes that were introduced by this project that enabled the students to expand their repertoires of communication included the use of computer technology as they learned how to word process written texts, using and manipulating hand drawn images that had been scanned for digitalization, and creating layouts on the computer screen that incorporated these digitalized images and their word processed texts. The use of digital cameras was another mode of communication introduced to the students, and although they were not allowed direct access to the digital and VHS video recording equipment, it became a mode that they were becoming familiar with as I had three video cameras present and running during most of the DSP. Several students, including Tony, often asked if they could help break down this equipment at the end of the DSP period. I showed them how to break down the tripods and also allowed them to help put away the video cameras.

Incorporating new modes of communication with the modes that the students were already familiar with appeared to allow them to understand how their prior knowledge of writing and drawing by hand could be assimilated and used with the newer technological modes.

Table 5.1: Modes of Meaning Making

Design Mode:	Examples:
Linguistic Design:	Delivery of discourse Vocabulary Modality Oral discourse Classroom texts Handwritten student texts Word processed student texts
Visual Design:	Creating images Digital camera images Hand drawn pictures Modality Colored pencils and crayons Use of line Colors Placement of objects
Gestural Design:	Behavior of students Gestures Awareness of senses Newly learned gestures Use of computer (E.g. Keyboard, mouse) Use of digital camera Taking pictures and posing for pictures
Audio Design:	Songs and sound effects
Spatial Design:	Layout: incorporating text and image on each page of digital books

This table was adopted from the New London Group's article, "A Pedagogy of Multiliteracies: Designing Social Futures." It shows the various modes identified by the New London Group and gives examples from the DSP regarding how the students

engaged in utilizing the various modes or “grammars” (New London Group, 1996) of

Design. According to the New London Group:

One of the key ideas informing the notion of multiliteracies is the increasing complexity and inter-relationship of different modes of meaning. We have identified six major areas in which functional grammars – the metalanguages that describe and explain patterns of meaning – are required: Linguistic Design, Visual Design, Audio Design, Gestural Design, Spatial Design, and Multimodal Design. Multimodal Design is of a different order to the other five modes of meaning; it represents the pattern of interconnection between the modes. We are using the word “grammar” here in a positive sense, as a specialized language that describes patterns of representation. (1996, p. 78)

In the realm of Linguistic Design, exemplification of this includes the students’ delivery of discourse and the vocabulary they used as they interacted with each other as well as with the teacher/researchers. The modalities employed within this mode included their oral discourse, the classroom texts that were used as resources during the writing and drawing processes, and their written texts including both hand written and word processed texts.

The mode of Visual Design was utilized as the students used digital cameras to capture images of one another, and also as the students engaged in drawing pictures by hand in order to illustrate their stories. The digitalization of their hand drawn images was another aspect of Visual Design that allowed the students to hybridize or incorporate image and text in order to easily create layouts (See Spatial Design). The modalities in the realm of Visual Design included: digitally created images, colored pencils and crayons, line, and colors as well as the placement of the objects on their paper.

Gestural Design and Audio Design were evident in various aspects of the process of creating the digital storybooks. Gestural Design was exemplified in the behavior of the

students, the gestures they used as they communicated, and the gestures that indicated their feelings and their awareness of their senses. The use of digital equipment, like the cameras and computers, brought about new ways of moving or gesturing as the students learned how to successfully operate the camera and the computer. The mode of Audio Design was employed as some of the students used sound effects (e.g. Angel) as they communicated in their writing groups, and also the songs that the students would sometimes sing (e.g. Mike) as they engaged in writing and drawing.

Finally, Spatial Design was utilized as the students learned how to incorporate text and image on the computer screen in the final steps of piecing together their digital stories. The students learned how to cut and paste their images as well as how to resize them, and they made decisions about where to place the images in relation to the alphabetic text of the story. For each page of every book, creating a layout was part of the process that the students engaged in.

5.3 Conclusions

The analysis of data has been guided by my research questions, and my conclusions have been guided by my analysis. In addressing my first research question, "In a classroom where most of the students have never used computers before as learning tools, what happens as they learn to create books using digital means?" the data presents many interesting outcomes. The introduction of digital literacies in the form of using computers to word process their stories, to combine text and image (scanned and digitalized hand drawn illustrations), and to create page layouts was a source of fascination and intrigue to the students in Room 10. Being allowed to actively engage in

using these new digital formats seemed to energize and stimulate the students as it greatly captivated their interest and attention.

Not only were the students engaged and excited as they learned new literacy skills on the computer while they engaged in creating digital stories, but the classroom teacher was also stimulated as she too learned new technology skills alongside her students. Also, once the DSP was finished, she continued her use of the computer even when the researcher was absent. The heightened attention span of the students seen in the fieldnotes (beginning on p. 73 of Chapter 4) as they learned how to cut, paste and resize their images when pairing images with alphabetic texts is one example that illustrates how captivated the students were in obtaining these new computer skills. The looks of surprise and pleasure as the students from the Camel Group initially witnessed my demonstrating how to cut and paste images on the computer screen, and the way the students smiled at one another are actions that indicate their enthusiasm and their increased level of attentiveness. It was also revealing that each student decided to stand or remained standing to be as close to the computer as possible after getting a chance to complete the cutting and pasting of their own image. The students were clearly quite excited, and as they learned this new set of computer skills, they were more attentive throughout these tasks than during any other classroom activity I had ever witnessed.

Another example that showcases the reactions of learning to create books using digital means is the way Val, the classroom teacher, opened up to her students about gaining computer literacy as she learned beside them, as seen in Transcript 4.1. In line 3, Val shares with her students, "Ms. Carey has been kinda my secret computer teacher. She's been teaching me little things about using the computer." The students respond to

this discloser with chatter, whispers and some giggling, and one student even responds to her statement by asking, "For real?" Val's discloser along with the students' responses is indicative of the stimulating classroom atmosphere, not only for the students, but for the teacher as well.

This DSP was designed to utilize multimodal instruction as it offered the students a variety of modes to engage in. From the skills that they were already comfortable with like writing and drawing by hand, to the technologically based skills like word processing, and creating layouts by cutting, pasting, and resizing images on the computer screen, to the use of digital cameras, there were many avenues of communication offered that the students could engage in. The students in Room 10 responded to this type of instruction by discovering that they had preferences for different modes of communication; some students were drawn to the computers and preferred the word processing while some favored the creation of layouts, others were attracted to writing or drawing by hand, and still others to using digital cameras.

This type of multimodal instruction, based on a social semiotic approach to literacy learning, offered many modes of meaning making that fostered student engagement. Giving the students a choice of which mode to use appeared to enable them to find their own voice, their own niche, and allowed them to engage in something they are passionate about. Pairing the social semiotic approach to learning with the use of computer technology seems to be a powerful way to engage students, including at risk, average and role model students. Adopting the use of computer technology not only offered the students new ways of thinking about communicating, but it also required the students to engage in new vocabularies (New London Group, 1996).

This emergent computer literacy seemed to change how the students viewed themselves as learners, and it even had an impact on their everyday discourse. As was the case with Mike, he easily assimilated technology based vocabulary in his everyday discourse. The way Mike's vocabulary easily took on words like "digital" was indicative of his ability to take in and effectively use this new information and the new language that came along with it. When asked, "How do you feel about becoming a student who knows about technology/ computers?" Foster replied, "I think it's good. Sometimes you might have homework to do on the computer." And Raul stated, "Really good. Cause when I'm gonna grow up, I would use a lot more technology than just the computer." Foster and Raul's responses signify that they knew that this new knowledge was something that would serve them not only in their present situation, but also in the future as well. The New London Group's aim of creating competent and skilled workers of the future (The New London Group, 1996) through the use of multimodal instruction (including technology) appears to be manifesting itself here as the students from Room 10 are taking in this knowledge of technology and projecting their skills to future homework assignment as well as seeing how this comprehension could possibly lead to using more and different types of technology in the future.

Moving on to my second research question, "How will the students cooperatively position themselves as writers, and how will they influence one another?" the data offers a unique view into the social aspects of literacy learning. As the students in Room 10 created digital stories in cooperative writing groups, they jointly constructed knowledge using their imaginations, their prior knowledge, and the classroom resources. Each student brought their own individual attributes to the table, and collectively they shared in

the decision making involved in designing a story. In doing so, they positioned themselves and one another as authorities, who were successful and creative writers and illustrators. As this cooperative construction of knowledge took place, social identities that were “shifting and multiple” (Cameron, 2001, p. 170) were also being constructed and reconstructed through their discourse and interactions.

In Table 4.1, which begins on page 88, the Camel Group is interacting and striving to cooperatively write their story. Angel’s off-task behavior is apparent as he assumes the roles of attention-seeker, clown, magician and victim; however, the rest of the group pays little attention to his antics. This lack of reinforcement and the group’s positioning of Angel as a “nonperson” (Bloome et al., 2005) is a probable cause for Angel to cease his disruptive behavior, which he eventually does. In Transcript 4.3 (p. 97), Angel is still a distracted and off-task group member while the group is busy discussing what food should be brought to the characters in their story. Again, he is largely ignored by his group members as they continue working on their story. Then, in Transcript 4.4 (p. 106), Angel has become an active and on-task group member who appears to be enjoying his task of illustrating the food in their story. He even asks me, “Can we do this next time?” and it seems that because his social identity has been “turned around” (Kamler and Comber, 2005), as his identity shifted to that of an on-task, productive group member. It appears that his peers’ expectations, as well as his finding a mode of communication that he enjoys (illustrating), have helped to reposition him in a positive way, as a successful writer and illustrator.

Another example of how the students help to positively position one another as successful writers is seen in the interaction between Tony, Val, and his writing group in

Transcript 4.5, on page 108. Tony is concerned because Mike has deviated from the Dogs in Space Group's cooperative writing, and although he and Raul are writing the same thing for their story, Mike is not. Tony takes it upon himself, acting as a liaison/gatekeeper for his group and approaches the classroom teacher to let her know about the issue. Val indicates that they need to remain in a group together, and the boys in the Dogs in Space group continue to work alongside one another. They eventually decide that even though Mike's story was different than Raul and Tony's, that because the writing was all on the same topic, they could join the two stories in a chapter book. Again, the social interactions between the group members help to define the "shifting" social identities of the students (e.g. Tony as liaison/gatekeeper), and they position one another in a positive way enabling one another to be successful writers.

An additional instance from the discourse analysis that shows how the students are positioning and influencing one another can be seen in Transcript 4.6, on page 112. The students in the Dogs in Space group are discussing their illustrations with me during an impromptu interview. It is clear that each boy has some knowledge of the Solar System, as they indicate which planets are part of the system. They also take it upon themselves to affably challenge one another's knowledge as Raul and Mike dispute Tony's inclusion of all of the planets (lines 34, 36, 41, 46). It appears that while each group member does have some knowledge of the Solar System, collectively they have a greater knowledge base. By questioning and challenging one another, they are able to keep their facts straight and although their story is fictional, they clearly want to correctly represent the Solar System by not omitting any of the planets. The students' identities as knowledgeable "scientists" and creative writers and illustrators who act as guides for one

another again correspond to Bloome et al.'s assertion that, "...identity and knowledge are inseparable constructs. They always implicate each other" (Bloome et al., 2005, p. 194).

And in this case of cooperatively writing and illustrating stories, both the students' identities, as well as their knowledge, positively influence and guide each other.

Finally, it is also interesting to note that the students collaboratively chose topics in which the use of their imaginations was an essential aspect. By doing so it appears that they were positioning each other as creative and imaginative writers and illustrators. Two groups focused on space, with one being a fictional tale and the other a nonfiction book, and another group chose camels and the desert as main elements in their story. The solitary writer wrote about Florida, a place she only occasionally visits. Also, there was one group that decided to create a nonfiction book on the topic of money. According to Val, all of these students are from low income families and therefore money is not something that they have a lot of. By choosing to focus on places they have never been (e.g. space and the desert) or have only gone to on occasion (e.g. Florida) and things they were completely or somewhat unfamiliar with (e.g. camels and money), it allowed them to abundantly engage in the use of their imaginations as they wrote and illustrated their stories.

The third research question asks, "How will the students use imagery in representing their alphabetic (or regular print) texts?" As the students created and used imagery to help represent their alphabetic texts, the data has made it evident that the imagery and the roles that the imagery took on were of great importance. There are four main aspects to the use of imagery and to the roles that students gave to the process of creating images that I will be addressing. First, creating or drawing the pictures that were

to be used in the digital story books was a source of great pleasure for the majority of the students. Second, a large percentage of the class time was devoted to illustrating. Third, drawing and then utilizing these student generated images by incorporating them into the digital storybooks was a source of power for the students which appeared to give them a sense of control over their learning environment. And finally, the illustrations allowed the students to elaborate on their story lines as they added visual details that were not found in the written texts.

As previously mentioned in Chapter Four, section 4.5, the results to the second question in the second survey, “What was your favorite part of the process of creating it [your digital story] and why?” reveal that the majority of the students (six out of nine) who responded to this inquiry indicated that drawing the pictures was their favorite part of the process of creating their books. Marc’s reply to this question was, “Drawing the pictures, coloring.” And Mike’s response was, “My favorite part of creating was the pictures because we get to color and we get to make our own pictures.” Evidently, there was an aspect of using colors when illustrating that appealed to both of these boys. Ray’s response was, “Drawing the pictures because I’m really good at drawing money.” It is possible that because the students were utilizing a skill that they were already familiar with and some of them felt like they were talented or “good at it” that this helped to make the process of creating illustrations a positive and rewarding experience.

Another interesting aspect regarding the significance of illustrating and the role(s) it took on, is the fact that much of their DSP class time was devoted to the act of illustrating and/or utilizing the illustrations that the students made. The implementation of the DSP spanned from mid January to the end of May of 2007. Throughout March, April

and May, DSP class time was devoted to word processing, taking digital pictures, illustrating and using these illustrations in conjunction with the technology that was introduced. Because there were only two classroom computers and one digital camera, this limited the number of students who could engage in these activities. The rest of students, during these months, were occupied with either editing or with activities related to illustrating. Some of the activities that the students were involved with during this time period that related directly to illustrating included: using classroom resources such as textbooks, dictionaries, and artifacts like globes and posters of the Solar System to help inform their drawing, pairing alphabetic texts with illustrations, creating layouts on the computer screen using scanned and digitalized hand drawn images and word processed texts.

In a number of the transcriptions, the students' ownership of their images is evident, and it seems that the process of creating these pictures gave the students a sense of power and control over their educational environment. In Table 4.3, the discourse is focused on what food should be brought to the girl who is lost in the Camel Group's story. As the students deliberate about what kind of popcorn would be best to bring, in lines 01- 07, it is evident that they are making this decision as a group and that consensus is essential. They share the power of making these important choices that effect the creation of their digital storybook. Having this power to choose elements that will actually be in their stories, as well as the power to decide how to design their individual images helps to position the students as authorities of their work and images. This sense of power also allows them to have some control over their educational environment. Instead of having a teacher there telling them exactly how to accomplish this project,

these students were given the leeway to decide for themselves thus fostering self-development, cooperation among group members, and the ability to make decisions.

In Table 4.6, the students discuss their individual images with me. In taking on the role of illustrator, as the students created original images, this appears to have enabled the student to become the authority of their image. For example, in line 04 when Raul says, "...the alien's having its eye kind of burned so it's flaming," he assumes the role of teacher as he explains the details of his image to me. As illustrators, they are the ones who know what each line represents, and they seem pleased to take on the role of teacher or expert as they explain to me the significance of the image's details. As the students are in charge of the decision making regarding not only the text of the story but also about the illustrations that go along with it, they are positioned as experts and authorities. This seems to allow the students to not only feel a sense of power over their literacy learning, but it appears to help increase their engagement, excitement and ownership of the learning process.

The use of detail in some of the students' imagery exemplifies the final point about the use of imagery, that creating images for the stories allows the students to embellish their storylines and add specific details that are not necessarily found in the written text. Raul's previous example about how the alien was having his eye burned also shows how the students used their images not only to guide the reader's imagination through the text of the story, but also to elaborate and add significant details to the story. In line 20, also from Table 4.6, Mike's illustration (Figure 4.5, p. 128) also offers substantial information (e.g. the dog's space helmet, his spacesuit, the emblem on the spacesuit, two other dogs with one on a rocket, the planets and their rotational paths

around the sun) that are not found in the written text, and add sensory details as well as scientific knowledge to the story. Finally, in Tony's image that was discussed in Table 4.6, it includes dogs (one who is using a weapon in space) amidst all of the planets in our Solar System, and it is evident that aspects of his scientific knowledge (e.g. the names of the planets) are utilized as he adds realistic details to the story.

The DSP helped to bring the arts into the classroom, and one specific aspect of this was the utilization of drawing. It seems that by illustrating the stories as well as penning them, this use of imagery gave the authors a way to guide their readers' imaginations. The use of the imagination is a source of power, and their imaginations were given a voice as they created their digital storybooks using the formats of text and image. It is possible that the use of imagery with text, or digital hybridity of text and image, was a source of power that added to the students feeling of accomplishment; it gave them a sense of mastery over their projects and therefore their learning environment. As the students created their own projects and found their own unique voices, Green's assertion is made evident: that bringing the arts into the classroom is highly beneficial as the arts promote the unleashing of the imagination (Greene, 1995).

I have a few closing thought to add to this discussion of imagery and its use by the students as they created their digital stories. First, the imagination is crucial in both the generation of written text as well as in creating illustrations. According to research that addresses brain-based teaching and learning, writing would use the left side of the brain as the left hemisphere deals with language and logic, while illustrating would use the right side of the brain as the right hemisphere deals with symbols and visual representation (Jensen, 2005). By incorporating both modes of communication, both

hemispheres of the brain were utilized, thus having a more profound effect of the students' engagement and depth of learning.

Second, it seems that the scanning and digitalization of the students hand drawn images added to the students' fascination with the computer and its affordances. Once the image was digitalized and on the computer screen, the students learned that they could alter the images size with a swipe of the mouse or move it to another page by using the editing functions control x and control v. These added elements of control over their images, as well as the images' transformation onto the computer screen increased the students' level of control and gave them a power over their images that they never had before.

As previously mentioned, Prior asserts that each mode offers a different type of affordance (Prior, 2005). With the DSP, we see different modes working together and their affordances are synergized by their being used in conjunction with another mode. An excellent example of this can be seen in the previous paragraph, using the mode of hand drawn illustrations and pairing it with the mode of computer technology. Once the images were scanned for digitalization, they took on new dimensions as they could easily be manipulated, changed in size, moved from one page to the next, as well as being easily paired with the word processed text. Their combined effects or affordances are definitely greater than their individual effects. In Kress and Van Lueeven's 2001 book, *Multimodal Discourse*, they indicate that before the advent of personal computers, when monomodality (using one mode of communication at a time) was the norm, design did not play a big role in communication. However, as multimodality has recently become central to communication (with desktop publishing and Website design) design now does

play a big role (Kress & Van Leeuwen, 2001). In this DSP, activities that were grounded in social semiotics paired with the use of computer technology helped enable the students to become active designers who were effective at using their multimodal resources in order to create and communicate.

Although using the computer as an educational tool offers many advantages, it also has its limitations and should not be viewed as a cure all to literacy instruction. One of the main limitations of using computers in the classroom is the way it is more often than not a solitary activity. Yes, it offers many diverse ways of incorporating different modes of communicating, but it is set up to be used by a single user at a time. The socialization that occurs when students are “plugged in” to their computers is somewhat limited. This is one reason why it appeared to be advantageous to have the students cooperatively write and illustrate their stories before turning their hand written texts into word processed texts and hand drawn images into digital images. This project was not just about learning about technology, but also about participating in a program that was grounded in social semiotics. The social interactions as the students wrote, illustrated and then digitalized their stories suggests that knowledge is socially constructed, and very likely this was far more of valuable experience than if we had had the students writing by themselves and then learning to type and create layouts on a computer screen as solitary activities.

In creating literacy activities that are multimodal, I do believe that the computer does have much to offer; however, the evidence of students’ engagement and responses indicate that employing various modes of communication that employ the grammars or Designs that New London Group have identified (Linguistic, Visual, Gestural, Audio,

and Spatial Designs) is a crucial aspect of making these activities truly engaging and meaningful. Simply using a computer is not enough. It needs to be paired with semiotic activities that are socially engaging. Although various form of knowledge can be enhanced by computer use, (e.g. Web quests, educational CD ROMs, grammar based Web sites) knowledge is socially constructed, and the evidence from this data suggests it is much more of a meaningful experience when it is shared collectively among the students and teachers of a classroom.

Finally, I have one more concluding thought to add. After having worked with this group of students as they created digital stories, and after all of the analysis and application of theory to my data, I'd like to attempt to address Kress's assertion that image and text are at odds in our current world, each one vying to be the more dominant mode of communication. My response is that it is possible that this is happening. However, through time, from the very beginning stages of writing when hieroglyphics were used, up until now, our society's reliance on texts have included a fascination with imagery. I believe there does not have to be a contest. Why can't it be accepted that text and image are complimentary modes of communication? Not only do they have much to offer one another as their differing ways of creating meaning have the potential to synergize each other, but put quite simply - they often work very well together.

5.4 Implications

One of the more remarkable themes that seemed to surface from the analysis of discourse was the potential that this multimodal pedagogy has for at-risk-students. It appears that having the students engage in a project that offered many modes of meaning making allowed individual student to find some way of communicating that appealed to

them. This opened up the possibility of “turning-around” (Kamler & Comber, 2005) students who had previously lacked engagement with classroom activities. For example, in the case of Angel, he found a way to stop his off-task behavior and learned to enjoy working with his group in part because of his interest in illustrating (Transcript 4.3). Also, the performance of Tony appeared to be “turned-around” from being a group bully who liked to steal pencils, to his assuming a leadership role in his group as seen in Transcript 4.4. It seems that a semiotic approach to literacy learning that offers active learning experiences and a variety of modalities has the potential of engaging students who are often off-task or distracted when asked to do basic reading and writing exercises. This type of pedagogy “reposition[ed] students as active learners, capable of design, agency and critique” (Kamler & Comber, 2005, p. 10).

It is possible that the mode of drawing in this multimodal literacy instruction enabled Angel to find a niche for himself, and then he was able to connect to the literacy learning at hand. This type of “turn-around” pedagogy that enabled Angel to find a connection to his work is described in more detail by Kamler & Comber, the research team that coined this term:

When teachers first began to document the impact of their literacy redesigns on their students, we were struck by how powerfully and quickly the literacy performance of many students was ‘turned around’: how histories of student failure or disengagement changed-sometimes, it seemed, against all odds. It was in this context, that we began to use the metaphor ‘turning around’ to evoke this kind of pedagogic, curriculum and people work required for connecting and reconnecting students with literacy. (2005, p. 7)

Angel and Tony were not the only students in Room 10 who were “turned around” by employing a multimodal type of literacy instruction. Jamal, who was a student in the

Money Group, was another example of an off-task student who became fully engaged through discovering a mode of communication that he was passionate about. Jamal had a real knack for taking digital pictures, and whenever the opportunity presented itself, he would take the camera and walk around the room snapping interesting images of his peers. This activity seemed to somehow open him up to the literary aspect of this project, and he seemed much better able to focus on his writing and illustrating after having been given the opportunity to take digital pictures. The photos that the students took, as well as the photos that I took over the course of the DSP, were turned into photo albums, one for me and one for the classroom to keep. The classroom photo album was kept on the back crescent table in Room 10, and students were allowed to view the album during silent reading periods.

The fact that the DSP helped to engage all of the students, including “at-risk” students, is certainly an aspect of this study that is worth noting. This type of multimodal project is something that schools, especially ones that are labeled “under performing” might want to consider implementing. Deeper levels of learning took place as the students worked cooperatively and used their imaginations on multiple levels. Engagement was seen in this type of pedagogy that included the utilization of the writing workshop with the addition of computer technology. Students shared in the decision-making involved in writing and illustrating their digital stories, and because they were given control of their learning environment as they jointly constructed knowledge, this allowed for a richer and more profound type of engagement. This type of cross-curricular project that allowed students to engage in multiple modes of communication has much to

offer our students as it includes essential aspects of language arts, technology, art and science curriculums.

Will having engaged in this DSP begin to address the crucial question raised by both Luke and co-author Elkins as well as the New London Group: how might the implementation of multimodal instruction help students to become skilled workers of the future? (Luke and Elkins, 1998; The New London Group, 1996) After having engaged in the DSP, the students in Room 10 certainly have more knowledge about computers and more computer skills than they did before. They also were given a chance to explore other semiotic avenues and possibly discover modes of communication that they are good at and passionate about. Looking at the five digital storybooks that these students created, and having witnessed their enthusiasm in becoming computer literate, I do believe that in part because of their involvement with the DSP, the students from Room 10 have begun their journey in becoming technologically skilled students who will carry these skills on as they become the workforce of the future.

5.5 Recommendations for Further Research

In making recommendations for other researchers who are contemplating engaging in similar types of projects, there are a few things that I would suggest. First, when printing digital books that have been illustrated in color, find a way to print color copies for the students. It does cost more money than printing in black and white, but seeing the final product in full color is much more powerful than seeing it in black and white.

In this project, the books were printed using card stock paper and colorful covers, but everything was printed in black and white. I opted for the card stock paper so that the

books would be sturdy and hopefully hold up over time. All of the students received a book of their own to take home regardless of whether or not they could afford the cost of about \$2.50 which covered the cost of printing. Personally, I couldn't absorb the cost of printing in color which would have cost much more, and because of the low income status of the students, I knew I couldn't ask them to pay a lot for their books. If I were to do it again, I would have applied for some type of grant to cover color printing, or engaged in some type of fund raiser to raise the money needed. One other option would have been to forgo the card stock paper, and print on regular weight paper, using a home printer equipped with a color cartridge.

Another recommendation I have for future researchers is to find the time to implement and document in-depth interviews with the students. In this project I did do a number of videotaped sessions with the writing groups where I posed questions and the students answered, but because the depth was not there, it was recommended that I called them surveys. If a researcher is presented with the issue of not having enough time, my suggestion would be to attempt to get in depth interviews from a few focal students as this can add so much to your data. Documenting with great detail what a few focal students' perceptions are while they are engaged in a project is quite valuable, and it seems that having a few in depth interviews might be more advantageous than surveying many students which may only access the surface of their insights and opinions.

Another thing I would recommend to future researchers engaging in a study that looks at computer technology is to get as much detailed information about a students' home computer use as possible. If you are posing a survey, be very clear about how you ask questions and do not leave any questions open to interpretation. When I gave the

students their written survey about home computer use, I found out later that one of the students responded affirmatively to the question about whether or not she had a computer at home, even though the computer had been broken for some time. Another suggestion is to interview their parents in an effort to gain as much insight into the students' prior computer usage and this knowledge can aid in understanding what they have previously learned as well as what should be taught.

Finally, one last recommendation for further research includes studying emergent literacy learners and pairing a literacy based project with the use of a computer application like Paint as the sole source of imagery generation. This could be an intriguing study as one of the limitations we encountered regarding computer use in the DSP was attempting to use this technology with second graders to aid in the creation of images. Initially, I had hoped that the students would be able to use the Paint application as one of a few means of creating images because I have found that this application can be a creative and appealing mode of imagery making. However, I discovered that the second graders in the DSP who were given the opportunity to use the Paint application, effectively using the different operations involved, even just drawing lines or using the fill in button, proved to be too complex an undertaking in the amount of time available for this project. Designing a study where the students were given the time needed to master this mode of imagery making, and if it were the only mode of creating images used in a literary based project, it would be interesting to see what would happen regarding how it would be utilized, and what kinds of images would be created.

5.6 Possible Topics for Further Research

After conducting this research, other topics for further research have come to mind. An interesting topic for additional research that stems directly from this project includes creating a study where instead of having the students compose their written texts first and then illustrate these texts, they reverse the sequence of events. Implementing a study where the students create their illustrations or imagery first, and then write the alphabetic texts using the images as a guide may offer further insights into the relationship between the writing and drawing processes. Also, as another offshoot of this study, it would be worth looking into comparing the text that was penned by a single author to those that were cooperatively written by looking for similarities and differences with regards to the storylines, diction, and use of imagery.

Another suggestion for further research involves looking in greater depth at the impact of using cooperative writing groups. Focusing on such a topic, possible research questions might include: as students collaborate on writing a text, how does power manifest itself in the group decision making process? How does this type group work impact and/or scaffold the students' thinking abilities? How does the group dynamic and possible scaffolding affect students' self-esteem? There is a large corpus of literature that addresses the writing workshop and many aspects of this type of classroom writing environment. However, there is little research that looks at students writing cooperatively as they collectively generate ideas, storylines and imagery for their texts.

There are several other possible topics for research that address different angles of the use of technology in the language arts classroom. One includes investigating how the use of computer technology in the writing workshop impacts the workshop atmosphere

and outcomes. Questions that come to mind include: Is the writing workshop more productive with the use of technology, or can technology be an impediment to the social aspects of literacy learning that are found in the writing workshop? How would the number of classroom computers alter the scope of a literacy project that utilizes the writing workshop? Would it be beneficial if everyone had their own computer or would having one computer per writing group be an asset to the students' productivity? In relation to the first research question posed in this paragraph, one other intriguing topic to explore would be identifying specific reasons why teachers do or do not choose to implement computer technology in their classrooms.

I also think it would be of great interest to implement a study that allows students to create their own classroom or school Web site. Web design is a fairly new field that is often seen offered at the high school or college level. Some questions that arise from this topic include: How would the elementary school students react to the immersion in a project that allowed them to learn the basics of Web design? How would the students decide what type of information would be worthy of their site? How would complying to their school district's rules and regulations about school Websites affect their perceptions of possible Internet issues as well as the concerns of safety for the students? In addition, I think that a study that looks at the use of computer technology in the form of creating movies (again at the elementary school level) would be a valuable contribution to the literature. This is another aspect of design which utilizes computer technology that is often offered to students at the high school and college levels. After having witnessed the students in Room 10 and their abilities to fairly easily pick up computer technology skills, I think that with proper instruction students at this age level have the potential to

be quite capable in either of these afore mentioned possibilities. If these young students were given the opportunity to create their own movies, what would be the possible topics that the students would choose? Would critical literacy become a focus for the students? Would each student want to create their own movie or would this be another type of project best done as a group undertaking? If it were done as a group, how would the students allocate the responsibilities involved and would power be an issue?

Finally, after having taught in the English department at a local community college, it seems that conducting research on how the use of multimodal learning in the college English classroom might affect the college students' perception of literacy learning would be very insightful. This brings us back to Moran's concerns that visual literacy might adversely affect English teaching and learning at the college level (Moran, 2005). How would the use of multimodal learning enhance the college students' literacy learning? Would it broaden the students' awareness of literacy's use in our culture? Or as Moran asserted, would it get in the way and displace the oral and written word? Personally, I think that the use of multimodal instruction is highly beneficial for students at any level, and will soon begin conducting some action research of my own that addresses multimodality and its impact on college students' literacy learning.

APPENDICES

APPENDIX A

STUDENT CONSENT FORM

To: The parents and guardians of students in Room 10 at Emily Dickenson Elementary School, in Winterdale, MA

From: Jane Carey, doctoral candidate in the School of Education at the University of Massachusetts, Amherst

Purpose: This consent form is to request parent and guardian's permission so that their child may participate in a classroom based research project.

Research Project Description: The project I am planning is designed to look at the impact of language learning in the classroom, and one of my main goals entails helping to assist the students in gaining the technology skills needed so that each student can produce their own digital story. The students will write their stories, possibly about friendship and then illustrate their stories using a computer paint shop application or digital photos. Their stories will then be typed up on a word processor, and the students will learn how to incorporate both image and text onto a page using a computer application. Research questions include: How will introducing technology in the form of digital storytelling impact language arts in Room 16? How will it reposition students as literacy learners? What kinds of texts will they produce?

Reasons for Research: This project is an important part of the data that I will be collecting to use towards my dissertation which is a requirement of doctoral candidates at the University of Massachusetts, Amherst's School of Education. Also, through this research, I hope to write an article and/or possibly create a film documentary in order help educators better serve the needs of their students and to help educators understand how gender can affect language learning.

Methods/Data Collection: I plan on working closely with the students' classroom teacher, Valerie King-Jackson, and together we will work on setting up this study so that it will be as beneficial as possible for the students in Room 10. This year long ethnographic study is based on gathering data in a number of different ways. I will be observing students within the classroom context and taking fieldnotes. I will also be audio taping, video taping and taking pictures of classroom activities, as well as documenting student interviews over the course of the year. Teacher generated classroom materials and examples of student work; especially their digital stories may be copied to use as data as well.

Voluntary Participation: All student participation in this research project will be voluntary and by signed consent from their parents and/or guardians. Participants may remove themselves from this study for any reason and at any point in time, if desired.

Students are free to participate or not without prejudice. Whether or not a student participates, they will still benefit from the curriculum of choice time.

Confidentiality: The privacy of all student participants will be honored. The strict guidelines for human subject research at the University of Massachusetts, Amherst, will be followed to protect the confidentiality and privacy of student participants. Words that students have spoken may be used in my dissertation, articles and in documentaries. However, their names, the name of the school, and any other possible identifiers will be removed from student work and pseudonyms will be used instead. Ms. King-Jackson will be the only other person who has access to this data unless written permission is given by the student's parent or guardian.

Rights to Review Material: If at any point, a parent or guardian would like to review data pertaining to their child, this request will be honored. If an article is published, or a film documentary is created, participants and their parents and/or guardians will be encouraged to view the material.

Risks/ Benefits: There should be no physical, emotional or cognitive risks involved with being a participant in this study. We believe that by participating in this study, students will benefit by gaining new knowledge about technology and literacy.

Length of Study: This study will be conducted during the 2006-2007 academic year with the possibility of contacting participants in the future.

Voluntary Consent Signing: Student's Parents and/or Guardians are asked to read this consent form, and please contact me to ask questions if anything is not clear. By signing this form you are giving the right to have your son or daughter to be a voluntary participant in this study.

Name of Student

Signature of Participant's Parent or Guardian

Date

Signature of Researcher

Date

If you have any questions or would like any additional information, please feel free to contact me by e-mail. You may also contact me by phone. Thank you very much!!

Jane Carey, M.Ed.
University of Massachusetts, Amherst
jainc_inc@hotmail.com

APPENDIX B

INTRODUCTORY LETTER

November 2006

Dear Parents and Guardians,

In this letter I'd like to introduce myself and give you a brief overview of a research study that I am proposing for this academic year in Room 10 at Emily Dickenson Elementary School. My name is Jane Carey, and I am a doctoral candidate in the School of Education at the University of Massachusetts, Amherst. Some of you might recognize my name because in 2005 I designed a web page for Emily Dickenson Elementary School, and I am still acting as Webmaster for this educational Web site. I was also involved in research studies for the previous two years in Valerie King-Jackson's room as a Research Assistant from the University of Massachusetts, Amherst.

This year, I am proposing a study of my own that involves introducing technology into the curriculum and entails helping the students to gain the technology skills needed so that each student can produce their own digital story. The students will write their stories and then illustrate the stories using a computer paint shop application or digital photos. Their stories will then be typed up on a word processor, and the students will learn how to incorporate both image and text onto a page using a computer application. We believe that by participating in this study, students will benefit by gaining new knowledge about technology and literacy.

Please read the attached consent form and feel free to get in touch with me if you have any questions at all. My e-mail is jainc_inc@hotmail.com. I am really looking forward to another exciting year working with the students in Room 16. Thank you very much for considering letting your son or daughter participate in this study!

Sincerely,

Jane Carey, M.Ed.
University of Massachusetts, Amherst

APPENDIX C

LETTER REGARDING PARENTS' NIGHT

May 18, 2007

Dear Parents and Guardians,

The Digital Storytelling Project that the students in Room 10 have been participating in has been extremely successful, and we are pleased to announce that the books that the students have created will be finished by next week. The students will each get a copy of the book that they helped to create, and if you would please contribute to the cost of producing these, that would be wonderful! Each book costs only \$2.50. If you would please send in either cash or a check (made out for cash), in an envelope with your child's name on it, by May 25, 2007, it would be greatly appreciated.

Also, we are planning a Parents' Night so that we can show the students' families what these kids have accomplished. Parents' Night will be held at 3:45 pm on Wednesday, June 6, 2007. We hope to see you there!

Sincerely,

Valerie King-Jackson, Classroom Teacher

Jane Carey, University Researcher

APPENDIX D

DIGITAL STORYTELLING OUTLINE

Names in Group _____
Group _____

Topic:

Characters:

Setting:

Problem:

Solution:

Adapted from J. Stone's *Cooperative Learning and Language Arts* (1994)

APPENDIX E

SURVEY ABOUT HOME COMPUTER USE

1. Is there a computer at your home? Yes No
2. If so, does it have Internet access? Yes No
3. Are you allowed to use the computer? Yes No
4. If so, what do you use it for? _____
- Age _____ Male or Female
-

Results of Survey

Is there a computer at your home?	If so, does it have Internet access?	Are you allowed to use the computer?
Yes - 12	Yes - 10	Yes - 11
No - 3	No - 5	No - 4

Responses to Question 4:

Uses for computer	Number of students who wrote this response
Games	6
Fun	2
Playing	2
Writing	2
Messages	1
Music	1
Paint	1
Pictures	1
Video Games	1
Web	1

APPENDIX F

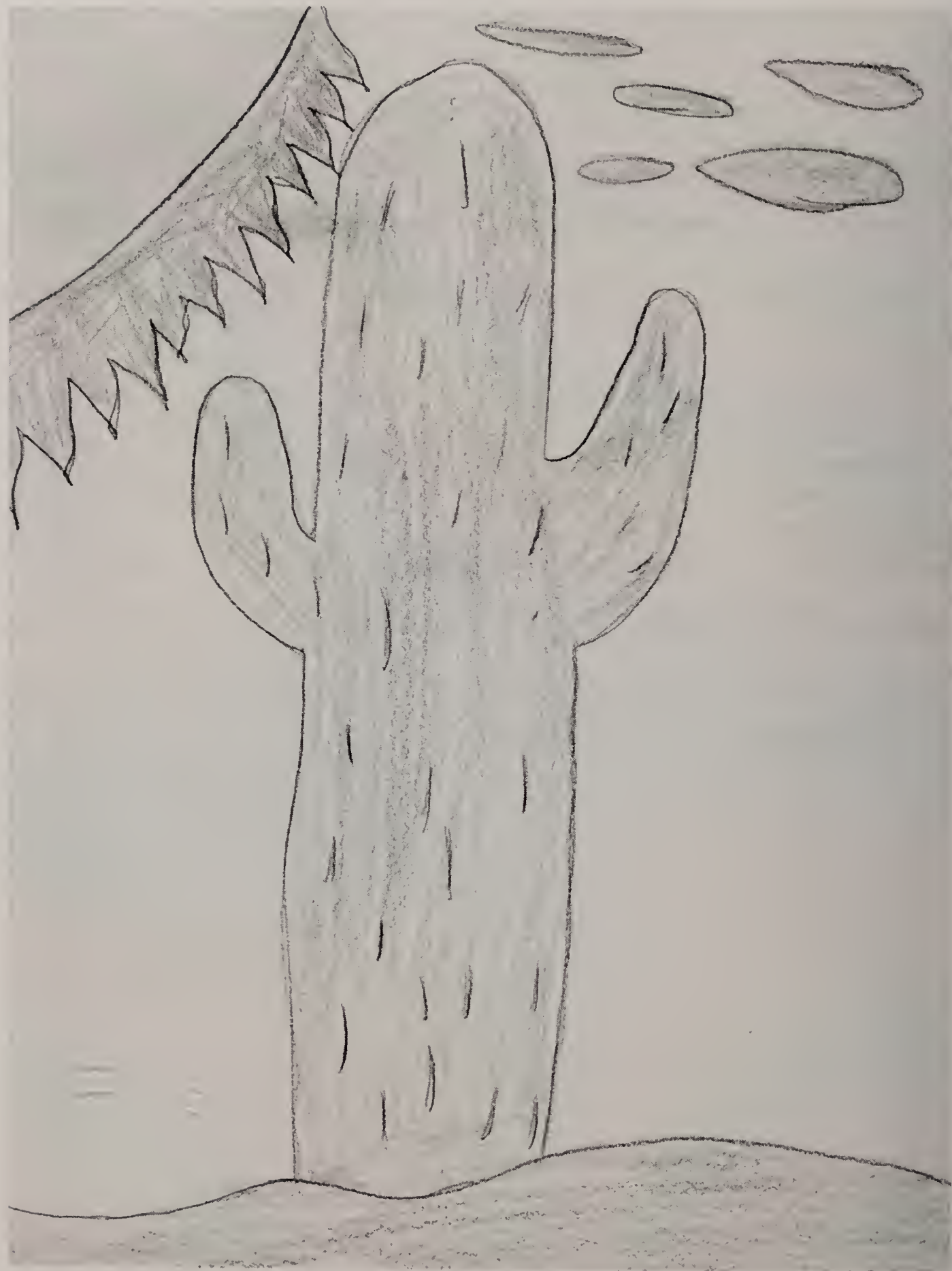
CREATING A DIGITAL STORY TAXONOMY

Creating a Digital Story			
Word Process Text	Illustrations	Image of Authors	Cover
Brainstorm ideas for topic	Brainstorm ideas for images	Have author or group of authors pose	Decide on title
Choose topic	Look at source material	Take a few pictures	Decide on illustration to use
Outline plot, characters, setting, problem	Relate imagery to text *	Dump into computer	Or create new illustration for purpose of cover
Write 1 st draft	Create rough draft	Select best images	Combine text and image *
Edit	Create final draft	Add author names *	Add author names *
Revise	Add color	Place in 8 ½ x 11 document	Place in 8 ½ x 11 document
Word process text	Scan image		
Edit			
Combine text and image in an 8 ½ x 11 document *			

* Digital Hybridity of Text and Imagery

APPENDIX G
STUDENT TEXTS

Three Camels Making Friends

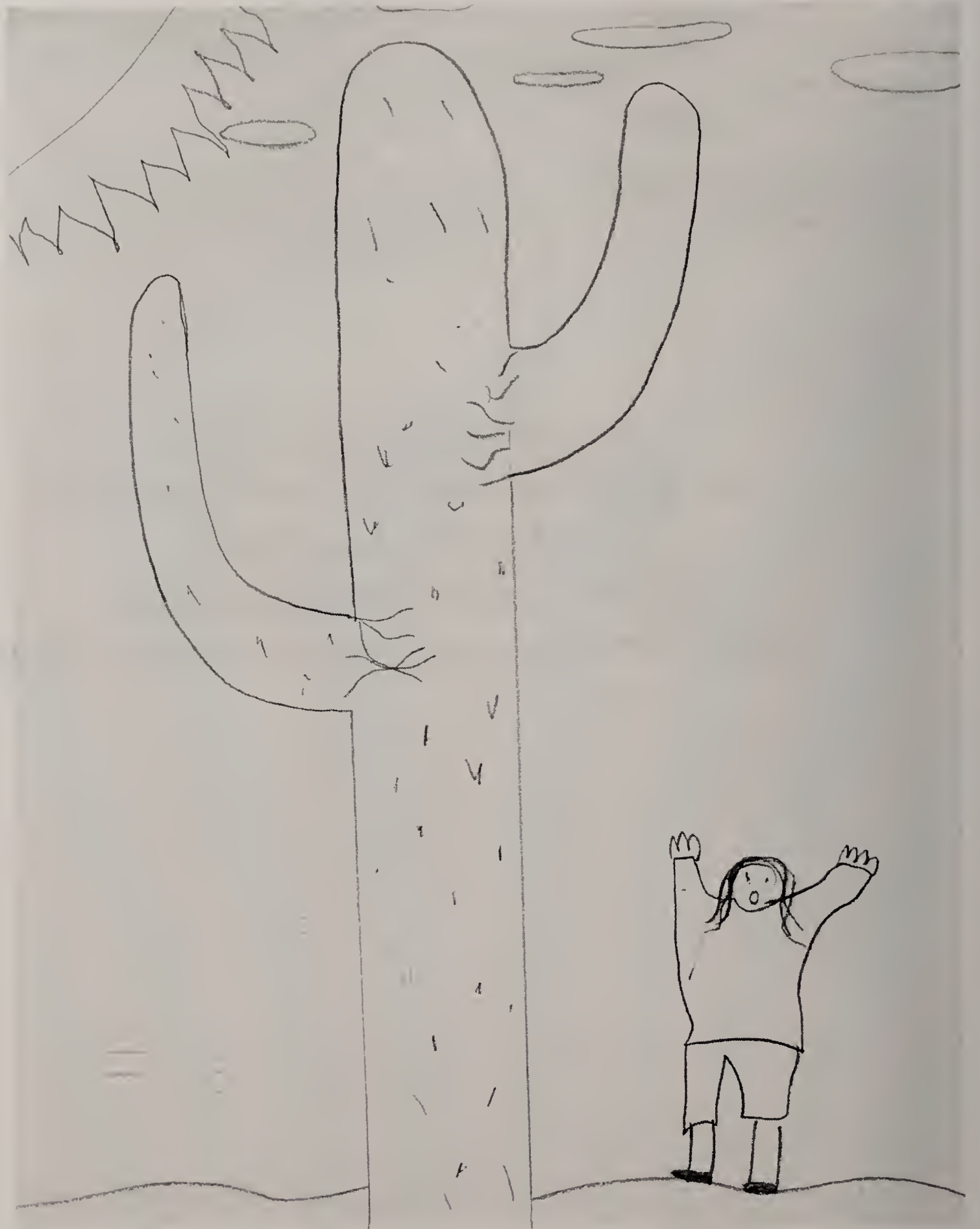


Written and Illustrated by
A, F, A & M

May 2007

This book is dedicated to:
Ms. King-Jackson, our favorite teacher,
And to Ms. Jane Carey,
For helping us with this project,
And to our whole class and our whole school.

Elementary School
MA



There was a girl named Maddy lost in the desert.



She screamed because she was lost and scared.



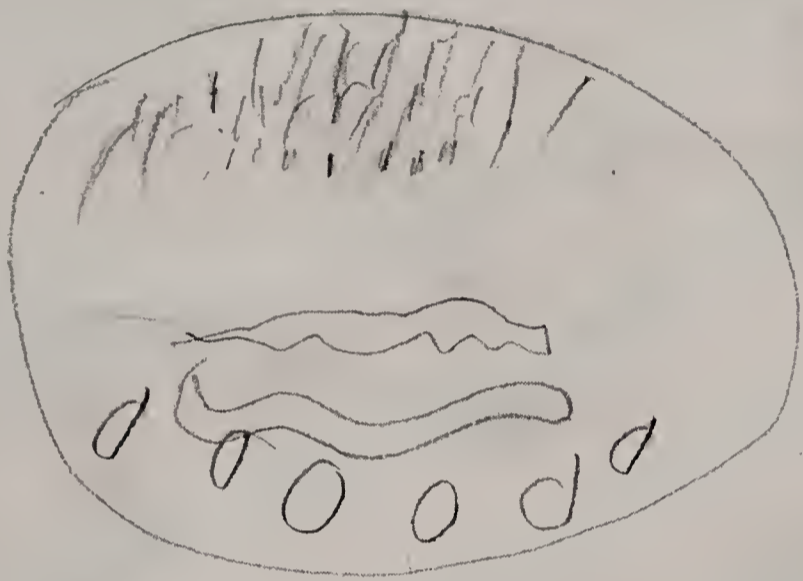
One day three boys named Billy, Alex and Dillon
came to rescue Maddy.



They had three camels, but the camels got tired.



Suddenly, Marcelo came.



He brought food and rescued the four people.

The End.

Dogs on Planets

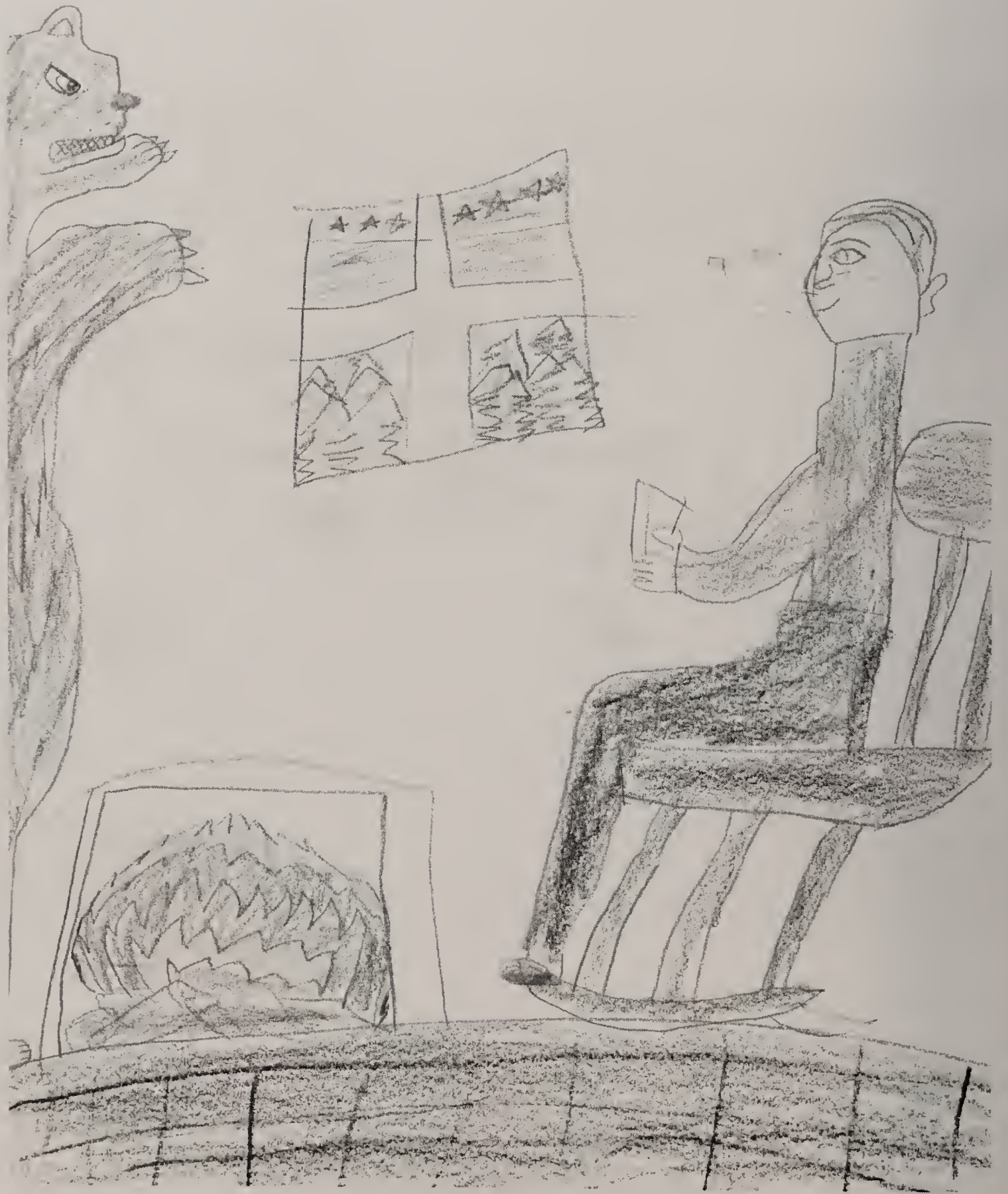


Written and Illustrated by
T, M & R

May 2007

This book is dedicated to:
All the people,
Especially the boys and girls
Who love space.

Elementary School
MA



Let me tell you the story of dogs on planets.

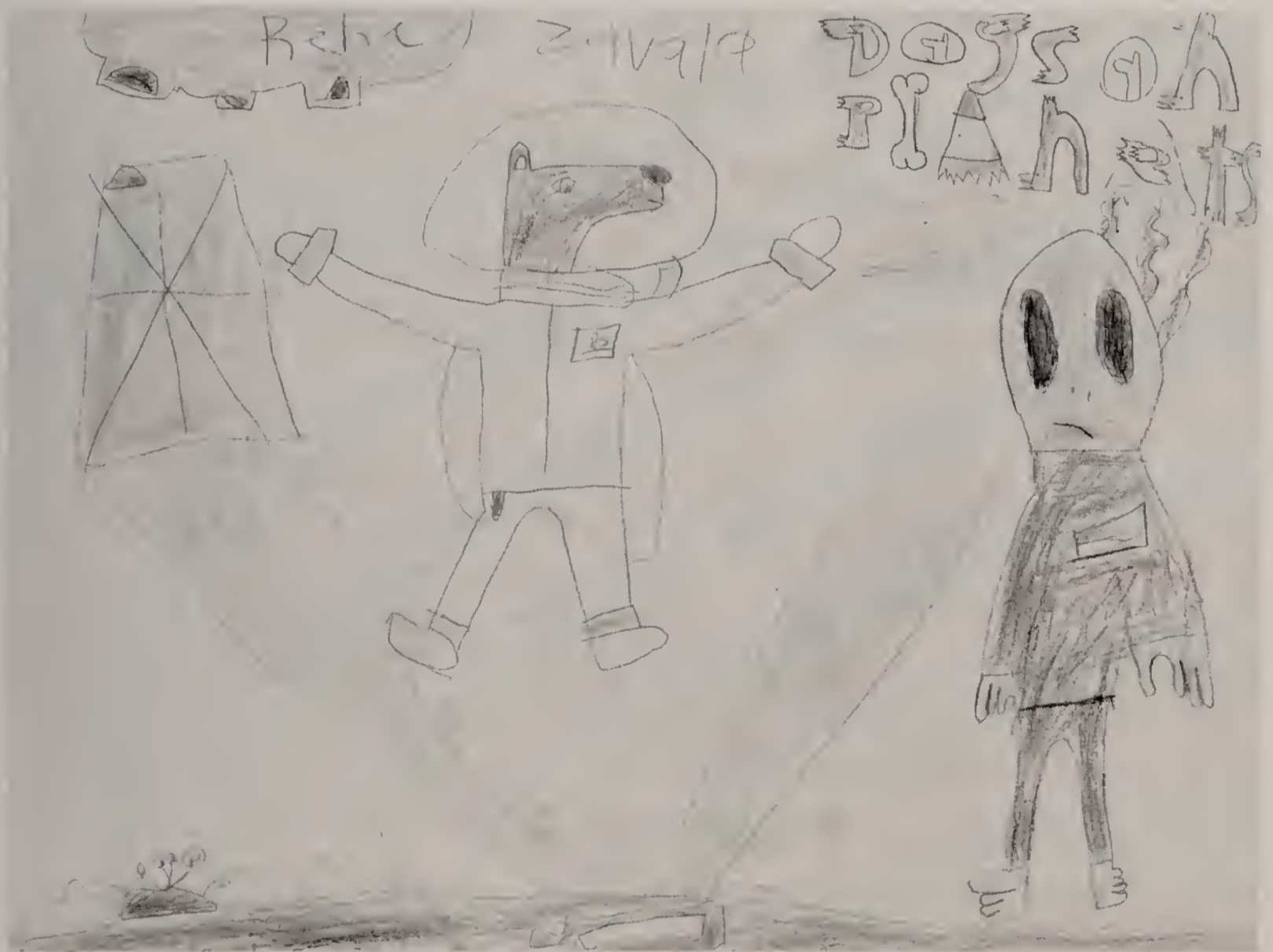


Ten million years in the past, five dogs went to a planet called Mars.

The dogs tried to find food, and they needed air, so the humans provided them with air tanks.



When a meteor shower came,
only a few dogs survived.
They kept on traveling until they found food.

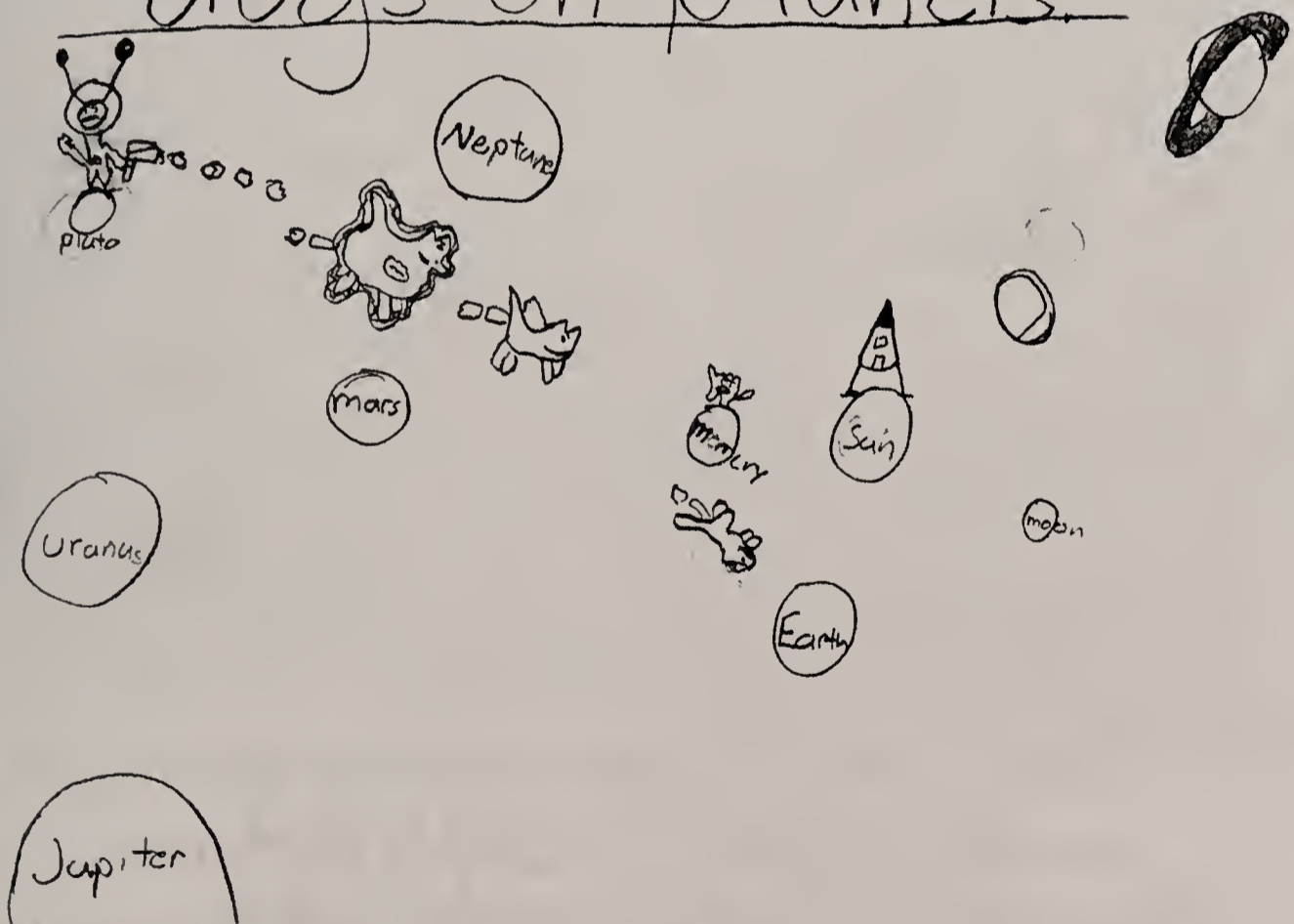


A space tornado hit, but then they realized they were prisoners by aliens on another planet. But one of the dogs had a special tool that set them free and they escaped to the Moon.

Chapter 2



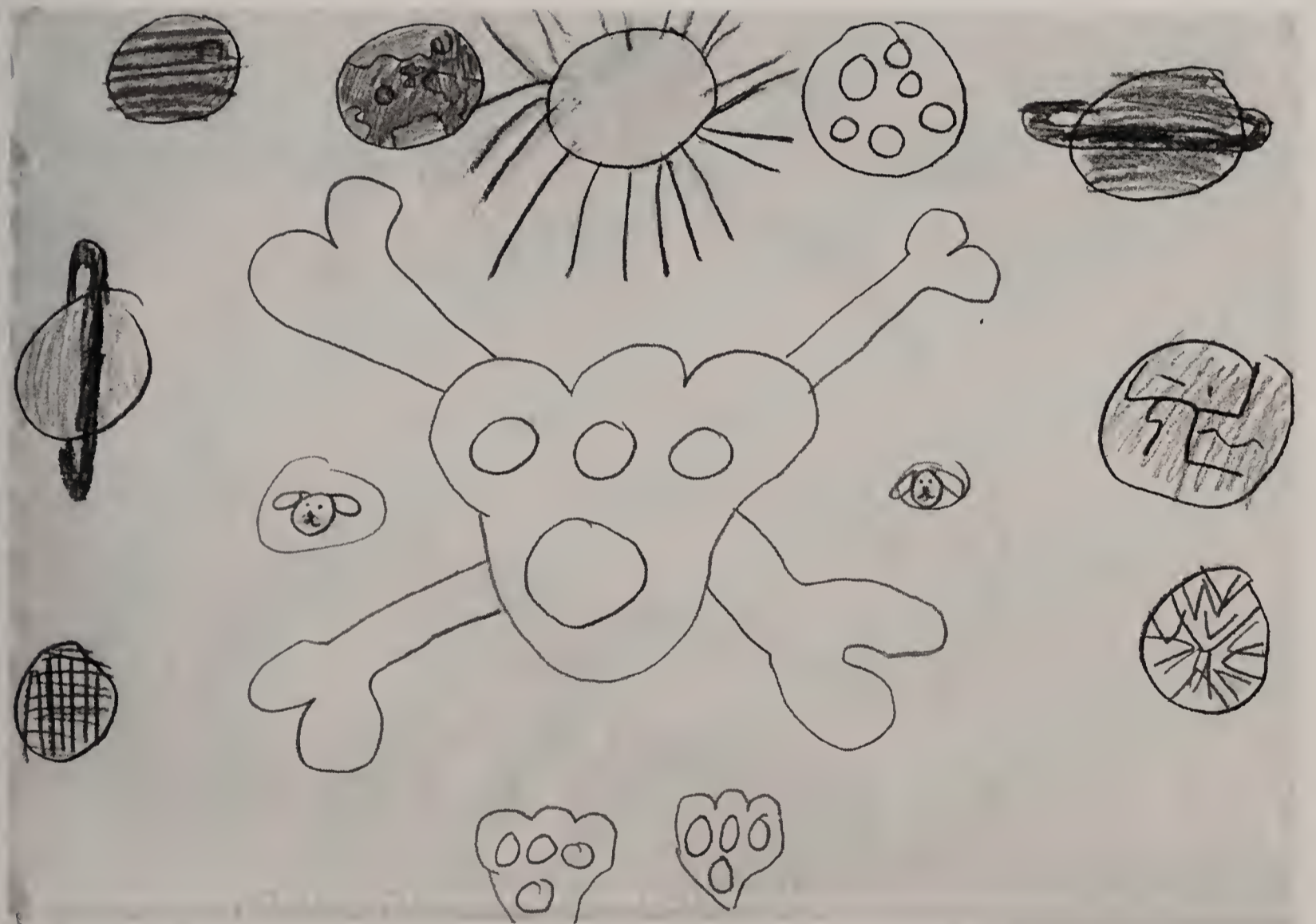
dogs on Planets.



Dogs were on the moon saying, "Woof, woof!"
So they went back to Mars and saw fire.



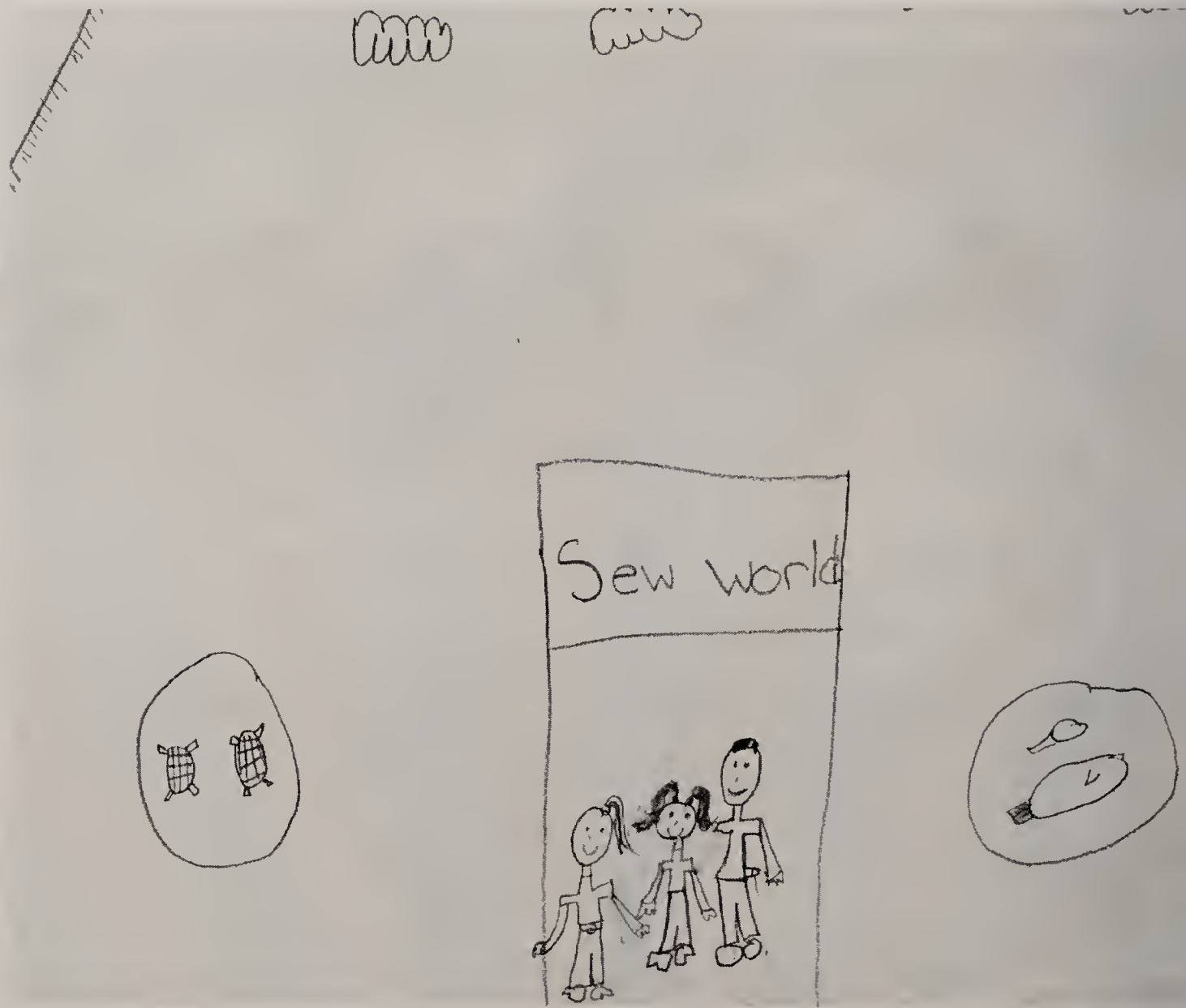
Then a meteor came crashing down on Mars,
so they jumped and landed on Saturn's rings.
They spun around and around and around until they
landed on Earth and they went surfing
on the water at the beach.



Then a tornado hit the water
and the dogs landed on Pluto.
They were frozen for 2,000 years.

The End

When I Go to Florida

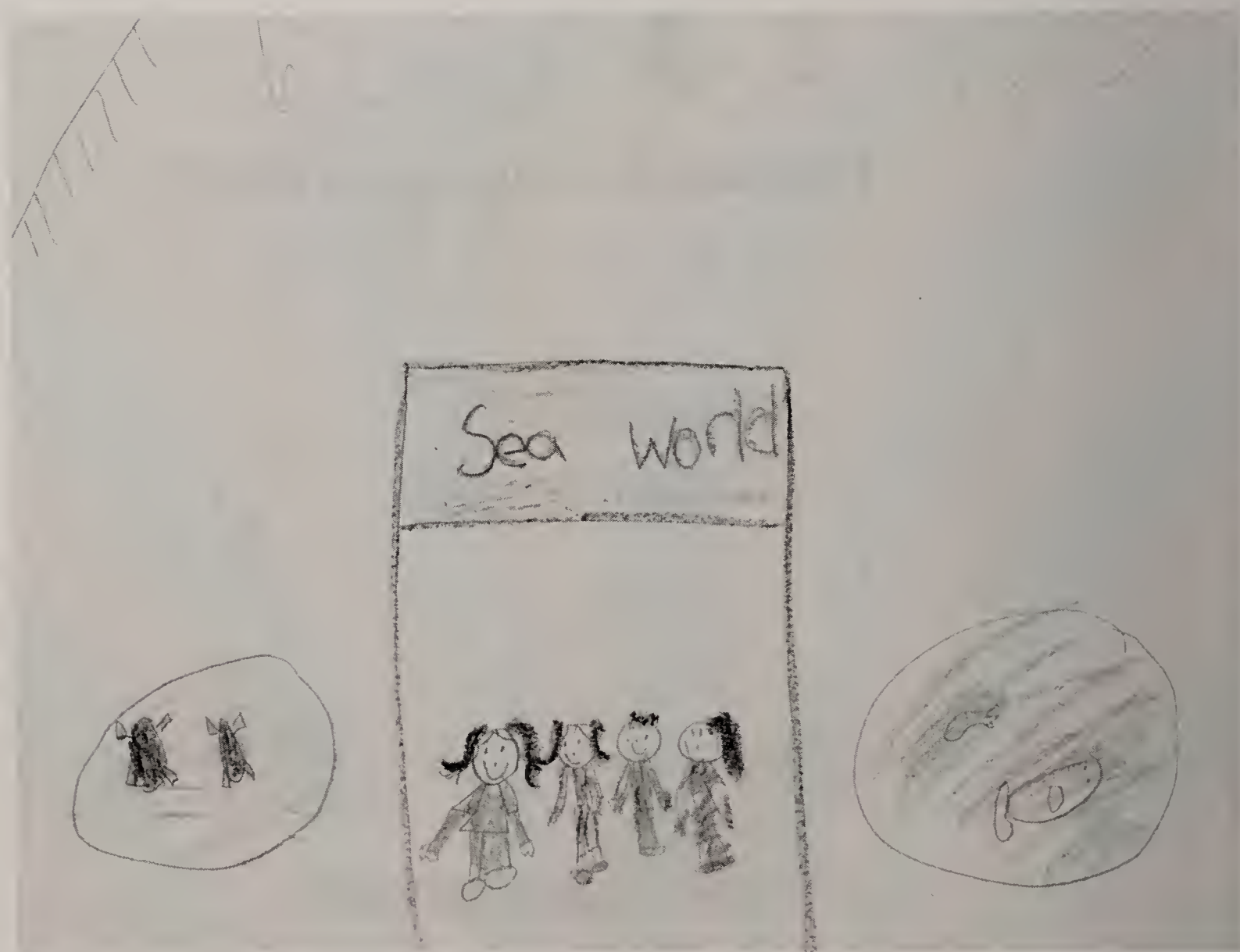


Written and Illustrated by
A

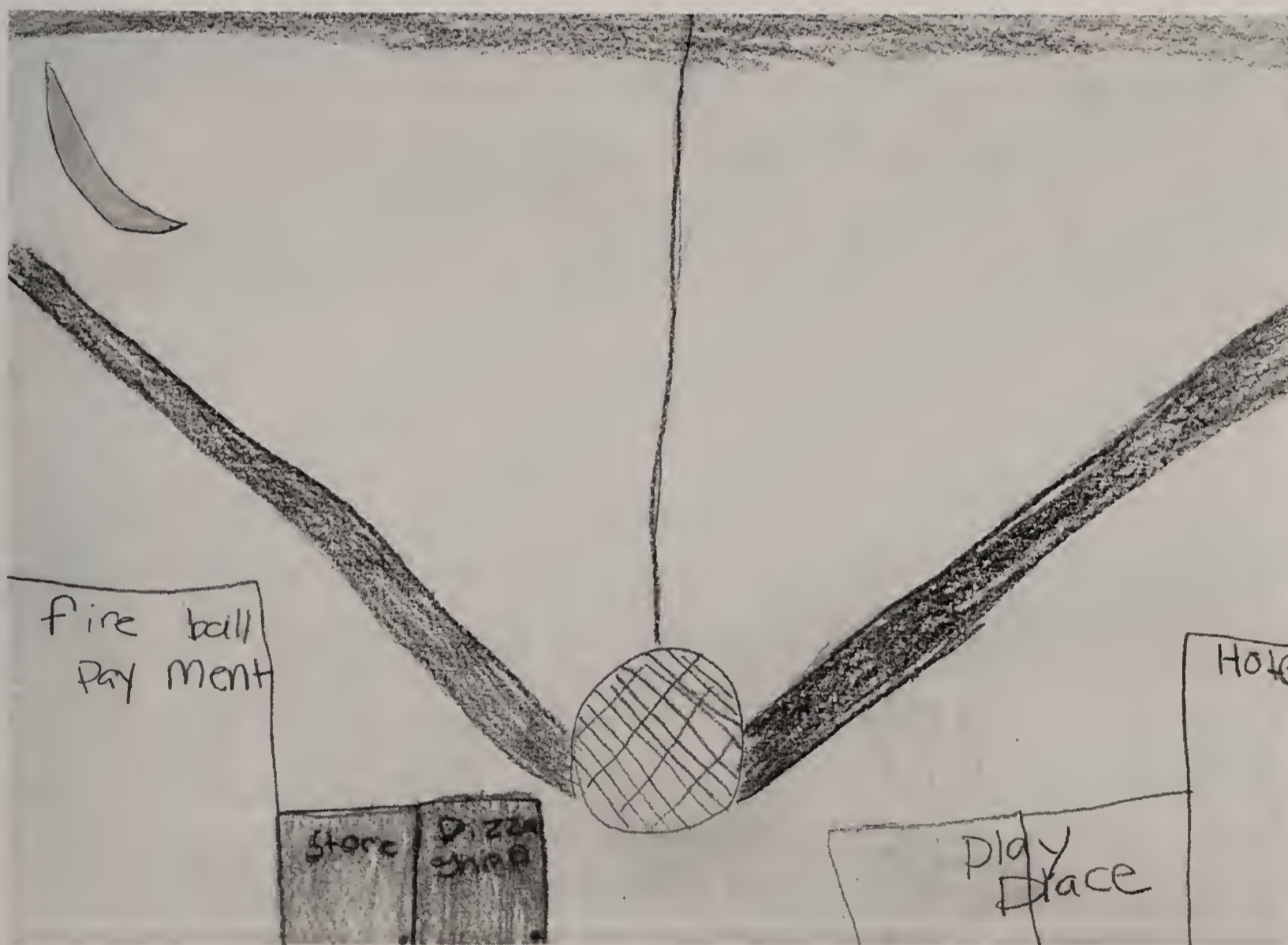
May 2007

This book is dedicated to Florida.

Elementary School
MA

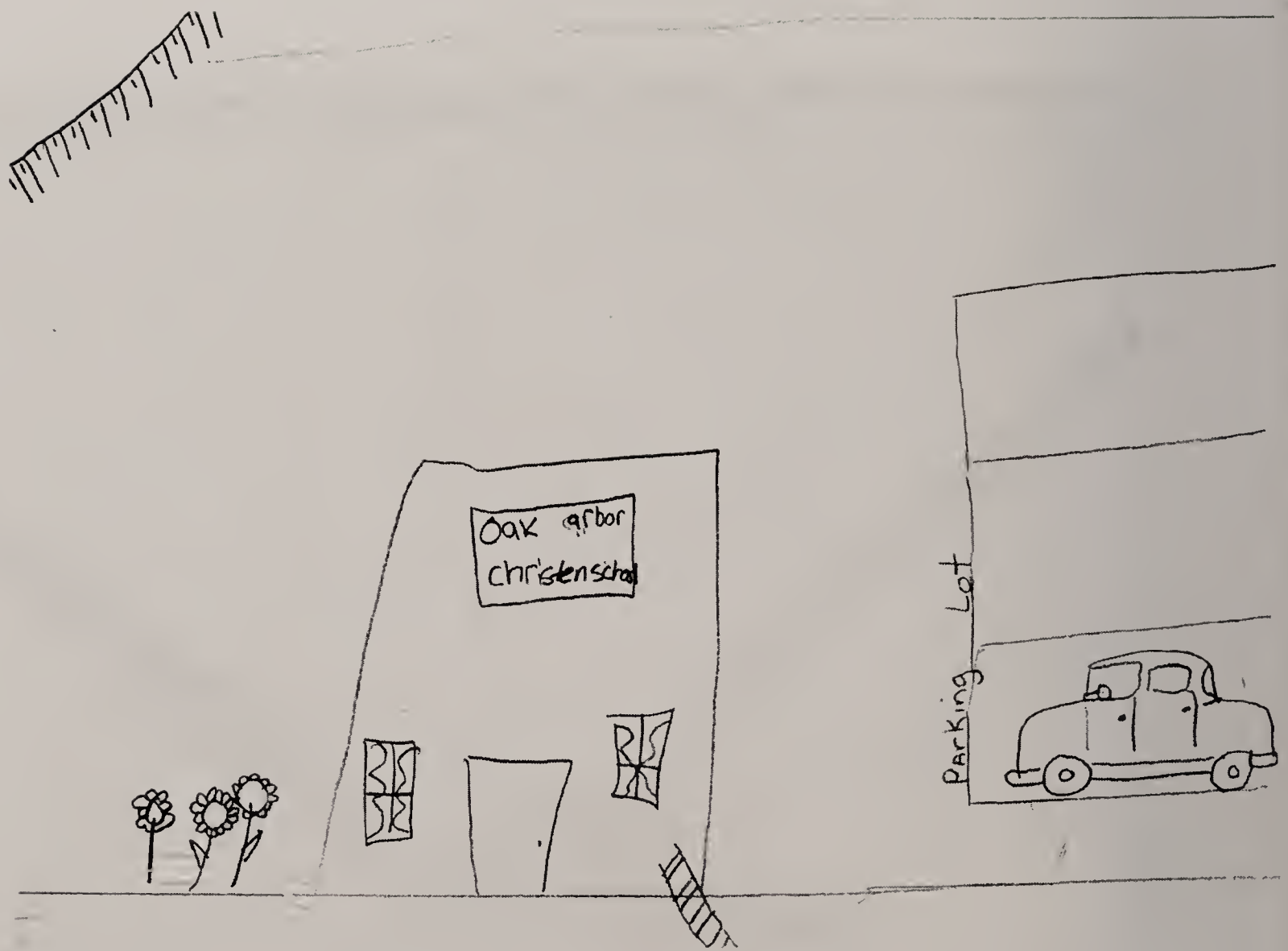


Florida is a great state to visit
because I am with my family.
We go to Daytona Beach.



Every summer and winter vacation we go to Florida.

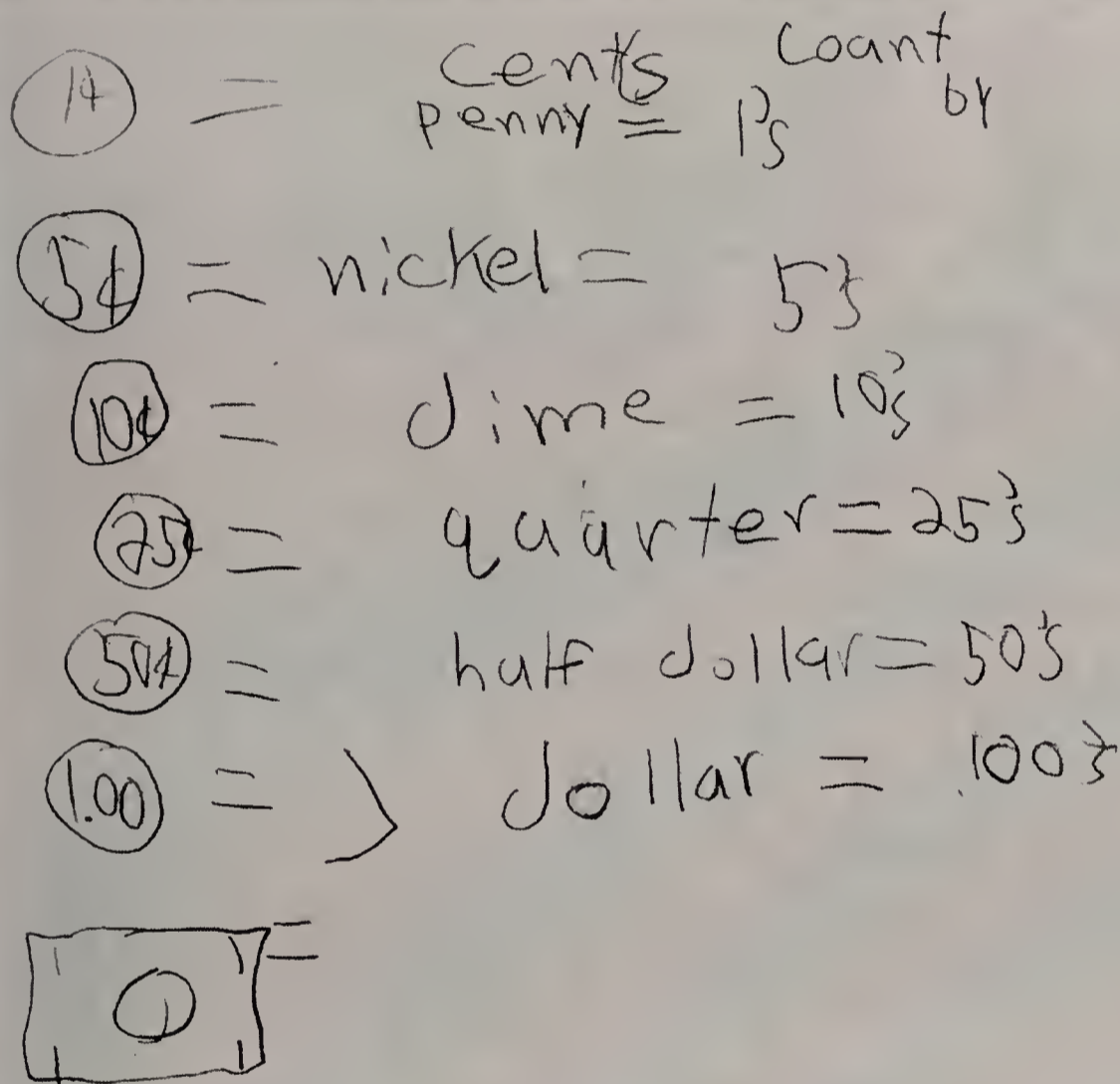
We go to amusements parks
and we get to go on the fireball.



We get to go to the Oak Arbor Christen School to teach little toddlers.

My dad always spends every minute with us. Florida is nice because the sun is always out.

How Money Works



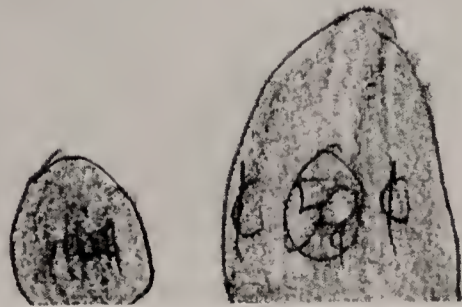
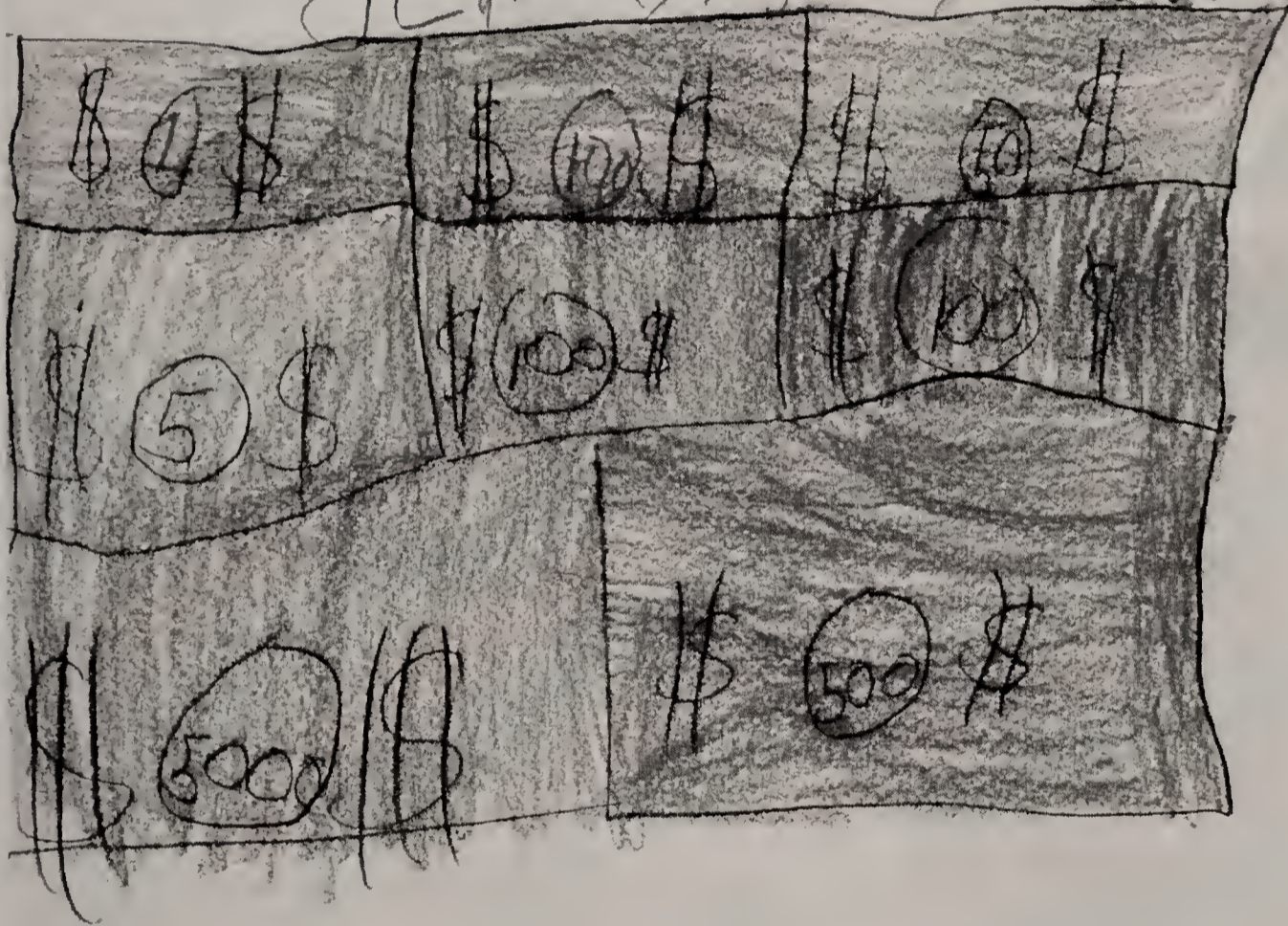
Written and Illustrated by
E, F, J, J, & I

May 2007

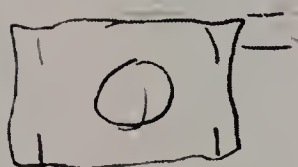
This book is dedicated to:
Our little brothers
With big imaginations,
And to all young children.

Elementary School
MA

Jeff Rodriguez

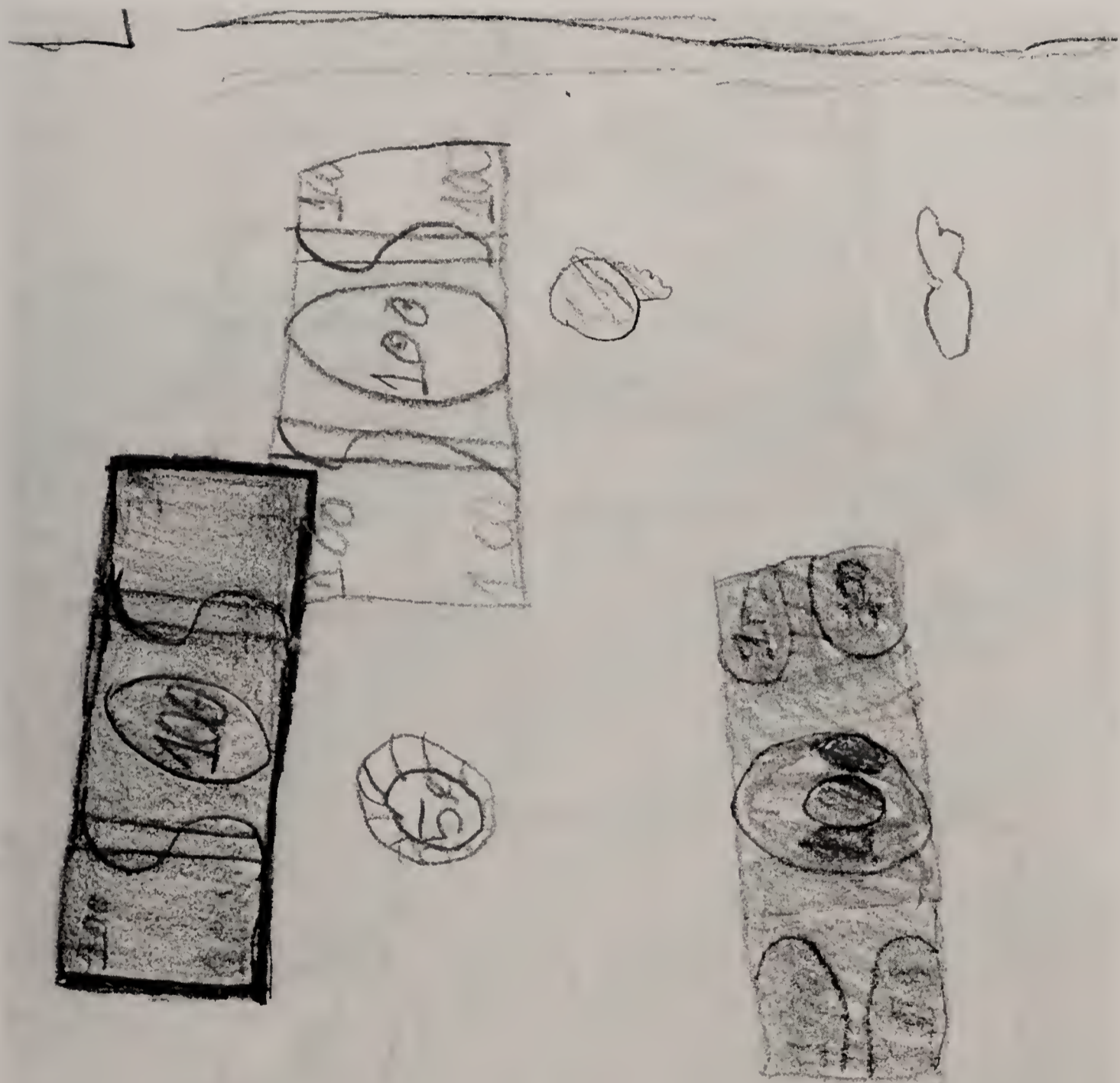


George Washington is on the dollar bill.

(1) = cents penny = 1¢ count by
 (5) = nickel = 5¢
 (10) = dime = 10¢
 (25) = quarter = 25¢
 (50) = half dollar = 50¢
 (1.00) = } dollar = 100¢


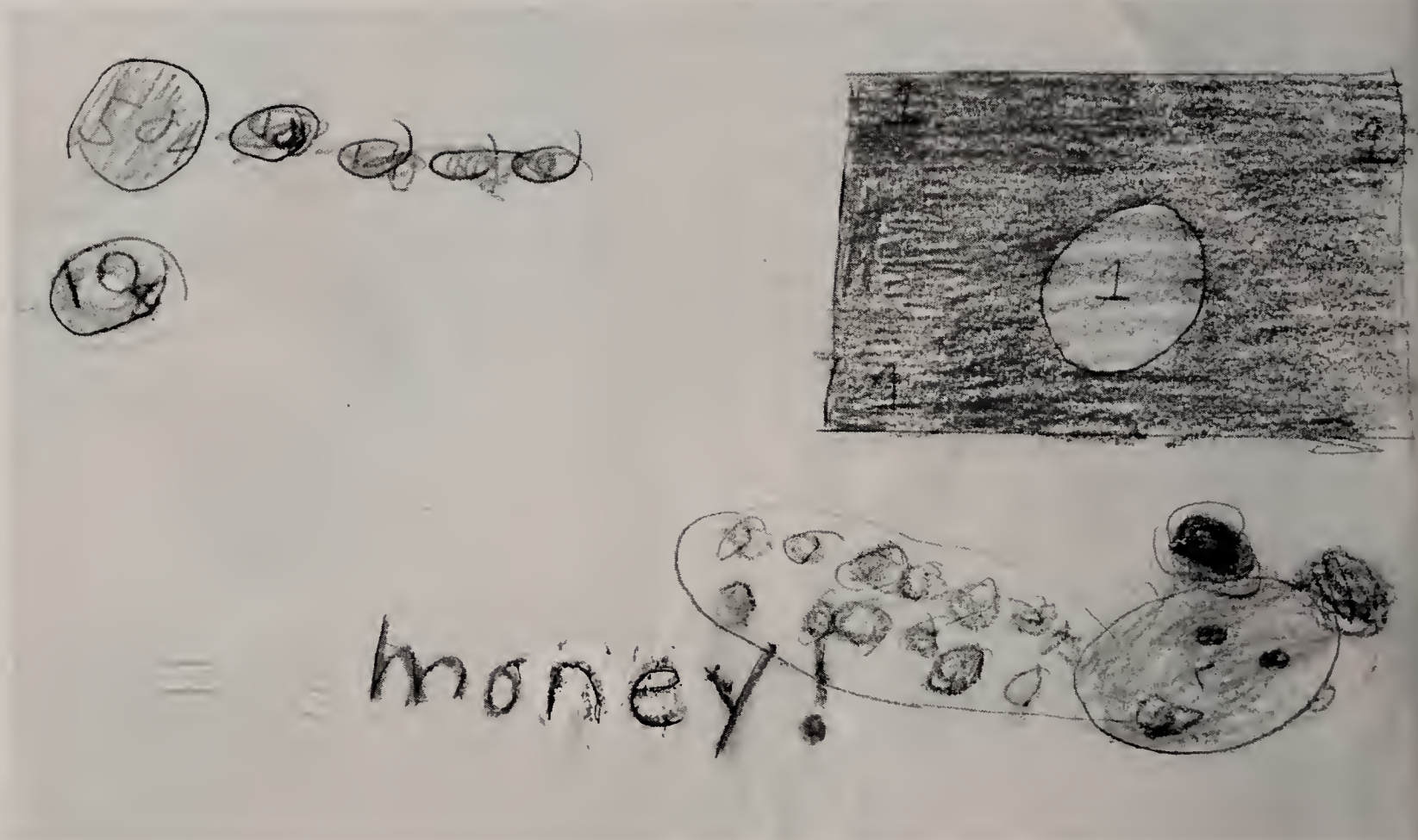
He is on the new dollar too.

Abe Lincoln is on the five dollar bill.



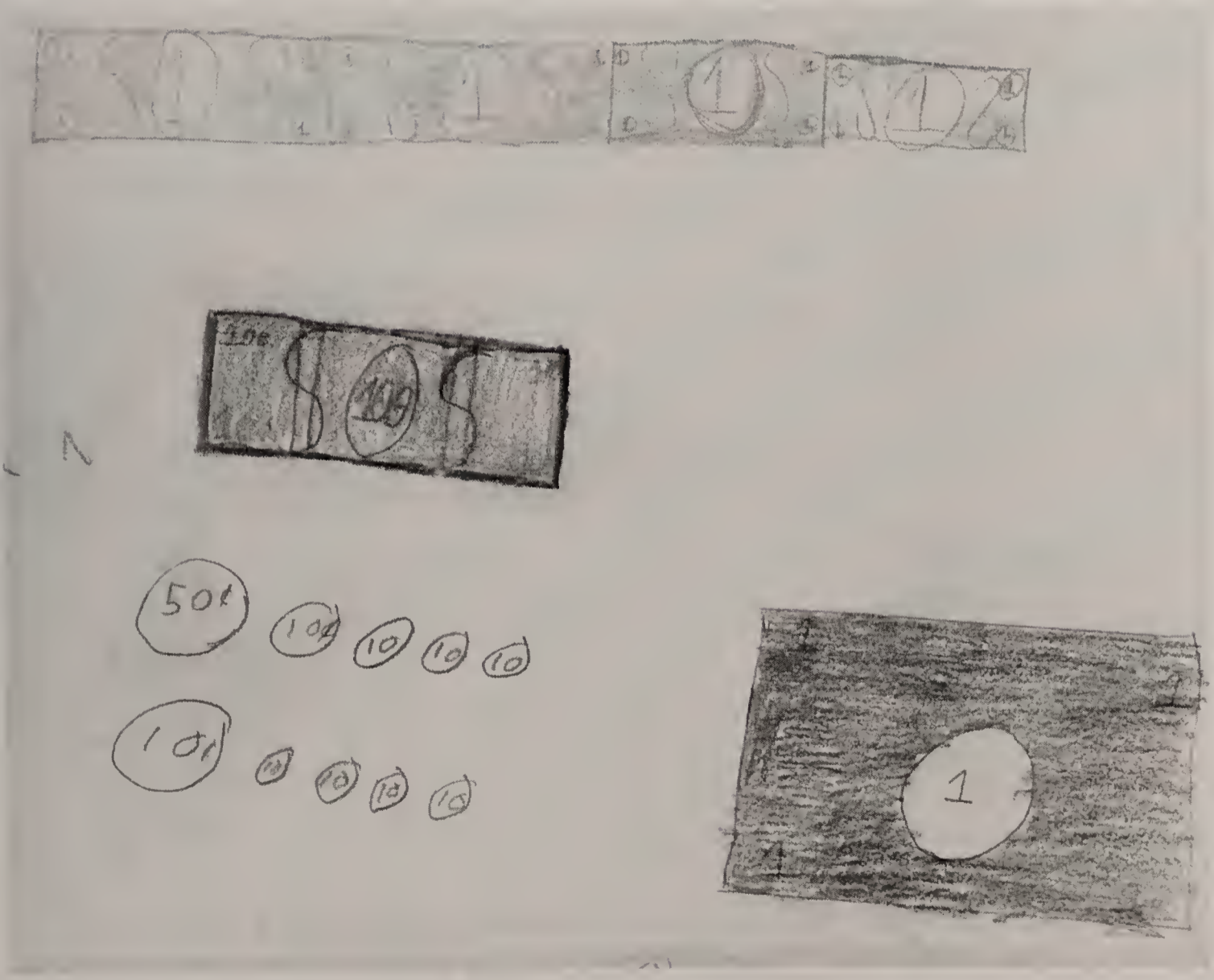
We can count by tens with dimes and ten dollar bills.

Now we have a new dollar coin.

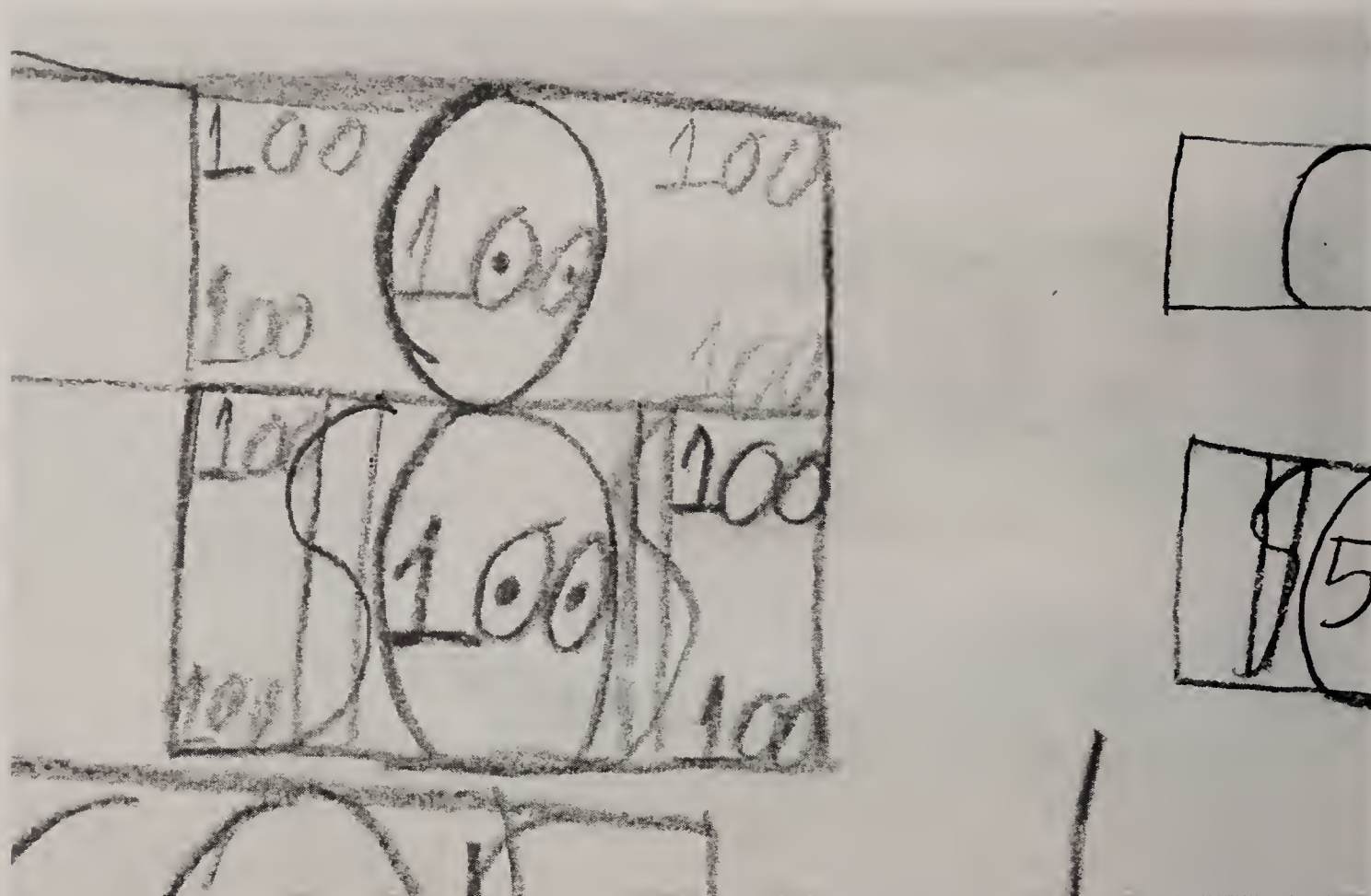


People work to earn money.

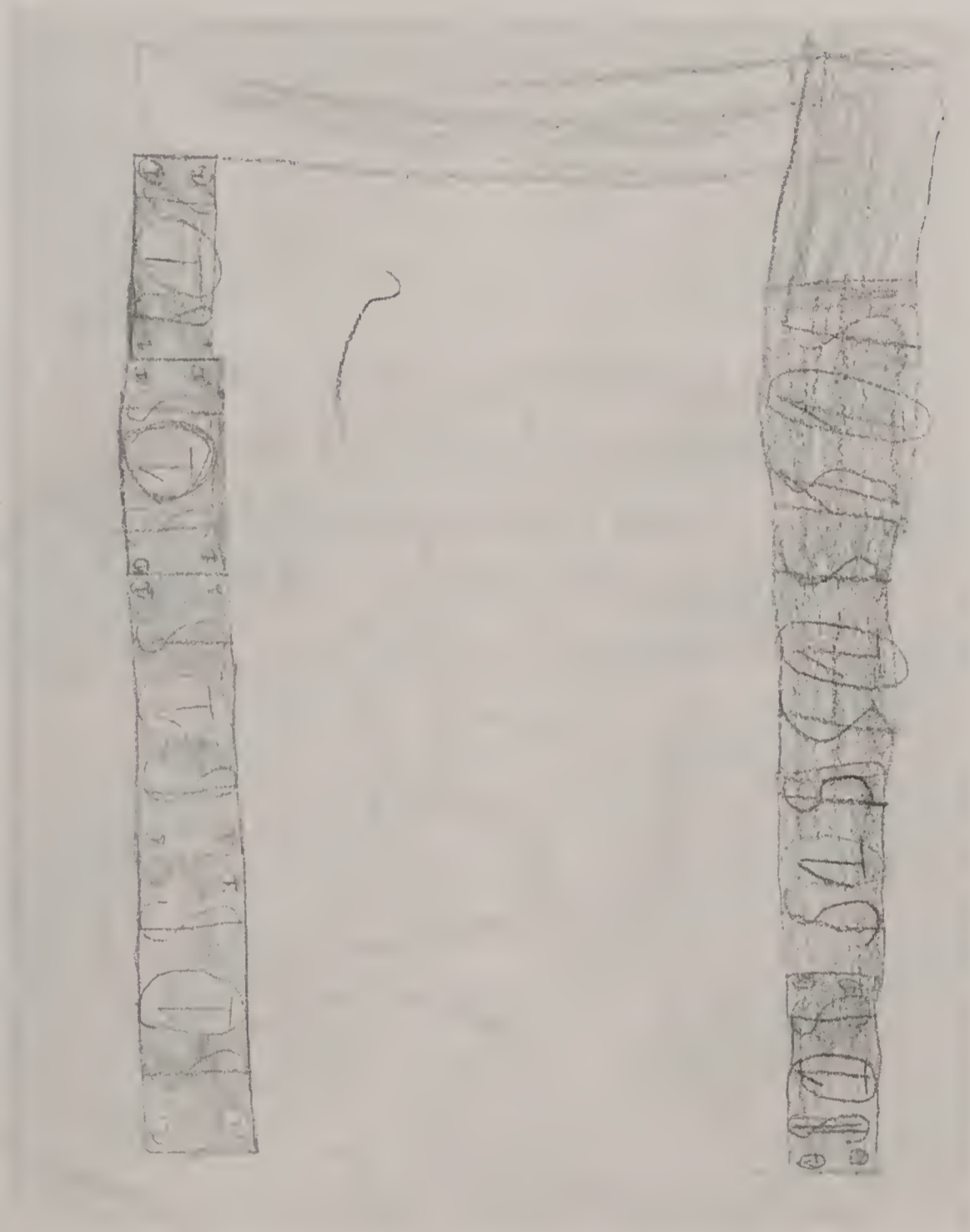
We can buy things with money.



We count by fives with nickels or five dollar bills.



I saved \$10.50 from my birthday cards.



My Grandma needs money to pay bills
and get a new house.

Everyone wishes that they could be rich.

Space

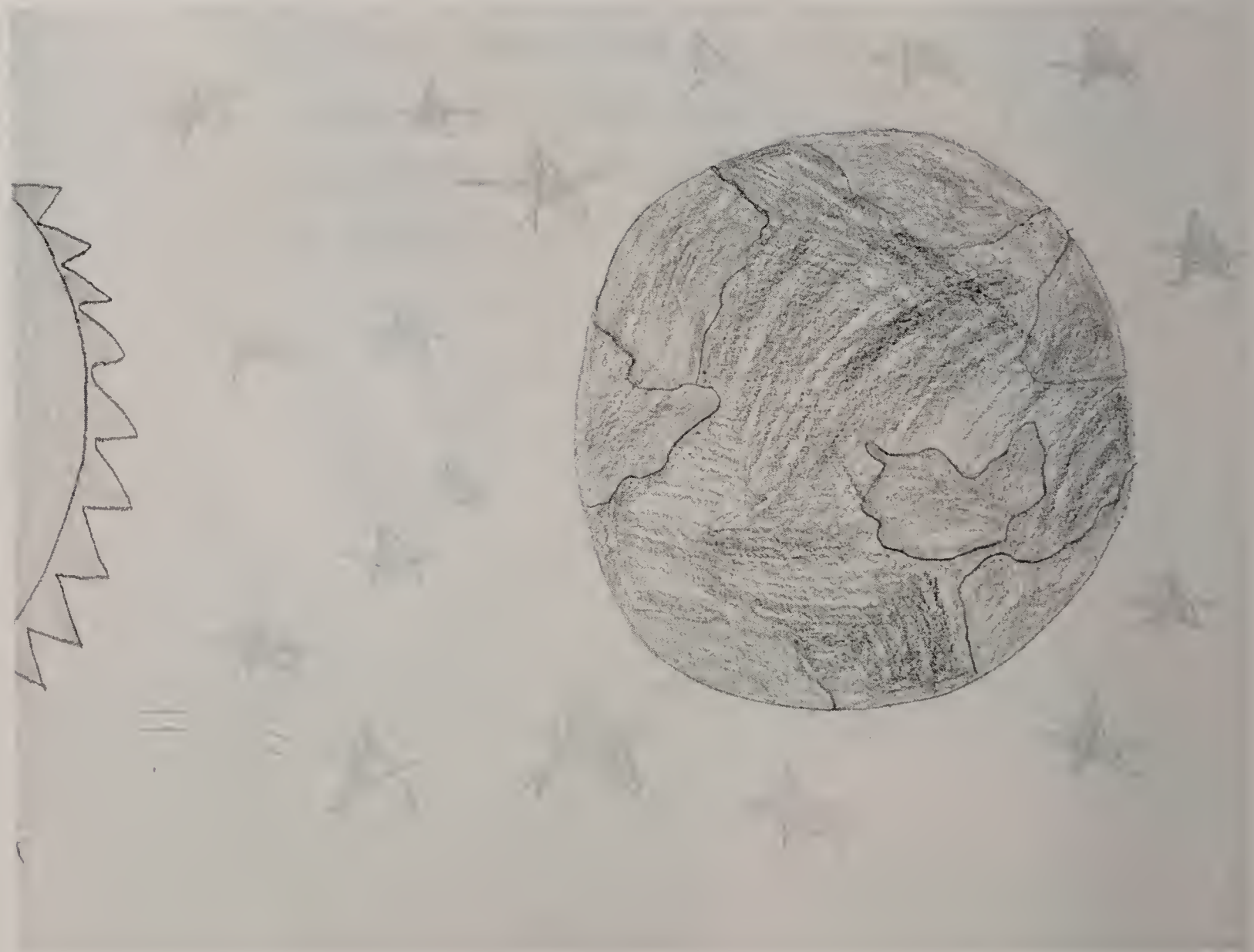


Written and Illustrated by
N, S, N, T & O

May 2007

This book is dedicated to:
All the people that love
Learning about space,
Also, to the astronauts
And to our families.

Elementary School
MA



This story is all about space.
Earth is one of the planets in space.



The Earth is a huge ball of rock
traveling through space.
The Earth spins around like a top.
It is one of nine planets that orbit the Sun.



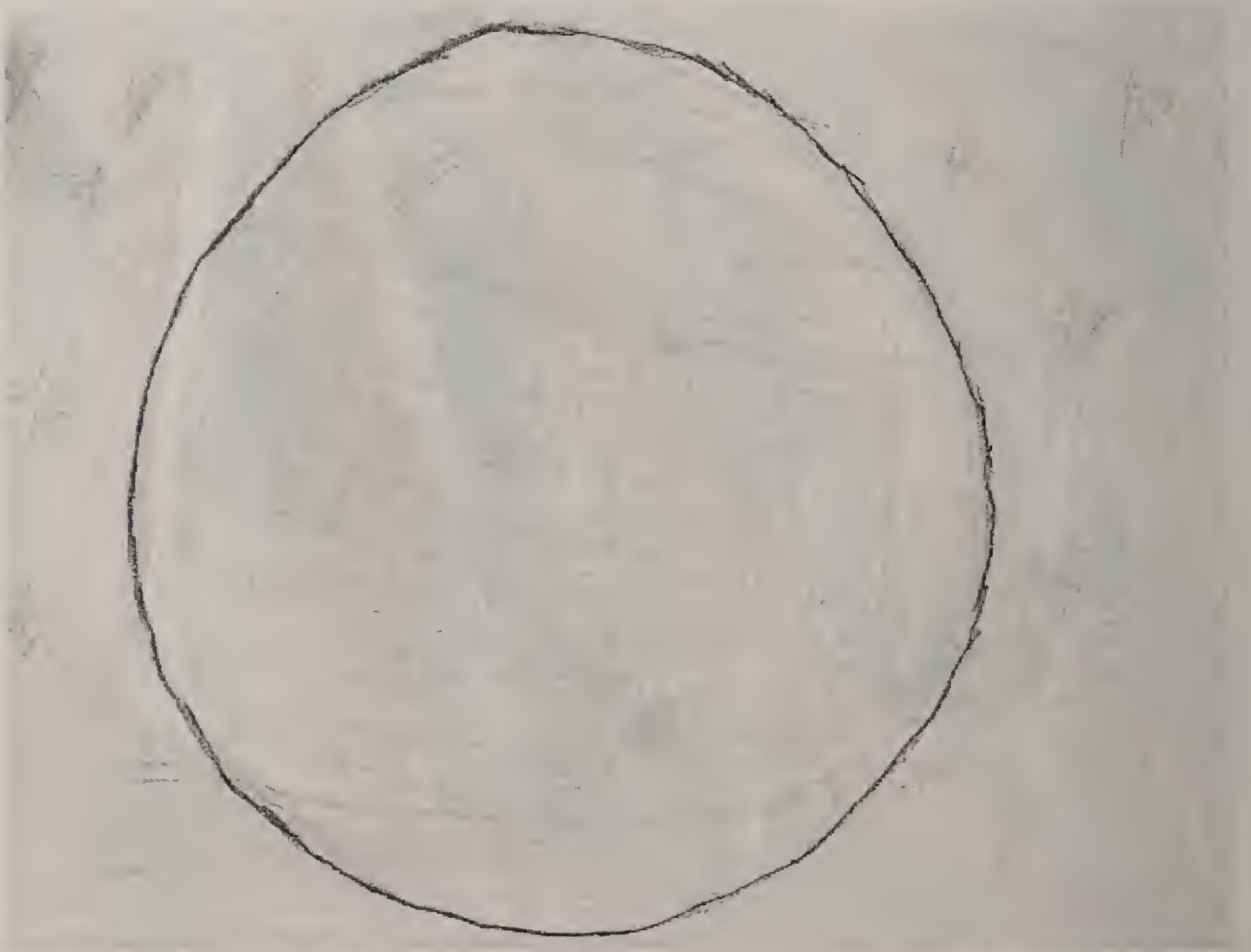
The Earth is huge and round and it has seven
continents and four oceans.

The Earth is our home.

We live in North America in the U.S.A.



The universe is big. Space is part of it.
Earth is only one of the planets in space.
The other planets in the Solar System are Mercury,
Venus, Neptune, Saturn, Uranus, Jupiter and Mars.



Mars is bigger than the Earth.
The Sun is a huge fiery ball of gas
that glows in the sky.



Now scientists say that Pluto is a “mini planet.”
As they study the Solar System, we will learn more
about space, the Sun and the Moon.

APPENDIX H

BOOK OF THANKS FROM VAL AND STUDENTS



**Hugs and Kisses
Thank You
Ms. Jane Carey
By All of Us from
School in
Room 2006-2007**



Hugs and Kisses
Thank You Ms. Jane Carey
By All of Us from
School in Room 2006-2007

This story is about our wonderful experience making Digital stories with Ms. Carey.

It was great to have the opportunity to work with Ms. Carey. I remember being afraid to use my email account with the City of _____, until Ms. Carey showed me what to do. I'm still a little nervous but I will reply if someone writes me first. Thank you for spending another year working with my class and helping them become computer/technology scholars. It's been a true experience. You deserve our thanks, hugs and kisses.
Ms. Valerie King-Jackson

Ms. Carey,

This book is dedicated to you. Thank you for
Your vision, support and help. We will miss you.
You deserve our thanks, hugs and kisses.
Love, All of us at
Grade 2, Room 2006-2007

P.S. Thanks to Dr. Patricia Paugh, of UMASS,
also for sending you our way.

Dear Ms. Carey,

Thank you for everything you did this year. It was
interesting to learn to use the computer. It was also
interesting to write a book on the computer. You
deserve our thanks, hugs and kisses. Love, R

Dear Ms. Carey,

Thank you for everything you did this year. It was
fun to learn to use the computer. You deserve our
thanks, hugs and kisses. Love, N

May 2007

Dear Ms. Carey,

Thank you for everything you did this year, like helping us with the computer and teaching us how to use a computer. I really liked taking pictures. We will miss you. You deserve our thanks, hugs and kisses. Love,
J

Dear Ms. Carey,

Thank you for everything you did this year. You are like a mother to me. I learned a lot. It was really fun using the computer. You deserve our thanks, hugs and kisses. Love, S

Dear Ms. Carey,

Thank you for everything you did this year, I loved working with you on the computer. I really liked making my book. You deserve our thanks, hugs and kisses. Love, A

Dear Ms. Carey,

Thank you for everything you did this year. I had fun with the book making and you teaching us how to use a computer. I hope you have fun on the last day with us. You deserve our thanks, hugs and kisses. Love, A

Dear Ms. Carey,

Thank you for everything you did this year, like helping us with the computer and teaching us how to use a computer. I really liked typing with you. You deserve our thanks, hugs and kisses. Love, J

Dear Ms. Carey,

Thank you for everything you did this year, like helping us make the book on the computer and teaching us how to use technology. It was fun making the pictures. You deserve our thanks, hugs and kisses. Love, A

Dear Ms. Carey,

Thank you for everything you did this year, like letting us make a story with the computer. I hope you have a nice day. We will miss you. You deserve our thanks, hugs and kisses. Love, M

Dear Ms. Carey,

Thank you for everything you did this year, like helping us make a book and teaching us how to use a computer. I really liked making pictures. You deserve our thanks, hugs and kisses. Love, F

Dear Ms. Carey,

Thank you for everything you did this year. I liked making the books. It was very cool and fun too. I never made a book before on the computer. Thanks for teaching us how to use a computer. You deserve our thanks, hugs and kisses. Love, M

Dear Ms. Carey,

Thank you for everything you did this year, like helping us with our work on the computer and teaching us how to use a computer. We will miss you. You deserve our thanks, hugs and kisses. Love, E

Dear Ms. Carey,

Thank you for everything you did this year, like helping us with the computer. I'm happy you liked my picture. Good-bye! You deserve our thanks, hugs and kisses. Love, O

Dear Ms. Carey,

Thank you for everything you did this year, like helping us with the computer. You deserve our thanks, hugs and kisses. Love, T

Dear Ms. Carey,

Thank you for everything you did this year, and working with us on the computer and teaching us. It was great to have you here with us. We will miss you. You deserve our thanks, hugs and kisses. Love, I

Dear Ms. Carey,

Thank you for everything you did this year. It was interesting to learn to use the computer. It was also interesting to write a book that way. You deserve our thanks, hugs and kisses. Love, T

Dear Ms. Carey,

Thank you for everything you did this year, like helping us with our story on the computer. Good-bye! We will miss you. You deserve our thanks, hugs and kisses. Love, F

Dear Ms. Carey,

Thank you for letting us make a story this year. Thanks for letting us go on the computer and teaching us how to use a computer. You deserve our thanks, hugs and kisses. Love, N

BIBLIOGRAPHY

- Ayers, W. C., & Miller, J. L. (Eds.). (1998). *A light in dark times*. NY, NY: Teachers College Press.
- Bakhtin, M. M. (1981). Discourse in the novel. In M. Holquist (Ed.), *The dialogic imagination: Four essays by M. M. Bakhtin* (pp. 269-343). Austin, Texas: University of Texas Press.
- Banaszewski, T. (2002). Digital storytelling finds its place in the classroom. *MultiMedia Schools*, 9(1), 32.
- Barton, M. (2005). The future of rational-critical debate in online public spheres. *Computers and Composition*, 22, 177-190.
- Becker, H. J. (2000). Findings from the teaching, learning and computing survey: Is Larry Cuban right? *Education Policy Analysis Archives*, 51(8), 1--34.
- Bhaba, H. K. (1996). Culture's in-between. In S. Hall, & P. du Gay (Eds.), *Questions of cultural identity* (pp. 53-60). London: Sage.
- Bloome, D., Powers, C., Christian, M. M., Otto, S., & Shuart, N. (2005). *Discourse analysis and the study of classroom language and literacy events – A microethnographic perspective*. London: Lawrence Erlbaum Association.
- Bolter, J. D. (2001). The breakout of the visual. *Writing space: Computers, hypertext, and the remediation of print* (2nd ed., pp. 47-76). Mahwah, NJ: Erlbaum Associates.
- Burnett, R. (1995). Reinventing the electronic image. *Cultures of vision* (pp. 218-277). Indianapolis: Indiana University Press.
- Burnett, R. (2004). Foundations of virtual images. *How images think* (pp. 57-70). Cambridge, MA: Massachusetts Institute of Technology.
- Burns, T. (2001). Being "social": Expanding our view of social interaction in writing workshops. *Language Arts*, 78(5), 458-466.
- Calkins, L. (1986). *The art of teaching writing* (1st ed.). Columbia University: Teachers College Press.
- Cameron, D. (2001). *Working with spoken discourse*. Thousand Oaks, CA: SAGE Publications Ltd.
- Cappello, M. (2006). Under construction: Voice and identity development in writing workshop. *Language Arts*, 83(6), 482-491.

- Carspecken, P. F. (1996). *Critical ethnography in educational research*. NY, NY: Routledge.
- Cazden, C., Cope, B., Fairclough, N., & Gee, J. et al (The New London Group). (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review*, 66(1), 60-61-93.
- Chandler-Olcott, K., & Mahar, D. (2003). "Tech-saviness" meets multiliteracies: Exploring adolescent girls' technology-mediated literacy practices. *Reading Research Quarterly*, 38(3), 356-385.
- Coiro, J.; Knobel, M.; Lankshear, C.; Leu, D. (Eds.). (2008). *Handbook of research on new literacies*. Taylor and Francis Group: NY, NY.
- Christie, A. (1996). Dr. Alice Christie's matrix of 320 WebQuests. Retrieved April 20, 2005, from <http://www.west.asu.edu/achristie/wqmatrix.html>
- Coffey, A., & Atkinson, P. (1996). *Making sense of qualitative data*. Thousand Oaks, CA: Sage Publications Inc.
- Cole, M. (1996). *Cultural psychology. A once and future discipline*. Cambridge, MA: Harvard University Press.
- Cook-Sather, A. *Re(in)forming the conversations student position, power and voice in teacher education*. *Radical Teacher*, 64, 21-28.
- Cook-Sather, A. (2002). Authorizing students' perspectives: Toward trust, dialogue and change in education. *Educational Researcher*, 31(4), 3-14.
- Cook-Sather, A. (2003). Movements of the mind: The matrix, metaphors and re-imagining education. *Teachers College Record*, 105(6), 946-977.
- Cowan, K., & Albers, P. (2006). Semiotic representations: Building complex literacy practices through the arts. *The Reading Teacher*, 60(2), 124-137.
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage Publications.
- Denzin, N. K.; Lincoln, Y. S. (Eds.) (2003). *The landscape of qualitative research*, Thousand Oaks, CA: Sage Publications.
- DiBello, L. C. (2005). Are we addressing the digital divide? Issues, access and real commitment. *Childhood Education*, 81(4), 239-242.
- Dodge, B. (1998). The WebQuest page. Retrieved April 18, 2005, from <http://webquest.sdsu.edu/>

- Dudley-Marling, C., & Paugh, P. (2004). Tapping the power of student voice through whole language practices. *Reading and Writing Quarterly*, (20), 385-399.
- Dyson, A. (1993). *Social worlds of children learning to write in an urban primary school*. NY, NY: Teachers College Press.
- Dyson, A. (2003). "Welcome to the jam" popular culture, school literacy, and the making of childhoods. *Harvard Educational Review*, 73(3), 328-361.
- Dyson, A. H. (1999). Coach Bombay's kids learn to write: Children's appropriation of media material for school literacy. *Research in the Teaching of English*, 33(4), 367-368-403.
- Elkins, J., & Luke, A. (1999). Redefining adolescent literacies. *Journal of Adolescent and Adult Literacy*, 43(3), 212-215. Retrieved April 17, 2006 from Proquest Database database.
- Emerson, R., Fretz, R., & Shaw, L. (1995). *Writing ethnographic fieldnotes*. Chicago, IL: University of Chicago Press.
- Engestrom, Y., & Miettinen, R. (1999). *Perspectives on activity theory*. New York: Cambridge University Press.
- eSchool News. (2005/2006). *Educational Leadership*, 63(4), 26.
- Fetterman, D. M. (1989). *Ethnography: Step by step*. Newbury Park, CA: Sage.
- Gallas, K. (2003). *Imagination and literacy A teacher's search for the heart of learning* (1st ed.). NY, NY: Teachers College Press.
- Gardner, H. (2003). Multiple intelligences after twenty years. *American Educational Research Association*, Chicago. IL. 1-14.
- Gardner, H., & Veenema, S. (1996). Multimedia and multiple intelligences. *The American Prospect*, 7(29), November 1, 1996. Retrieved October 12, 2006.
- Gaughan, J. (1999). From literature to language: Personal writing and critical pedagogy. *English Education* [H.W.Wilson - EDUC], 31(4), 310.
- Gebhard, M. (2004). Fast capitalism, school reform, and second language literacy practices. *The Modern Language Journal*, 88, 245-265.
- Geertz, C. (1973). *The interpretation of cultures: Selected essays*. NY, NY: Basic Books.
- Goodall, H. L. (2000). *Writing the new ethnography*. Lanham, Maryland: AltaMira Press.
- Green, L. (1998). On line conferencing: Lessons learned. Retrieved March 14, 2005, from <http://www.emoderators.com/moderators/lessonse>

- Greene, M. (1973). In Mangurian S. (Ed.), *Teacher as stranger*. Belmont, CA: Wadsworth Publishing Co. Inc.
- Greene, M. (1995). *Releasing the imagination* (First ed.). San Francisco, CA: Jossey-Bass Inc.
- Greene, M. (1996). In search of a critical pedagogy. In P. Leistyna, A. Woodrum & S. A. Sherblom (Eds.), *Breaking free* (pp. 13-30). Cambridge, MA: Harvard Educational Review.
- Harwayne, S. (2001). *Writing through childhood: Rethinking process and product*. Portsmouth, NH: Heinemann.
- Haycock, K. (2004). Bridging the digital divide. *Teacher Librarian*, 32(2), 34.
- Heffernan, L., & Lewison, M. (2003). Social narrative writing: Reconstructing kid culture in the writer's workshop. *Language Arts*, 80(6), 435-443.
- Henkin, R. (1995). Insiders and outsiders in first-grade workshops: Gender and equity issues. *Language Arts*, 72(6), 429-434.
- Hruska, B. (1999). Bilingualism, gender and friendship: Constructing second language learners in a mainstream kindergarten. (Ed.D., University of Massachusetts, Amherst)., 1-433.
- Hubbard, R. S., & Shorey, V. (2003). Worlds beneath the words: Writing workshop with second language learners. *Language Arts*, 81(1), 52-61.
- Iacchia, F. (2005). Digital storytelling. *Teaching Pre K - 8*, 35(6), 52.
- Jensen, E. (2005) *Teaching with the brain in mind* (2nd Ed.). Alexandria, VA: Association for Supervision and Curriculum Development.
- Jewitt, C., & Kress, G. (Eds.). (2003). *Multimodal literacy*. NY, NY: Peter Lang Publishing Co.
- Kahn, F., & Coburn, J. (1998). Storytelling for the "digitally abled." *Technology & Learning*, 18(9), 54.
- Kaiser Family Foundation. (2004). Children, the digital divide and federal policy. Retrieved May 23, 2006, from <http://www.kff.org/entmedia/7090.cfm>
- Kamberelis, G., & Dimitriadis, G. (2005). *Qualitative inquiry: Approaches to language and literacy research*. NY, NY: Teachers College Press.
- Kamler, B., & Comber, B. (2005). Designing turn-around pedagogies and contesting deficit assumptions. In B. Kamler, & B. Comber (Eds.), *Turn-around pedagogies* (pp. 1-14). Newton, Australia: Primary English Teaching Association.

- Karre, M. (2005). BrainGlow: Ideas and tools for digital storytelling. *School Library Journal*, 51(8), 70.
- Korwin, A., & Jones, R. (1990). Do hands-on, technology-based activities enhance learning by reinforcing cognitive knowledge and retention? *Journal of Technology Education*, 1(2), 1-9. Retrieved April 14, 2006 from Proquest Database database.
- Kress, G. (2003). *Literacy in the new media age*. NY, NY: Routledge.
- Kress, G. (2005). Gains and losses: New forms of text, knowing, and learning. *Computers and Composition*, 22, 5-22.
- Kress, G., & van Leeuwen, T. (1996). *Reading images: The Grammar of Visual Design*. London: Routledge.
- Kress, G., & van Leeuwen, T. (2001). *Multimodal discourse: The modes and media of contemporary communication*. London: Edward Arnold.
- Lacina, J. (2003/2004). Technology and the writing workshop. *Childhood Education*, 80(2), 101-103.
- Lacina, J., Hagan, L., & Griffith, B. (2006). Developing a writing workshop classroom: Collaboration between a charter school principal, second grade teacher, and university professor. *The Teacher Educator*, 42(1), 63-75.
- Ladson-Billings, G. (1994). *The dreamkeepers* (1st ed.). San Francisco, CA: Jossey-Bass Inc.
- Ladson-Billings, G., & Gomez, M. (2001). Just showing up: Supporting early literacy through teachers' professional communities. *Phi Delta Kappan*, Vol. 82(Iss. 9), p. 675--680.
- Lensmire, T. (1997). The teacher as Dostoevskian novelist. *Research in the Teaching of English*, 31(3), 367-392.
- Lensmire, T. (1998). Rewriting student voice. *J. Curriculum Studies*, 30(3), 261-291.
- Lensmire, T. J. (2000). *Powerful writing: Responsible teaching*. NY, NY: Teachers College Press.
- Lewis, C., & Fabos, B. (2000). But will it work in the heartland? A response and illustration. *Journal of Adolescent & Adult Literacy*, 43(5), 462-469.
- Lincoln, E., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

- Luke, A., & Elkins, J. (1998). Reinventing literacy in "new times." *Journal of Adolescent and Adult Literacy*, 42(1), 4-7. Retrieved April 14, 2006 from Proquest Database database.
- Mair, V. H. (1988). *Painting and performance: Chinese picture recitation and its Indian genesis*. Honolulu: University of Hawaii Press.
- Malinowski, B. (1922). *Argonauts of the western pacific*. London: Routledge.
- McLuhan, M. (2003). In McLuhan S., Staines D. (Eds.), *Understanding me*. Canada: M&S, Toronto.
- Meyer, R. (July 2002). Captives of the script: Killing us softly with phonics. *Language Arts*, 79(6), 452-461.
- Moebius, B. (1986). Introduction to picturebook titles. *Word & Image*, 2(2), 119-136.
- Moran, C. (2005). Powerful medicine with long term side effects. *Computers and Composition*, (22), 63-68.
- Myers, K., & Pough, J. (2002). Comfort in discomfort: Experimenting with writing workshop in third grade. *Primary Voices*, 11(2), 38-47.
- Ormerod, F., & Ivanic, R. (2000). Texts in practice: Interpreting the physical characteristics of children's project work. In D. Barton, M. Hamilton & R. Ivanic (Eds.), *Situated literacies: Reading and writing in context* (pp. 91-107). London: Routledge.
- Paugh, P., Carey, J., King-Jackson, V., & Russell, S. (2007). Negotiating the literacy block: Constructing spaces for critical literacy in a high-stakes setting. *Language Arts*, 85(1), 31-42.
- Peterson, C. (2005). Teacher-student networks: Using technology-infused curriculum to turn around students at risk. In B. Kamler, & B. & Comber (Eds.), *Turn-around pedagogies* (1st ed., pp. 47-62). Newtown, Australia: Primary English Teaching Association.
- Pickett, J. P. (Ed.). (2001). *The American heritage dictionary*. NY, NY: Dell Publishing.
- Potter, W. J. (2004). *Theory of media literacy A cognitive approach*. Thousand Oaks, CA: Sage Publications Inc.
- Pplw.com. (2007). Retrieved Oct. 25, 2005, from <http://www.pplw.com> (a pseudonym)
- Prior, P. (2005). Moving multimodality beyond the binaries: A response to Gunther Kress's 'Gains and losses'. *Computers and Composition*, (22), 23-30.

- Ray, K. W. (2001). Writing workshop: Working through the hard parts (and they're all hard parts). NCTE.
- Ray, K. W. (2006). Exploring inquiry as a teaching stance in the writing workshop. *Language Arts*, 83(3), 238-247.
- Richardson, W. (2005). The educator's guide to the read/write web. *Educational Leadership*, 63(4), 27.
- Roche-Smith, J. R. (2004). Multiple literacies, new pedagogy: Emerging notions of oneself and others in a digital storytelling after-school program for middle school students. (Ed.D., University of California, Berkeley).
- Rothermel, D. (2004). It's conversation that drives the bus in the writing workshop. *New England Reading Association*, 40(1), 31-34.
- Rudman, M. K. (1995). *Children's literature: An issues approach* (3rd ed.). White Plains, NY: Longman Publishers.
- Salpeter, J. (2005). Telling tales with technology. *Technology & Learning*, 25(7), 18.
- Schley, R. (1997). Travel planning online. *The futurist* [H.W.Wilson - SSA], 31, 12.
- Schrock, K. Kathy Schrock's WebQuest archives. Retrieved April 19, 2005, from <http://kathyschrock.net/webquests/>
- Schwandt, T. (2001). *Dictionary of qualitative inquiry*. Thousand Oaks, CA: Sage Publications, Inc.
- Smith, M. (2006). Tackling the tech gender gap. *Technology & Learning*, 26(6), 6.
- Spradley, J. P. (1980). *Participant observation*. NY, NY: Holt, Rinehart and Winston.
- Stokes, S. (2001). Visual literacy in teaching and learning: A literature perspective. *Electronic Journal for the Integration of Technology in Education*, 1(1) Retrieved October 2, 2006 from <http://ejite.isu.edu/Volume1No1/Stokes.html>
- Stone, J., Kagan, S. (1994). *Cooperative learning & Language Arts*. San Clemente, CA: Kagan.
- Sudol, D., & Sudol, P. (1995). Yet another story: Writers' workshop revisited. *Language Arts*, 72(3), 171-178.
- Vygotsky, L. S. (1962). In Hanfmann E., Vakar G. (Eds.), *Thought and language*. Cambridge, MA: MIT Press.
- Vygotsky, L. S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

- Warschauer, M., Knobel, M., & Stone, L. (2004). Technology and equity in schooling: Deconstructing the digital divide. *Educational Policy*, 18(4), 562-588. Retrieved May 22, 2006 from Sage Publications database.
- Watson, K. L. (1999). WebQuests in the middle school curriculum: Promoting technological literacy in the classroom. Retrieved February 21, 2005, from <http://www.ncsu.edu/meridian/jul99/webquest/index.html>
- Watson, P., & Lacina, J. (2004). Lessons learned from integrating technology in a writing workshop. *Voices from the Middle*, 11(3), 38-44.
- Westbrook, S. (2006). Visual rhetoric in a culture of fear: Impediments to multimedia production. *College English*, 68, 457-480.
- Wilson, T.D., (2006). A re-examination of information seeking behaviour in the context of activity theory. *Information Research*, 11(4) paper 260 from: <http://InformationR.net/ir/11-4/paper260.html>
- Wikipedia. (2008). Retrieved May 15, 2007, from <http://wikipedia.org/>
- Winterdale Public Schools. (2006). Internet safety resources. Retrieved May 24, 2006, from <http://www.pps.winterdale.us/> (a pseudonym)

